

---

*Evaluation of the pilot of the Mental Health Nurse Incentive Program in the Private Hospital Setting*

**ACCOMPANYING REPORT 2: ANALYSIS OF SITE DATA**

presented to

**The Department of Health and Ageing**

by

**The Australian Institute for Social Research**



**Project Team: Dr Kate Barnett (Project Manager) and Ms Naomi Guiver - AISR, Mr Daniel Cox and Mr Richard Giles - Evolution Research Pty Ltd, and Dr Frida Cheok, Health Services Consultant, with assistance from Ms Alicen McNaughton**

**SEPTEMBER 2009**

---

## TABLE OF CONTENTS

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>6</b>
1.1	INTRODUCTION.....	6
1.2	SUMMARY OF FINDINGS.....	7
<b>2</b>	<b>INTRODUCTION.....</b>	<b>12</b>
2.1	BACKGROUND .....	12
2.2	METHODS.....	14
2.2.1	<i>Provision of data to the evaluators.....</i>	14
2.2.2	<i>Data manipulation and analysis .....</i>	15
<b>3</b>	<b>FINDINGS .....</b>	<b>16</b>
3.1	SERVICE PROVISION PROFILE .....	16
3.1.1	<i>Referral and entry .....</i>	16
3.1.2	<i>Eligibility according to entrance criteria .....</i>	17
3.1.3	<i>Reasons for Ineligibility - Clients who did not enter the program.....</i>	17
3.1.4	<i>Adherence to Entrance Guidelines - Clients who entered the program .....</i>	17
3.1.5	<i>Mental health diagnosis at entry.....</i>	19
3.1.6	<i>Level of Care required .....</i>	21
3.1.7	<i>Level of Care by Primary diagnosis .....</i>	22
3.1.8	<i>Assessment tools used at entry.....</i>	23
3.1.9	<i>HoNOS scores at entry .....</i>	24
3.1.10	<i>HoNOS scores at entry by Primary diagnosis.....</i>	27
3.1.11	<i>Reviews.....</i>	28
3.1.12	<i>Exit.....</i>	29
3.1.13	<i>Months in program from entry to exit.....</i>	30
3.2	DEMOGRAPHIC PROFILE OF CONSUMERS .....	31
3.2.1	<i>Gender.....</i>	31
3.2.2	<i>Age.....</i>	31
3.2.3	<i>Marital Status .....</i>	32
3.2.4	<i>Country of Birth.....</i>	32
3.2.5	<i>Language spoken at home.....</i>	33
3.2.6	<i>Indigenous Status.....</i>	33
3.2.7	<i>Remoteness.....</i>	33
3.2.8	<i>Private Health Insurance.....</i>	33
3.3	SERVICE ACTIVITY PROFILE .....	34
3.3.1	<i>Number of face to face consults per client.....</i>	34
3.3.2	<i>Frequency of service (number of face to face consults per client per month).....</i>	35
3.3.3	<i>Frequency of service by Primary diagnosis .....</i>	37
3.3.4	<i>Frequency of service by Level of Care .....</i>	38
3.3.5	<i>Type of contact .....</i>	38
3.3.6	<i>Non attendance .....</i>	38
3.4	EFFECT ON CLIENTS' HEALTH AND FUNCTIONING OVER TIME (HONOS ACROSS REVIEWS) .....	39
3.4.1	<i>Clients who have not yet exited .....</i>	40
3.4.2	<i>Change between Entry and 1<sup>st</sup> Review.....</i>	42
3.4.3	<i>Change between 1<sup>st</sup> Review and 2<sup>nd</sup> Review .....</i>	42
3.4.4	<i>Change between 2<sup>nd</sup> Review and 3<sup>rd</sup> Review .....</i>	43
3.4.5	<i>Change between 3<sup>rd</sup> Review and 4<sup>th</sup> Review .....</i>	44

3.4.6	<i>Clients who had exited the Program</i> .....	44
3.4.7	<i>Change between Entry and 1<sup>st</sup> Review</i> .....	46
3.4.8	<i>Exited clients who had become well/functional</i> .....	47
3.5	PROFILE OF CLIENTS WHO EXITED THE PROGRAM .....	49
3.5.1	<i>Primary diagnosis</i> .....	49
3.5.2	<i>Level of care</i> .....	50
3.5.3	<i>Relationship between HoNOS score at entry and exit from the Program</i> .....	51
3.5.4	<i>Reason for exit</i> .....	51
3.5.5	<i>Exit reason by Primary diagnosis</i> .....	53
3.5.6	<i>Exit destination</i> .....	53
3.6	OUTCOMES (HoNOS) FOR CLIENTS WHO EXITED THE PROGRAM .....	54
3.6.1	<i>HoNOS scores at exit</i> .....	54
3.6.2	<i>HoNOS scores at exit by Primary diagnosis</i> .....	57
3.6.3	<i>Change in HoNOS between entry and exit</i> .....	57
3.6.4	<i>Change in HoNOS between entry and exit for clients who became well/functional</i> .....	58
3.6.5	<i>Comparison of change in HoNOS for clients who became well/functional and clients who exited for other reasons</i> 60	
<b>4</b>	<b>CONCLUSIONS</b> .....	<b>61</b>
4.1	CONCLUSIONS RELATING TO THE ACTIVITY DIMENSION OF THE PROGRAM LOGIC HIERARCHY .....	61
4.1.1	<i>Program responsiveness</i> .....	61
4.1.2	<i>Eligibility criteria for the MHNIP</i> .....	61
4.1.3	<i>Need based on entry HoNOS score</i> .....	62
4.1.4	<i>Client mental health need</i> .....	62
4.1.5	<i>Average time spent in the Program</i> .....	62
4.1.6	<i>Services provided to clients</i> .....	62
4.2	CONCLUSIONS RELATING TO THE OUTCOMES DIMENSION OF THE PROGRAM LOGIC HIERARCHY.....	62
4.2.1	<i>Exit related information</i> .....	62
4.2.2	<i>Relationship between HoNOS score at entry and exit</i> .....	63
4.2.3	<i>Impact of MHNIP on clients, as measure by changes in HoNOS scores over time</i> .....	63
4.2.4	<i>Change in HoNOS score between entry and exit to the Program</i> .....	63
<b>5</b>	<b>ATTACHMENTS</b> .....	<b>65</b>
5.1	SITE DATA COLLECTION TOOL .....	65
5.2	THE MHNIP DATA COMPILATION FORM .....	65

## LIST OF FIGURES

FIGURE 1:	NUMBER OF CLIENTS WHO ENTERED THE PROGRAM, BY SITE .....	16
FIGURE 2:	PATHWAYS FROM REFERRAL TO ENTRY .....	18
FIGURE 3:	PERCENTAGE OF CLIENTS NOT MEETING ENTRANCE CRITERIA .....	18
FIGURE 4:	PRIMARY DIAGNOSIS AT ENTRY TO THE PROGRAM.....	19
FIGURE 5:	PRIMARY DIAGNOSIS AT ENTRY, BY SITE .....	20
FIGURE 6:	SECONDARY DIAGNOSIS AT ENTRY .....	20
FIGURE 7:	LEVEL OF CARE MIX BY SITE .....	22
FIGURE 8:	LEVEL OF CARE BY PRIMARY DIAGNOSIS .....	22
FIGURE 9:	PERCENTAGE OF CLIENTS WITH A HoNOS SCORE REPORTED AT ENTRY, BY SITE .....	23
FIGURE 10:	DISTRIBUTION OF HoNOS SCORES REPORTED UNDER THE MHNOC FOR VOLUNTARY ADULT CLIENTS.....	25
FIGURE 11:	AVERAGE AND MEDIAN HoNOS SCORE AT ENTRY, BY SITE .....	26
FIGURE 12:	DISTRIBUTION OF HoNOS SCORES AT ENTRY TO THE MHNIP, BY SITE .....	26

FIGURE 13: AVERAGE AND MEDIAN HONOS SCORE AT ENTRY FOR CLIENTS IN THE MAIN DIAGNOSTIC GROUPS (PRIMARY DIAGNOSIS) .....	27
FIGURE 14: DISTRIBUTION OF HONOS SCORES AT ENTRY TO THE MHNIP, BY MAIN DIAGNOSTIC GROUP (PRIMARY DIAGNOSIS) .....	28
FIGURE 15: PERCENTAGE OF CLIENTS WHO WERE IN THE PROGRAM FOR MORE THAN 3 MONTHS BUT WERE NOT REVIEWED, BY SITE .....	29
FIGURE 16: AVERAGE NUMBER OF DAYS BETWEEN REVIEWS, ALL SITES COMBINED .....	29
FIGURE 17: PERCENTAGE OF CLIENTS WHO EXITED THE PROGRAM, BY SITE.....	30
FIGURE 18: MONTHS IN PROGRAM BETWEEN ENTRY AND EXIT, BY SITE .....	30
FIGURE 19: AVERAGE AND MEDIAN NUMBER OF MONTHS SPENT IN PROGRAM, BY SITE .....	31
FIGURE 20: AGE PROFILE BY SITE .....	32
FIGURE 21: MARITAL STATUS BY SITE .....	32
FIGURE 22: COUNTRY OF BIRTH BY SITE.....	33
FIGURE 23: PRIVATE HEALTH INSURANCE BY SITE .....	34
FIGURE 24: AVERAGE AND MEDIAN NUMBER OF FACE TO FACE CONSULTS PER CLIENT, BY SITE.....	35
FIGURE 25: SCATTERPLOT SHOWING AVERAGE NUMBER OF FACE TO FACE SERVICES PER MONTH BY NUMBER OF MONTHS BETWEEN ENTRY AND MOST RECENT SERVICE, FOR INDIVIDUAL CLIENTS AT EACH SITE.....	37
FIGURE 26: TYPE OF CONTACT BY SITE .....	38
FIGURE 27: NON ATTENDANCE BY SITE .....	39
FIGURE 28: AVERAGE HONOS SCORES AT ENTRY AND REVIEWS: CLIENTS WHO HAD NOT YET EXITED.....	41
FIGURE 29: CHANGE IN HONOS BETWEEN ENTRY AND 1ST REVIEW: CLIENTS WHO HAD NOT YET EXITED .....	42
FIGURE 30: CHANGE IN HONOS BETWEEN 1ST REVIEW AND 2ND REVIEW: CLIENTS WHO HAD NOT YET EXITED.....	43
FIGURE 31: CHANGE IN HONOS BETWEEN 2ND REVIEW AND 3RD REVIEW: CLIENTS WHO HAD NOT YET EXITED .....	43
FIGURE 32: CHANGE IN HONOS BETWEEN 3RD REVIEW AND 4TH REVIEW: CLIENTS WHO HAD NOT YET EXITED .....	44
FIGURE 33: CHANGE IN AVERAGE HONOS SCORES OVER TIME .....	45
FIGURE 34: CHANGE IN HONOS BETWEEN ENTRY AND 1ST REVIEW: CLIENTS WHO HAD EXITED THE PROGRAM.....	46
FIGURE 35: AVERAGE HONOS SCORES AT ENTRY AND REVIEWS: CLIENTS WHO BECAME WELL/FUNCTIONAL.....	47
FIGURE 36: CHANGE IN HONOS BETWEEN ENTRY AND 1ST REVIEW: CLIENTS WHO BECAME WELL/FUNCTIONAL .....	49
FIGURE 37: PRIMARY DIAGNOSIS OF CLIENTS WHO EXITED THE PROGRAM .....	49
FIGURE 38: RATE OF EXIT BY PRIMARY DIAGNOSIS.....	50
FIGURE 39: LEVEL OF CARE OF CLIENTS WHO EXITED THE PROGRAM .....	50
FIGURE 40: EXIT RATE BY LEVEL OF CARE .....	51
FIGURE 41: EXIT REASON .....	52
FIGURE 42: EXIT DESTINATION .....	54
FIGURE 43: DISTRIBUTION OF HONOS SCORES REPORTED UNDER THE MHNOC FOR VOLUNTARY ADULT CLIENTS AT EXIT FROM AN AMBULATORY SERVICE IN 2006-7 .....	55
FIGURE 44: AVERAGE AND MEDIAN HONOS SCORE AT EXIT, BY SITE.....	56
FIGURE 45: DISTRIBUTION OF HONOS SCORES AT EXIT.....	56
FIGURE 46: AVERAGE AND MEDIAN HONOS SCORE AT EXIT FOR CLIENTS IN THE MAIN DIAGNOSTIC GROUPS (PRIMARY DIAGNOSIS) .....	57
FIGURE 47: CHANGE IN HONOS BETWEEN ENTRY AND EXIT .....	58
FIGURE 48: CHANGE IN HONOS BETWEEN ENTRY AND EXIT: CLIENTS WHO BECAME WELL/FUNCTIONAL.....	59
FIGURE 49: CHANGE IN HONOS BETWEEN ENTRY AND EXIT FOR CLIENTS WHO BECAME WELL/FUNCTIONAL .....	60

## LIST OF TABLES

TABLE 1: PERIOD OF TIME FOR WHICH SITE DATA WERE PROVIDED .....	14
TABLE 2: COMORBID MENTAL DISORDERS IN THE MHNIP CLIENT GROUP: PRIMARY AND SECONDARY DIAGNOSIS .....	21
TABLE 3: NUMBER OF FACE TO FACE CONSULTS PER CLIENT BY SITE: STATISTICS .....	35
TABLE 4: NUMBER OF MONTHS BETWEEN ENTRY AND MOST RECENT SERVICE .....	36
TABLE 5: NUMBER OF FACE TO FACE CONSULTS PER CLIENT PER MONTH BY PRIMARY DIAGNOSIS (MAIN DIAGNOSTIC GROUPS): STATISTICS ...	37
TABLE 6: AVERAGE FACE TO FACE SERVICES PER CLIENT PER MONTH BY LEVEL OF CARE REQUIRED .....	38
TABLE 7: HONOS SCORES AT ENTRY AND REVIEWS FOR CLIENTS WHO HAD NOT YET EXITED: STATISTICS .....	41
TABLE 8: HONOS SCORES AT ENTRY AND REVIEWS FOR CLIENTS WHO HAD EXITED THE PROGRAM: STATISTICS .....	45
TABLE 9: HONOS SCORES AT ENTRY AND REVIEWS FOR CLIENTS WHO BECAME WELL/FUNCTIONAL: STATISTICS .....	48
TABLE 10: EXIT REASON BY PRIMARY DIAGNOSIS .....	53
TABLE 11: SUMMARISING THE CHANGES IN HONOS SCORES, OVER TIME .....	64

DRAFT

# 1 EXECUTIVE SUMMARY

## 1.1 Introduction

The Australian Institute for Social Research (AISR) was commissioned by the Nursing Section of the Department of Health and Ageing, Canberra to evaluate the Piloting of the *Mental Health Nurse Incentive Program* (MHNIP) in private hospital settings. Specifically, the Department sought these four outcomes from the evaluation.

- Development of an evaluation framework for Piloting the inclusion of private hospitals as eligible organisations under the Mental Health Nurse Incentive Program.
- Development of data collection tools to undertake research.
- Analysis of data collected across the Pilot sites including, but not limited to:
  - ⇒ Analysis of patient outcomes;
  - ⇒ Analysis of participant (ie. mental health nurses, general practitioners and psychiatrists) outcomes;
  - ⇒ Analysis of the views of Mental Health Nurses (ie. has the Pilot contributed to improvement in patient care).
- Submission of a final report outlining the effectiveness of the Pilot and options for future program enhancements.

The review has focused on six of a possible seven Pilot sites. These are located in –

- Adelaide
- Perth
- Taree
- Toowong
- Warrnambool
- Essendon.

The key components of the review methodology have involved:

- 1) Development of an Evaluation Framework to structure the review.
- 2) **Design of a user-friendly data collection tool for sites to document service data, including HoNOS scores, client profile data and service usage patterns.**
- 3) Design of a Service Profile Matrix.
- 4) Visits to all participating sites by the project team. These visits were structured to familiarise the evaluators with the particular interpretation of the MHNIP model adopted by that site and the reasons underlying the design of that model, to obtain qualitative feedback about the program, challenges being faced and how these were being addressed, successes and the reasons for these, and other issues. Each team member was allocated specific responsibility for a particular site (s) to enable a positive working relationship to be developed between the evaluators and the sites, and to support ongoing communication. All Mental Health Nurses and Coordinators (the latter have been appointed by two sites) were interviewed at length during these visits.

- 5) Analysis of Medicare data relating to MHNIP Pilot sites.
- 6) Design of three survey instruments to quantify feedback from Mental Health Nurses (and Coordinators, where these have been appointed), from referring Psychiatrists and GPs (although there were few of the latter involved in this Pilot), and from clients.
- 7) Analysis of all findings.
- 8) Reporting. A number of specific reports have been provided throughout the Review, including this report of Survey Findings. These are designed to be read as accompanying reports to the Final Report of all findings.

**This report presents findings arising from analysis of the service data provided directly to the evaluators by each site, and is designed to be read as an Accompanying Report to the Final Report of the evaluation.**

## 1.2 Summary of findings

---

This section summarises information relating to the following service and client profile features –

- Referral, entry and exit patterns
- Eligibility of clients for service
- Client diagnosis at entry
- Level of care required
- HONOS score at entry
- Client reviews
- Demographic client profile
- Service activity profile
- Impact of the MHNIP on clients – based on changes in HoNOS scores over time.

### Referral entry and exit patterns

Five sites reported data on a total of **277** client referrals to the MHNIP, of whom **271** met Program eligibility criteria.

Almost all clients who were referred to the program entered the Program (271 clients, **97.8%**), and **30.3%** of those who entered had exited the Program by the date on which the data were compiled.

**The majority (70%) of clients entered the Program on the date they were referred – indicating a high degree of Program responsiveness.**

### Eligibility

Four of the five sites surveyed entered all of their referred clients into the MHNIP. Only six referred clients from one site were not accepted into the MHNIP.

Each of the six clients who were not entered into the program did not meet one or more eligibility criteria. All six clients did not meet Criterion 6 (Consenting to treatment from a Mental Health Nurse). Four of the six clients did not meet Criterion 4 (Expecting to require continuing treatment over the next two years).

Of the 271 clients entered into the Program, more than one in five (21.8%) failed one or more eligibility criteria and were therefore ineligible according to program guidelines.

**These findings may indicate the need to review Program Guidelines, possibly with a view to changing the number of criteria that must be met to achieve eligibility.**

### Diagnosis at entry

The most frequently reported primary diagnosis at entry to the MHNIP for more than half (53%) of clients was *Mood Disorder*.

One quarter of clients had been diagnosed with *Schizophrenia or Other Psychotic Disorder* and 15% of clients were reported as having an *Anxiety Disorder*.

A secondary diagnosis was reported for **13%** of clients; the most frequently reported secondary diagnosis being *Personality Disorder*.

### Level of care required

Levels of required care differed across the five sites. In part, this may be due to differing interpretation of low, medium and high care needs across sites. The following patterns were evident –

- Clients at the Adelaide site were all categorised as requiring Medium or High level care.
- More than half of the Perth and Toowong site clients were categorised as requiring High level care.
- The majority of clients at the Taree and Warrnambool sites were considered to require Low level care.

Sites differed in the levels of care assigned to clients within diagnostic groups. However, there was a trend for a greater proportion of clients with *Schizophrenia or Other Psychotic Disorder* to be classified as requiring a high level of care.

### HoNOS score at entry to service

Across sites HoNOS scores at entry varied from an average of 12.3 (Warrnambool site) to 17.7 (Perth site).

The average HoNOS score at entry across all sites was **14.5** (median 14) with a standard deviation of 5.8.

This is comparable with the **average** HoNOS score reported nationally under the MHNOC for voluntary adult clients at entry to an ambulatory service in 2006-7.



## HoNOS at entry by Primary Diagnosis

The average HoNOS score at entry was similar across diagnostic groups, ranging from 13.8 for clients with a *Mood Disorder* through to 15.8 for clients with a *Personality Disorder*.

## Client reviews

MHNIP guidelines require a Mental Health Nurse to review a client's symptoms and functioning every 90 days and at the exit from the Program. Based on the data provided to the evaluators, **243** clients were part of the program for more than 3 months, but one third of these clients had **not** been reviewed. This may have been due to difficulty contacting or maintaining engagement, or the use of alternative procedures for monitoring clients.

Examining the period of time between Reviews, the number of days between entry to the Program and the first Review does appear to **generally be greater than 90 days**. However **subsequent reviews appear to have been conducted at intervals of around 90 days**.

## Demographic profile of clients

### Gender

Across all sites, approximately three in every five clients were **female**, with the exception of the Taree site which reported approximately half males and half females.

### Age

The majority of MHNIP clients were aged between 15 and 64 years, with an average age of **45.8 years**.

### Marital Status

Slightly more than one third of clients were *Never married / Single* and just over one third of clients were *Married / Defacto*. A further 22% were *Separated/Divorced* and 8% *Widowed*.

### Country of Birth

Over ninety percent of clients in the sample were born in Australia.

### Language spoken at home

All clients reported **English** as the main language spoken at home.

### Indigenous Status

Only one client was reported as being of Indigenous Status.

### Remote location

Over sixty percent of clients in the sample reside in a *major city* locality and one third of clients live in an *inner regional* location. Only 5% of clients live in an *outer regional* locality.

### **Private Health Insurance**

Across all sites, nearly **sixty percent** of clients were reported as having private health insurance. However, this proportion varied greatly across sites from 18% at Taree to 84% at Toowong.

## **Service activity profile**

### **Face-to-face Service provision**

Across all sites, clients (with face-to-face sessions reported) received an **average of 14 face-to-face service sessions each**.

The average number of face-to-face service sessions per client varied **across sites** from a low of 7.0 at the Warrnambool site to a high of 17.5 at Toowong, and the number of services per client varied considerably **within** sites. For example, Toowong site data reported one client with zero face-to-face services and another client with 81 services.

The number of face-to-face services provided to a client will of course vary depending on the length of time which they are engaged with the service, potentially confounding apparent differences between sites. Therefore the “average number of face-to-face services per month” has also been calculated for clients.

Clients had received an **average of 2 face-to-face services per month**, over an average timespan of 7.1 months of activity.

Across all main primary diagnoses, the number of face-to-face services tended to average around **two per month**.

### **Average Face to Face Services per Month by Level of Care**

Average number of face-to-face services per month appears to increase as level of care required increases, averaging 1.4 services per month for low, 1.9 for medium, and 2.6 for high care needs.

### **Type of Contact**

Clients could receive one of three types of contact – *in clinic*, *home visit* or *telephone* contact. Across all sites, 96% of clients were contacted at least once by telephone, 84% received at least one home visit and 58% were seen at least once in the clinic.

Sites differed as to their use of each type of contact. For example, every client from the Taree site received in clinic services, home visits and telephone contact, whereas only 15% of clients at the Perth site received home visits.

### **Non attendance**

Non attendance was a major issue for nearly one third of clients at the Perth site and nearly one quarter of clients at the Adelaide site. These trends may reflect different site-based approaches to type of client contact – for example, the Perth site makes the lowest use of home visits while a significant proportion of

Taree's client contact is home-based and they were the most likely site to report non attendance as a non issue.

## Impact of the MHNIP on clients

The impact of the MHNIP on clients can be measured by comparing HoNOS scores over time, between entry and first review, through to subsequent reviews and exit from the Program. A reduced score indicates an improvement.

Change in HoNOS scores over time was analysed separately for the following three subgroups:

1. Clients who had *not yet exited* the program;
2. Clients who *had exited* the program;
3. Clients who had exited the program due to *becoming well or functional* according to their reason for exit (a subset of group 2).

There was a **statistically significant improvement in HoNOS scores over time** for clients who had not yet exited the program ( $p < .01$ ). Statistically significant improvements occurred **between Entry and 1<sup>st</sup> Review** and **Entry and 4<sup>th</sup> Review** for this group of clients.

While changes in HoNOS scores across Reviews were not statistically significant for the smaller group of clients who had exited the program, there was a **statistically significant improvement in HoNOS scores between Entry and Exit** for all clients who had exited the program ( $p < .01$ ) and for the subgroup of clients who had exited the program due to becoming well or functional ( $p < .001$ ).

The average HoNOS score at each time point for each subgroup of clients is summarised in the table below.

**Table 1: Average HoNOS scores at each time point**

Time point	Not yet exited		Exited		Exited due to becoming well or functional	
	No. of clients with HoNOS	Average HoNOS	No. of clients with HoNOS	Average HoNOS	No. of clients with HoNOS	Average HoNOS
<b>Entry</b>	158	<b>14.9</b>	65	<b>13.5</b>	40	<b>12.5</b>
<b>1<sup>st</sup> Review</b>	110	<b>11.6*</b>	51	<b>11.6</b>	28	<b>9.9</b>
<b>2<sup>nd</sup> Review</b>	57	<b>12.5</b>	15	<b>11.5</b>	8	<b>6.8</b>
<b>3<sup>rd</sup> Review</b>	41	<b>12.3</b>	11	<b>6.8</b>	5	<b>6.4</b>
<b>4<sup>th</sup> Review</b>	3	<b>9.3*</b>	-	-	-	-
<b>Exit</b>	-	-	46	<b>9.5**</b>	29	<b>6.6***</b>

\*Statistically significant difference between **Entry and 1<sup>st</sup> Review** ( $p < .01$ ) and **Entry and 4<sup>th</sup> Review** ( $p < .01$ ).

\*\*Statistically significant difference between **Entry and Exit** ( $p < .01$ ).

\*\*\*Statistically significant difference between **Entry and Exit** ( $p < .001$ ).

The change in HoNOS scores between each timepoint was quantified for each client, in order to identify the direction and extent of change. The table below summarises the changes in HoNOS scores between reviews and between entry and exit for the three subgroups of clients.

**Table 2: Summary of changes in HoNOS scores over time**

Interval	No. clients with HoNOS at both time points	% of clients showing Improvement	% of clients showing No Change	% of clients showing Deterioration	Average Change
<i>Clients who had not yet exited the MHNIP (n=189)</i>					
Entry to 1 <sup>st</sup> Review	158	64%	11%	25%	3.3 HoNOS points improvement*
1 <sup>st</sup> to 2 <sup>nd</sup> Review	57	48%	9%	44%	0.6 HoNOS points improvement
2 <sup>nd</sup> to 3 <sup>rd</sup> Review	40	52.5%	5%	42.5%	0.2 HoNOS points deterioration
3 <sup>rd</sup> to 4 <sup>th</sup> Review	16	50%	19%	31%	1.8 HoNOS points improvement
<i>Clients who had exited the MHNIP (n=82)</i>					
Entry to 1 <sup>st</sup> Review	41	66%	5%	29%	2.5 HoNOS points improvement
<b>Entry to Exit</b>	<b>46</b>	<b>67%</b>	<b>7%</b>	<b>26%</b>	<b>4.0 HoNOS points improvement**</b>
<i>Clients who had exited the MHNIP due to becoming well or functional (n=41)</i>					
Entry to 1 <sup>st</sup> Review	28	71%	4%	25%	2.8 HoNOS points improvement
<b>Entry to Exit</b>	<b>29</b>	<b>83%</b>	<b>3%</b>	<b>14%</b>	<b>5.7 HoNOS points improvement***</b>

\*A statistically significant change occurred between **Entry and 1<sup>st</sup> Review** ( $p < .01$ ) and also **Entry and 4<sup>th</sup> Review** ( $p < .01$ , not shown).

\*\*Statistically significant change ( $p < .01$ ).

\*\*\*Statistically significant change ( $p < .001$ ).

## 2 INTRODUCTION

### 2.1 Background

The Australian Institute for Social Research (AISR) was commissioned by the Nursing Section of the Department of Health and Ageing, Canberra to evaluate the Piloting of the *Mental Health Nurse Incentive Program* (MHNIP) in private hospital settings. Specifically, the Department sought these four outcomes from the evaluation.

- Development of an evaluation framework for Piloting the inclusion of private hospitals as eligible organisations under the Mental Health Nurse Incentive Program.
- Development of data collection tools to undertake research.
- Analysis of data collected across the Pilot sites including, but not limited to:
  - ⇒ Analysis of patient outcomes;

- ⇒ Analysis of participant (ie. mental health nurses, general practitioners and psychiatrists) outcomes;
- ⇒ Analysis of the views of Mental Health Nurses (ie. has the Pilot contributed to improvement in patient care).
- Submission of a final report outlining the effectiveness of the Pilot and options for future program enhancements.

The review has focused on six of a possible seven Pilot sites. These are located in –

- Adelaide
- Perth
- Taree
- Toowong
- Warrnambool
- Essendon (their Mental Health Nurse began employment in the second half of March 2009.)

Canberra, like the Essendon site, experienced significant difficulty in engaging an appropriately accredited Mental Health Nurse, and although the evaluators visited the site for preliminary interviewing purposes, were not able to include the site due to lack of commencement in the timeframe of the Review.

1. Development of an Evaluation Framework to structure the review.
2. **Design of a user-friendly data collection tool for sites to document service data, including HoNOS scores, client profile data and service usage patterns.**
3. Design of a Service Profile Matrix.
4. Visits to all participating sites by the project team. These visits were structured to familiarise the evaluators with the particular interpretation of the MHNIP model adopted by that site and the reasons underlying the design of that model, to obtain qualitative feedback about the program, challenges being faced and how these were being addressed, successes and the reasons for these, and other issues. Each team member was allocated specific responsibility for a particular site (s) to enable a positive working relationship to be developed between the evaluators and the sites, and to support ongoing communication. All Mental Health Nurses and Coordinators (the latter have been appointed by two sites) were interviewed at length during these visits.
5. Analysis of Medicare data relating to MHNIP Pilot sites.
6. Design of three survey instruments to quantify feedback from Mental Health Nurses (and Coordinators, where these have been appointed), from referring Psychiatrists and GPs (although there were few of the latter involved in this Pilot), and from clients.
7. Analysis of all findings.
8. Reporting. A number of specific reports have been provided throughout the Review, including this report of Survey Findings. These are designed to be read as accompanying reports to the Final Report of all findings.

**This report presents findings arising from analysis of service data, and is designed to be read as an Accompanying Report to the Final Report of the evaluation.**

## 2.2 Methods

### 2.2.1 Provision of data to the evaluators

Sites participating in the MHNIP were asked to provide data to the evaluators for all referrals from program inception through to the latest available. Data were provided to the evaluators by the following sites:

- Ramsay Health Care, Adelaide
- Perth Clinic
- Mayo Private Hospital, Taree
- Toowong Private Hospital
- St John of God Hospital, Warrnambool.

Essendon Private Hospital commenced operation subsequent to this data collection, therefore their service is not represented in this analysis. **Table 3** shows the period of time for which each site provided data.

**Table 3: Period of time for which Site Data were provided**

Site	Referral Date		Date Entered Program		Approx. no. of months for which data was provided
	Earliest	Latest	Earliest	Latest	
Ramsay Health Care, Adelaide	16/03/2008	31/03/2009	19/03/2008	31/03/2009	12.5
Perth Clinic	18/03/2008	19/05/2009	19/03/2008	20/05/2009	14
Mayo Private Hospital, Taree	7/10/2007	12/06/2009	7/10/2007	9/04/2009	20
Toowong Private Hospital	14/02/2008	13/03/2009	14/02/2008	13/03/2009	13
St John of God Hospital, Warrnambool	22/01/2008	13/02/2009	29/02/2008	13/02/2009	13
<b>Total</b>	<b>7/10/2007</b>	<b>12/06/2009</b>	<b>7/10/2007</b>	<b>20/05/2009</b>	<b>21</b>

The sites compiled data from their administrative systems using a data collection tool designed for this Review by the AISR evaluation team.

In designing the data collection tool, the evaluators sought to collect data which would be consistently collected across sites participating in the Pilot, and to provide a tool which would be easy to use and minimise the burden of this data collection. Information regarding existing data collection processes and instruments collected during site visits was utilised in the design process.

The data collection tool was designed to be completed in either Excel, Word or on paper by printing copies of the Word document. Details are provided in **Section** Error! Reference source not found.. The key information captured related to –

- ⇒ Referral
- ⇒ Entry related information, including diagnosis and initial HONOS score

- ⇒ Client profile (including age, gender, location, cultural background, and health insurance cover)
- ⇒ HONOS and other assessment scores at each review
- ⇒ Services provided by the Mental Health Nurse
- ⇒ Exit related information, including final HONOS score, date and reason for exit, destination (eg referral to psychiatrist) and any follow up data collected.

Most sites provided their data electronically. For those who submitted hardcopies, the data were entered into Excel by administrative staff at AISR.

### **2.2.2 Data manipulation and analysis**

A complete dataset containing data from all sites was constructed in Microsoft Access. Validation checks, recoding and the majority of the basic analysis was then undertaken using Microsoft Access and Microsoft Excel. More complex analysis including statistical testing was undertaken using SPSS V15.0 and SPSS V17.0.

Sites varied in terms of the information that they were able to provide. Therefore analysis was restricted to items which were available from most sites.

DRAFT

## 3 FINDINGS

### 3.1 Service provision profile

This section provides information about these features of service provision –

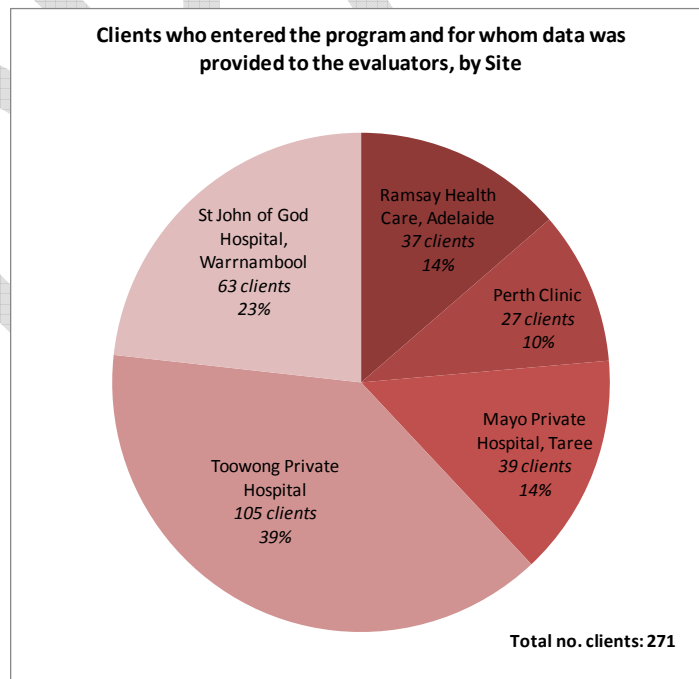
- Referral and entry
- Eligibility according to entrance criteria
- Mental health diagnosis on entry
- Level of Care required
- Assessment tools used at entry
- HoNOS scores at entry
- Reviews
- Exit.

#### 3.1.1 Referral and entry

The five sites provided data on a total of **277** client referrals to the MHNIP.

Almost all clients who were referred to the MHNIP entered the Program (**271** clients, 97.8%). The number of clients who entered the Program at each Site, according to the data provided to the evaluators, is shown in *Figure 1* below.

**Figure 1: Number of clients who entered the Program, by site**



**The majority (70%) of clients entered the Program on the date they were referred – indicating a high degree of Program responsiveness.** The remaining clients entered between 1 and 72 days after referral.



### 3.1.2 Eligibility according to entrance criteria

The entrance criteria for the program as specified in the Program Guidelines are summarised in the box below. **All** criteria must be met for clients to be considered eligible for entry to the program.

#### Box 1: Entrance criteria from the MHNIP Program Guidelines

##### MHNIP Program Guidelines: Entrance criteria

1. The patient has a diagnosis of mental disorder according to the criteria defined in the *World Health Organisation Diagnostic and Management Guidelines for Mental Disorders in Primary Care: ICD 10 Chapter V Primary Care Version*, or the *Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition (DSM-IV)*.
2. The disorder causes significant disablement to the patient's social, personal and occupational functioning.
3. The patient has experienced at least one episode of hospitalisation for treatment of their mental disorder, or is at risk of requiring hospitalisation in the future if appropriate treatment and care is not provided.
4. The patient is expected to require continuing treatment and management of their mental disorder over the next two years.
5. The general practitioner or psychiatrist is principally responsible for the patient's clinical mental health care.
6. The patient provides consent to treatment from a mental health nurse.

### 3.1.3 Reasons for Ineligibility - Clients who did not enter the program

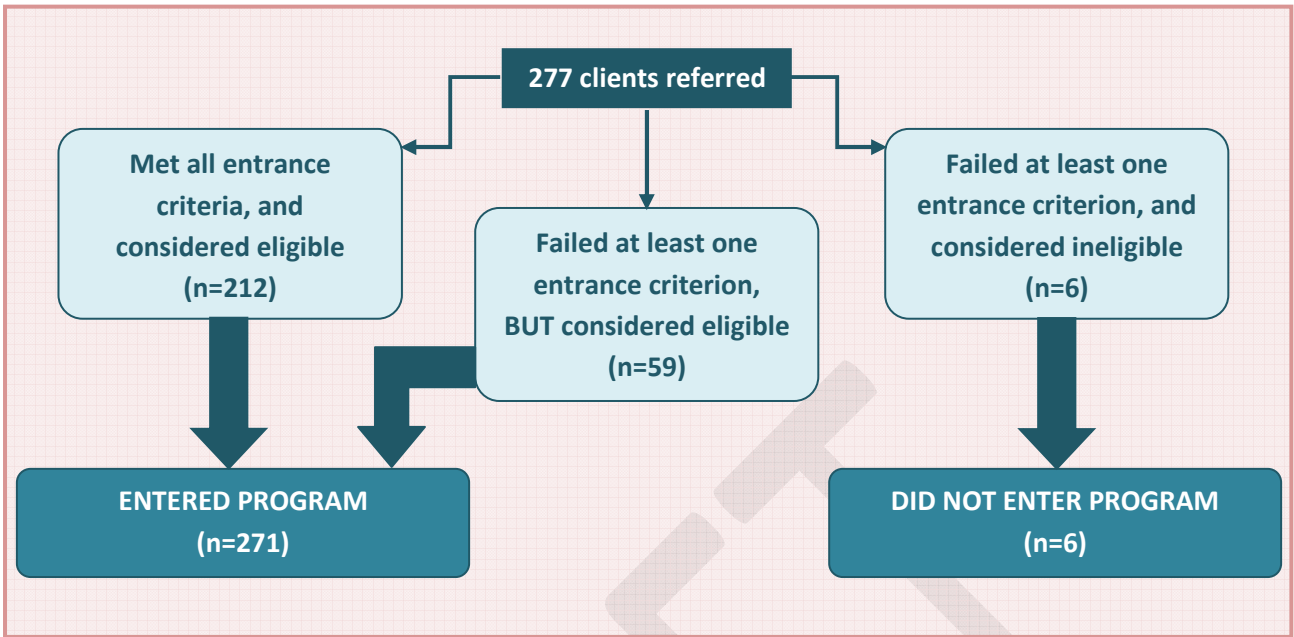
The six clients who *did not enter the Program* failed to meet one or more of the eligibility criteria on assessment. All six clients failed to meet Criterion 6 (Consent to treatment from a Mental Health Nurse), and four of the six clients also failed to meet Criterion 4 (Expected to require continuing treatment over the next two years).

### 3.1.4 Adherence to Entrance Guidelines - Clients who entered the program

Of the 271 clients entered into Program, 59 clients (22%) were reported to have failed to meet one or more entrance criteria and were therefore technically ineligible according to Program Guidelines. In other words, 56 people were accepted into the Program despite failing one or more eligibility criteria.

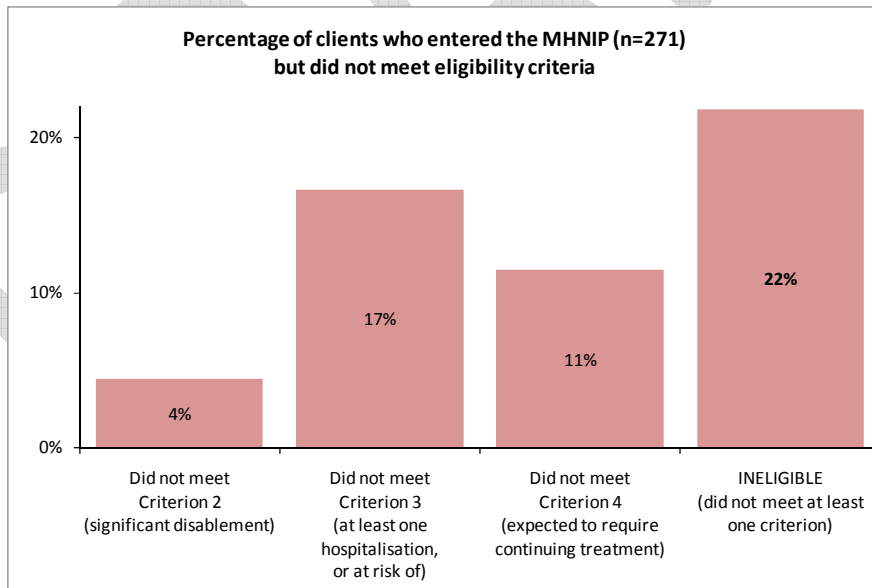
*Figure 2* illustrates the pathway of clients from referral, to Program entry, in terms of eligibility, according to the data provided to the evaluators.

**Figure 2: Pathways from referral to entry**



The 59 clients who entered the Program but who were technically ineligible did not meet at least one of Criteria 2, 3 and 4. The percentage of clients who entered the Program without meeting these entry criteria is shown in *Figure 3* below.

**Figure 3: Percentage of clients not meeting entrance criteria**



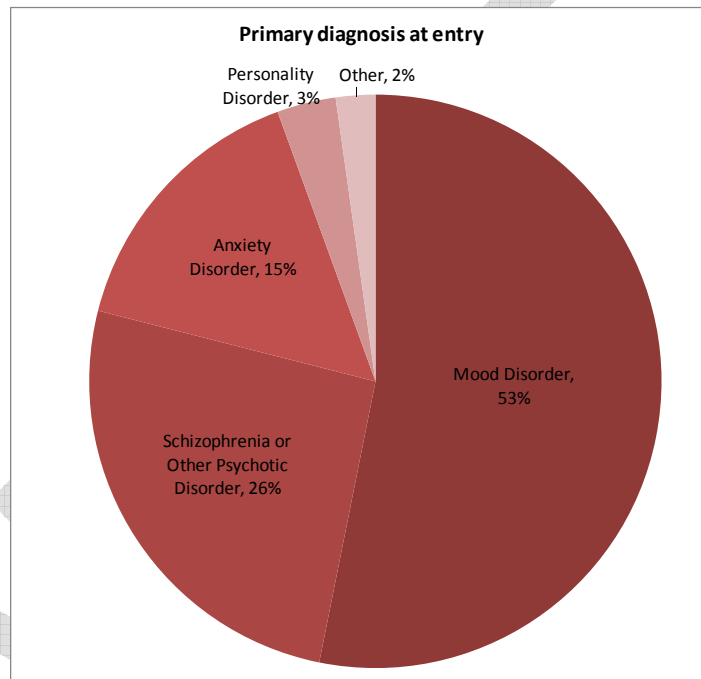
**These findings may indicate the need to review Program Guidelines, possibly with a view to changing the number of criteria that must be met to achieve eligibility.**

### 3.1.5 Mental health diagnosis at entry

#### Primary Diagnosis

As shown in *Figure 4* below, the most commonly reported primary mental health diagnosis at entry to the program was *Mood Disorder* (53% of clients). One quarter of clients had been diagnosed with *Schizophrenia or Other Psychotic Disorder*, and a further 15% of clients were reported as having an *Anxiety Disorder*. Less than 10 clients (3%) had a primary diagnosis of *Personality Disorder*, and the remaining 2% of clients had been diagnosed with either an *Adjustment Disorder*, *Dementia*, *Eating Disorder* or *Substance-Related Disorder*.

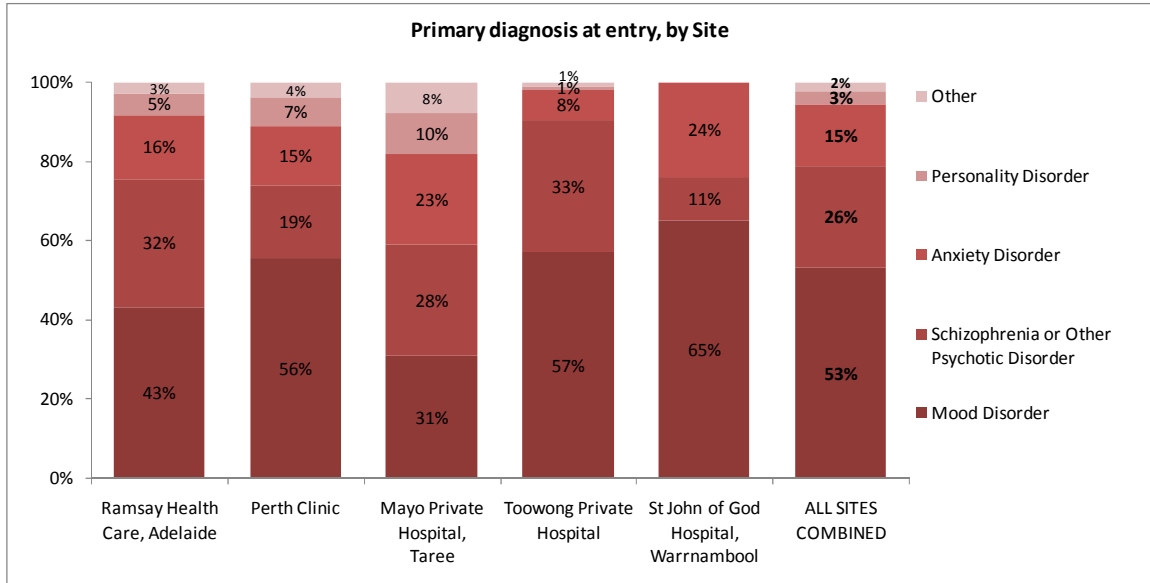
**Figure 4: Primary diagnosis at entry to the Program**



\* "Other" comprises Adjustment Disorders, Dementia, Eating Disorders and Substance-Related Disorders.

*Mood Disorder* was the most frequently reported primary diagnosis at each site, however sites differed in the relative proportions of clients with particular diagnoses (see *Figure 5*). For example, almost two thirds of clients at St John of God Hospital Warrnambool had a primary diagnosis of *Mood Disorder*, whereas clients at Mayo Private Hospital Taree were more evenly distributed across the three main diagnostic groups (*Mood Disorder*, *Schizophrenia or Other Psychotic Disorder* and *Anxiety Disorder*).

**Figure 5: Primary diagnosis at entry, by Site**



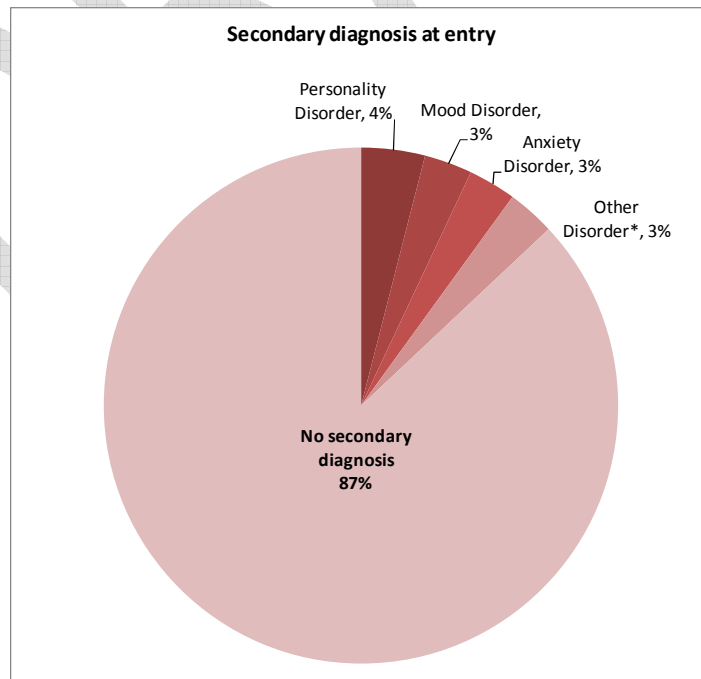
\* "Other" comprises Adjustment Disorders, Dementia, Eating Disorders and Substance-Related Disorders.

### Secondary Diagnosis

Clients with multiple mental health diagnoses (comorbidities) may pose a greater challenge in service provision and tend to be at risk of poorer treatment outcomes than other clients.

A secondary diagnosis was reported for **13%** of clients; the most frequently reported secondary diagnosis was *Personality Disorder* (4% of clients, see Figure 6).

**Figure 6: Secondary diagnosis at entry**



\* "Other" comprises Adjustment Disorders, Dementia, Developmental Disorders and Substance-Related Disorders.

The combinations of primary and secondary diagnoses reported for MHNIP clients are listed in **Table 4** below.

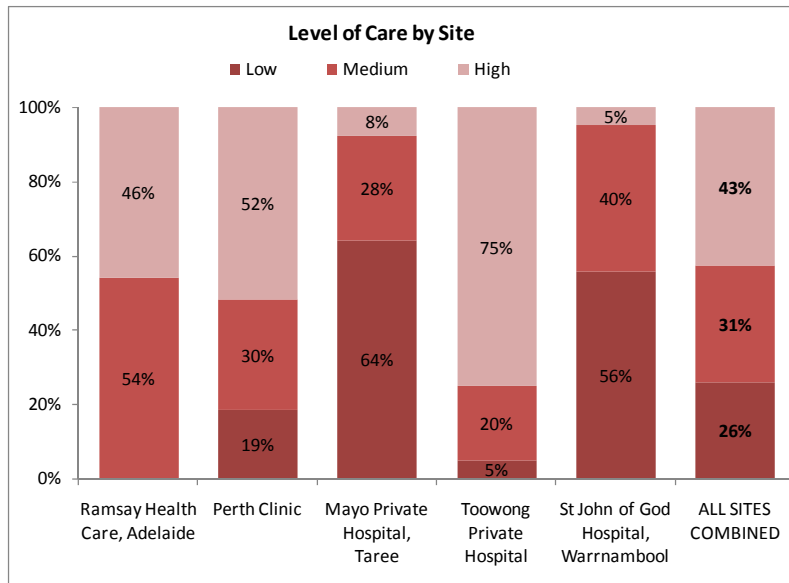
**Table 4: Comorbid mental disorders in the MHNIP client group: primary and secondary diagnosis**

Primary Diagnosis	Secondary Diagnosis
Adjustment Disorder	Personality Disorder
Anxiety Disorder	Adjustment Disorder
	Mood Disorder
	Personality Disorder
	Substance-Related Disorder
Mood Disorder	Adjustment Disorder
	Anxiety Disorder
	Dementia
	Personality Disorder
	Substance-Related Disorder
Personality Disorder	Mood Disorder
Schizophrenia or Other Psychotic Disorder	Anxiety Disorder
	Developmental Disorder
Substance-Related Disorder	Mood Disorder

### 3.1.6 Level of Care required

Sites were asked to indicate the anticipated level of care (low, medium or high level of care) required by each client. *Figure 7* shows the mix of level of care across the five sites. Ramsay Health Care Adelaide was the only site to categorise all clients as requiring Medium or High level care (54% Medium, 46% High). More than half of the clients at Perth Clinic and at Toowong Private Hospital were categorised as requiring High level care, whereas the majority of clients at Mayo Private Hospital Taree and St John of God Hospital Warrnambool were anticipated to require Low level care.

**Figure 7: Level of Care mix by Site**

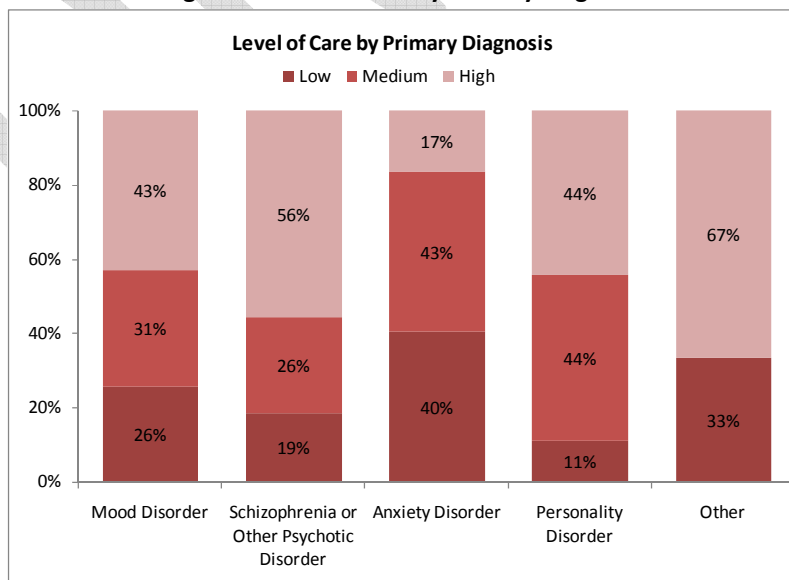


Differences across sites may be at least partially due to differing interpretation of “Low”, “Medium” and “High” care needs. However it is clear that sites vary in other aspects of their client profile, eg. primary diagnosis, which may account for some of the variation in care mix.

### 3.1.7 Level of Care by Primary diagnosis

This section explores the relationship between Level of Care and Primary diagnosis. As shown in *Figure 8* below, sites differed in the levels of care assigned to clients within diagnostic groups, however overall a greater proportion of clients with a primary diagnosis of *Schizophrenia or Other Psychotic Disorder* were classified as requiring a high level of care.

**Figure 8: Level of Care by Primary diagnosis**



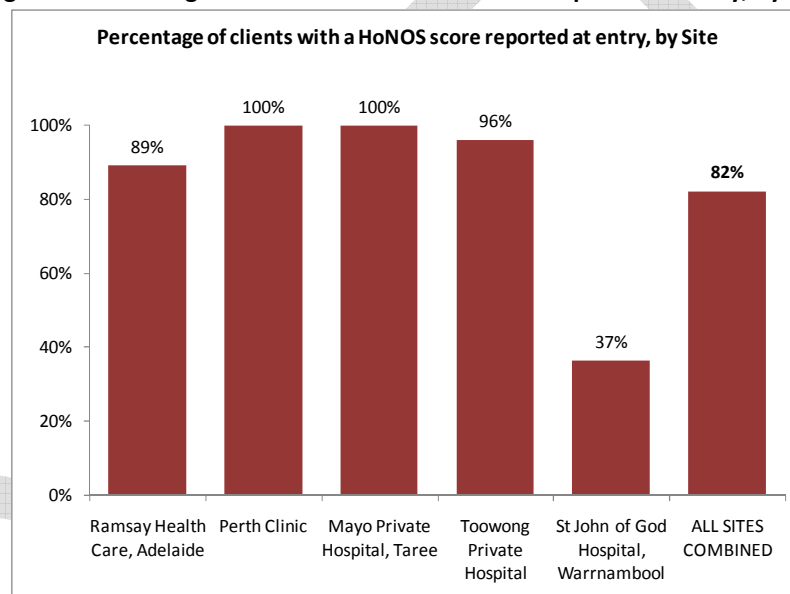
\* “Other” comprises Adjustment Disorders, Dementia, Eating Disorders and Substance-Related Disorders.

### 3.1.8 Assessment tools used at entry

According to the MHNIP program guidelines, Mental Health Nurses are required to use the *Health of the Nation Outcomes Scale* (HoNOS) to assess each client at entry. A HoNOS score was reported on entry to the Program for **82%** of clients. Clients who had *not* been assessed with the HoNOS included those who had entered the Program very recently, clients who had not yet successfully engaged with the service, and clients who had exited very soon after entry due to refusal of service or acute illness.

The percentage of clients at each site for whom a HoNOS score was reported on entry is shown in *Figure 9*. Two sites (Perth Clinic and Mayo Private Hospital Taree) reported a HoNOS score on entry for all of their clients. In contrast, St John of God Warrnambool reported a HoNOS scores at entry for only 23 (37%) of their 63 clients, as they chose to use the Kessler Psychological Distress Scale (K-10) and/or the Abbreviated Life Skills Profile (LSP-16) instead of the HoNOS for many of their clients.

**Figure 9: Percentage of clients with a HoNOS score reported at entry, by Site**



Other assessment tools used on entry were the *Depression Anxiety Stress Scale* (DASS), which was used in conjunction with the HoNOS by Perth Clinic, and the *MHQ-14* (a 14-item patient-completed questionnaire derived from the Medicare Outcomes Study Questionnaire), which was used in conjunction with the HoNOS at Ramsay Health Care Adelaide.

### 3.1.9 HoNOS scores at entry

As discussed in *Section 3.1.8*, HoNOS scores were collected at entry to the Program. This section presents the analysis of those scores together with information on how to interpret the scores.

#### Box 2: Interpreting HoNOS scores

##### Interpreting HoNOS scores

###### **What does the HoNOS measure?**

The HoNOS is a simple 12-item inventory designed to measure the severity of a client's problems across a range of health and social domains – psychiatric symptoms, physical health, behaviour and functioning, relationships and housing. The reference period for the assessment is usually the two weeks prior to the rating.

###### **Versions of the HoNOS**

There are several versions of the HoNOS, for example versions designed for use with children and adolescents, adults, and older people (aged 65+). The general term "HoNOS" will be used in this report to refer to all HoNOS data provided by sites, as the scoring is consistent across these versions.

###### **How is the HoNOS scored?**

Each of the 12 items is scored on a 5-point rating scale where 0 points represents "No problem" and 4 points represents "Severe or very severe problem". The scores for each item are then summed together produce a Total score. The minimum Total Score possible on the HoNOS is zero, which would equate to no problems in any domain, and the maximum Total Score possible is 48, which would equate to severe problems in every domain. The general term "HoNOS score" will be used in this report to refer to the HoNOS Total score.

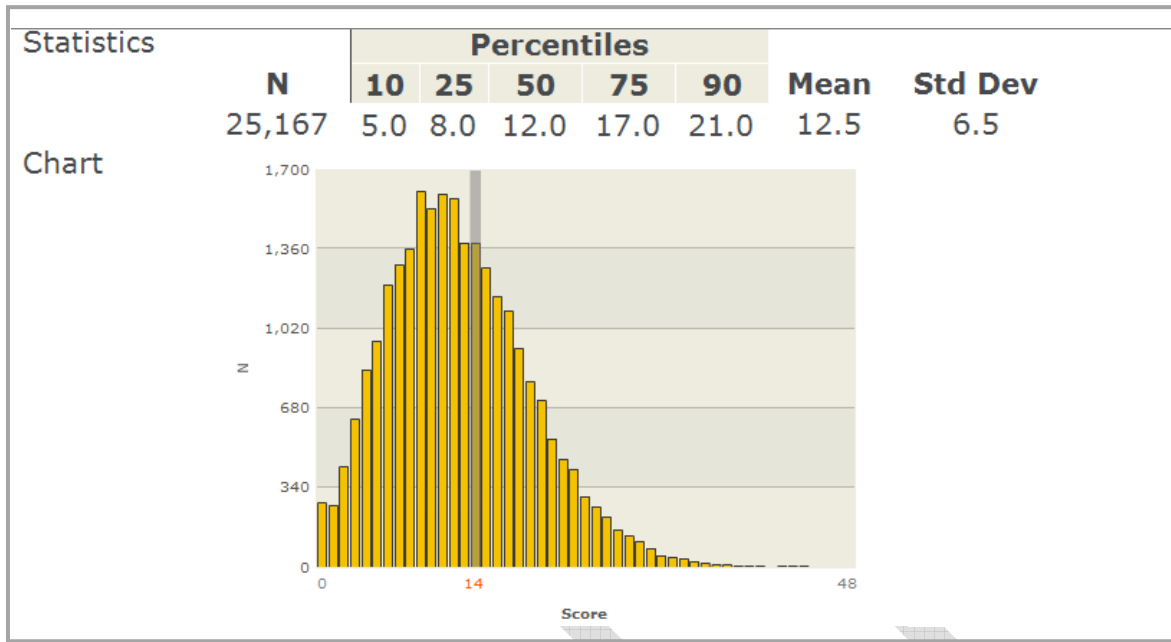
⇒ **Higher HoNOS scores reflect a higher level of severity**  
(ie. more severe difficulties in health and functioning).

HoNOS scores at entry were reported for 223 of the 271 clients who entered the Program. The average HoNOS score at entry across all sites was **14.5** (median 14) with a standard deviation of 5.8.

This is comparable with the average HoNOS score of 12.5 (standard deviation 6.5) reported nationally under the *Mental Health National Outcomes and Casemix Collection Australia* (MHNOC) for voluntary adult clients at entry to an ambulatory service in 2006-7 (the latest available) - see *Figure 10*.



**Figure 10: Distribution of HoNOS scores reported under the MHNOC for voluntary adult clients**



Extracted from the online AMHOCN<sup>1</sup> Web Decision Support Tool, available at <http://wdst.mhnocc.org/>. Retrieved 14/8/2009. Query which produced the image above: <http://wdst.mhnocc.org/query/jurisdiction=national/age-group=adult/measure=honos/view=htot12/level-of-analysis=collection-occasion/occasion=admission/status-score=14/service-setting=ambulatory/financial-year=2006/legal-status=voluntary/>

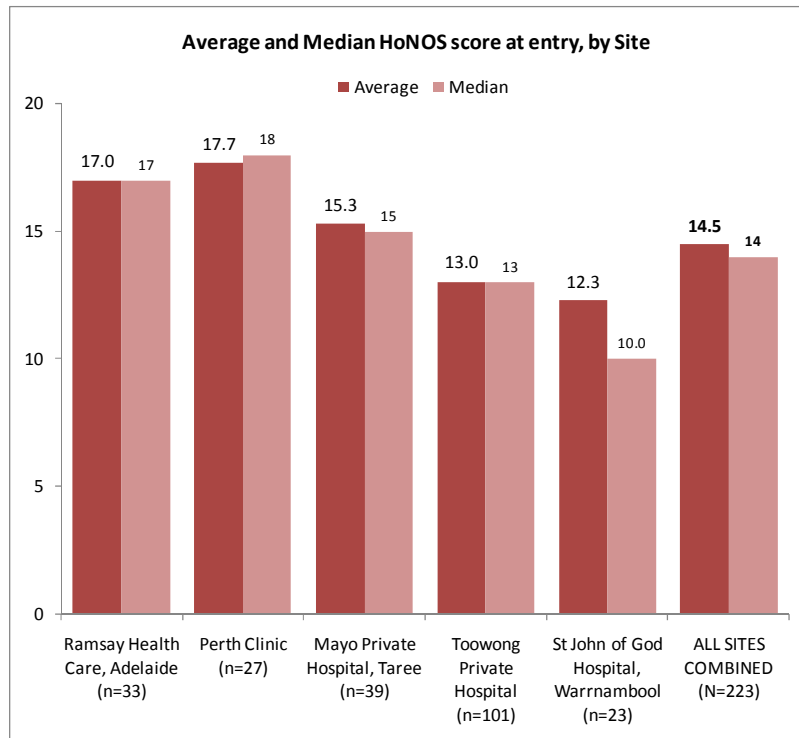
An average HoNOS score of 14.5 (highlighted in *Figure 10* above) would lie around the 65<sup>th</sup> percentile of the national distribution of scores. This suggests that while the overall severity of mental health related problems experienced by the MHNIP client group at entry may appear to be slightly higher on average than for clients of other community-based mental health services, the difference is unlikely to be statistically significant<sup>2</sup>.

Average HoNOS scores at entry varied across sites from 12.3 at St John of God Hospital Warrnambool to 17.7 at Perth Clinic – see *Figure 11*.

<sup>1</sup> Australian Mental Health Outcomes and Classification Network

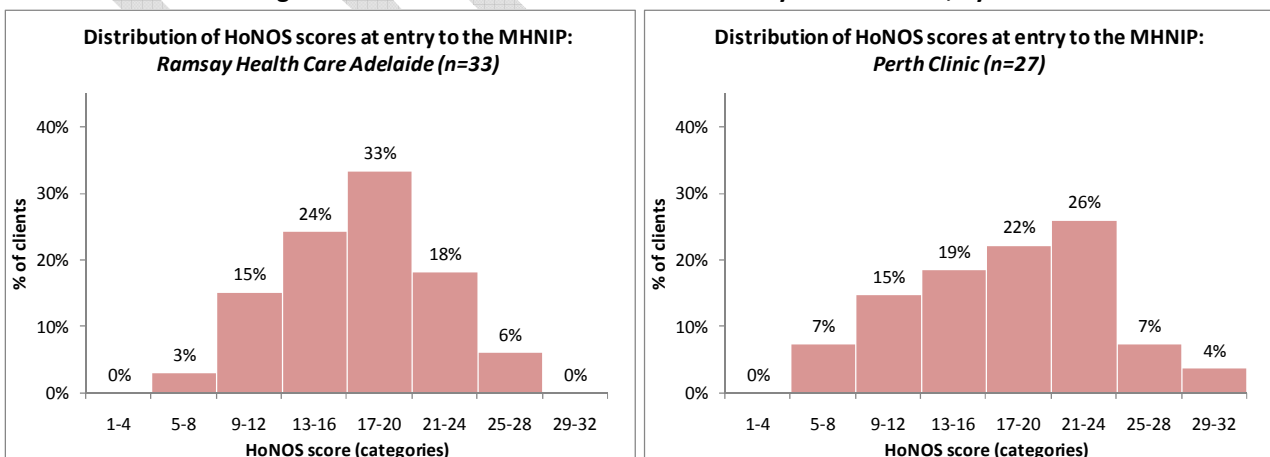
<sup>2</sup> Due to the highly skewed nature of the HoNOS data, statistical comparison of the two means was inappropriate and likely to produce misleading results.

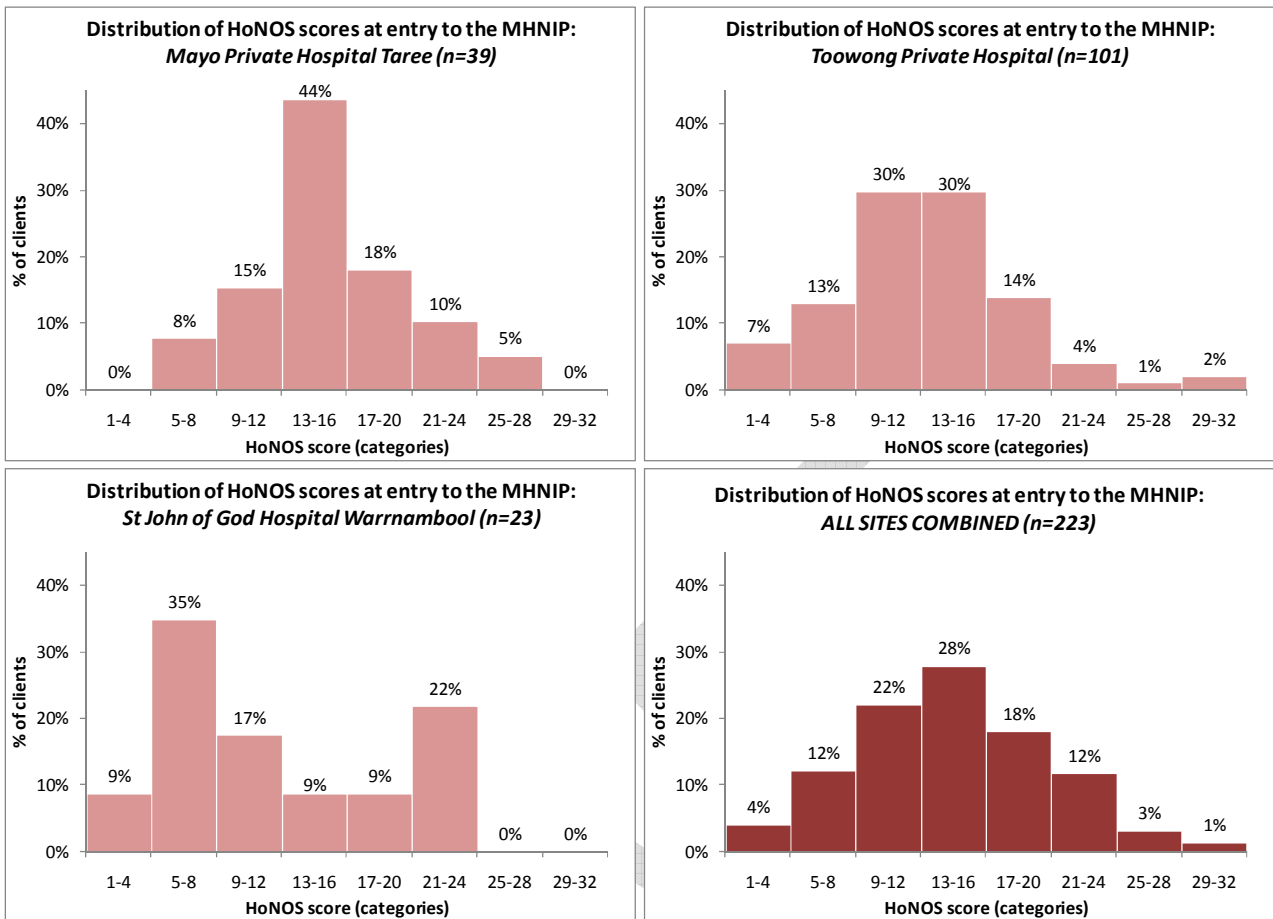
**Figure 11: Average and median HoNOS score at entry, by Site**



A more detailed picture of the HoNOS scores at entry is provided in *Figure 12* below. This demonstrates different profiles of severity across sites. It also illustrates the very wide range of HoNOS scores reported for clients at entry, ranging from 1 point (which would reflect very low severity) to 32 points (which would reflect high severity). **Assuming that the very low scores are genuine and not typographical errors, this would seem to indicate that some clients with very low overall severity of problems with their health and functioning are receiving a service under the MHNIP, despite the intention of the MHNIP to provide a service to people with severe mental disorders.**

**Figure 12: Distribution of HoNOS scores at entry to the MHNIP, by Site**





### 3.1.10 HoNOS scores at entry by Primary diagnosis

The average HoNOS score at entry was similar across the main diagnostic groups, ranging from 13.8 for clients with a *Mood Disorder* through to 15.8 for clients with a *Personality Disorder* – see Figure 13.

Figure 13: Average and median HoNOS score at entry for clients in the main diagnostic groups (primary diagnosis)

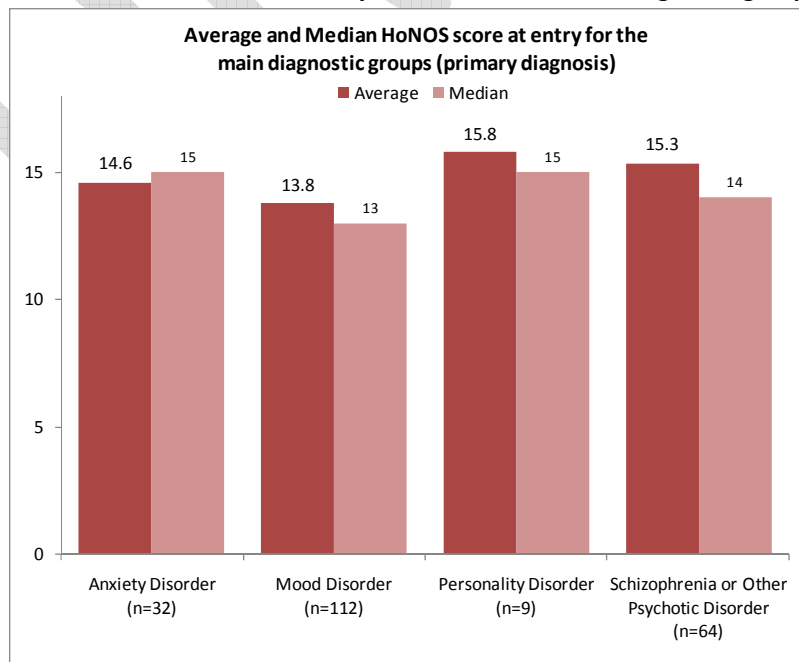
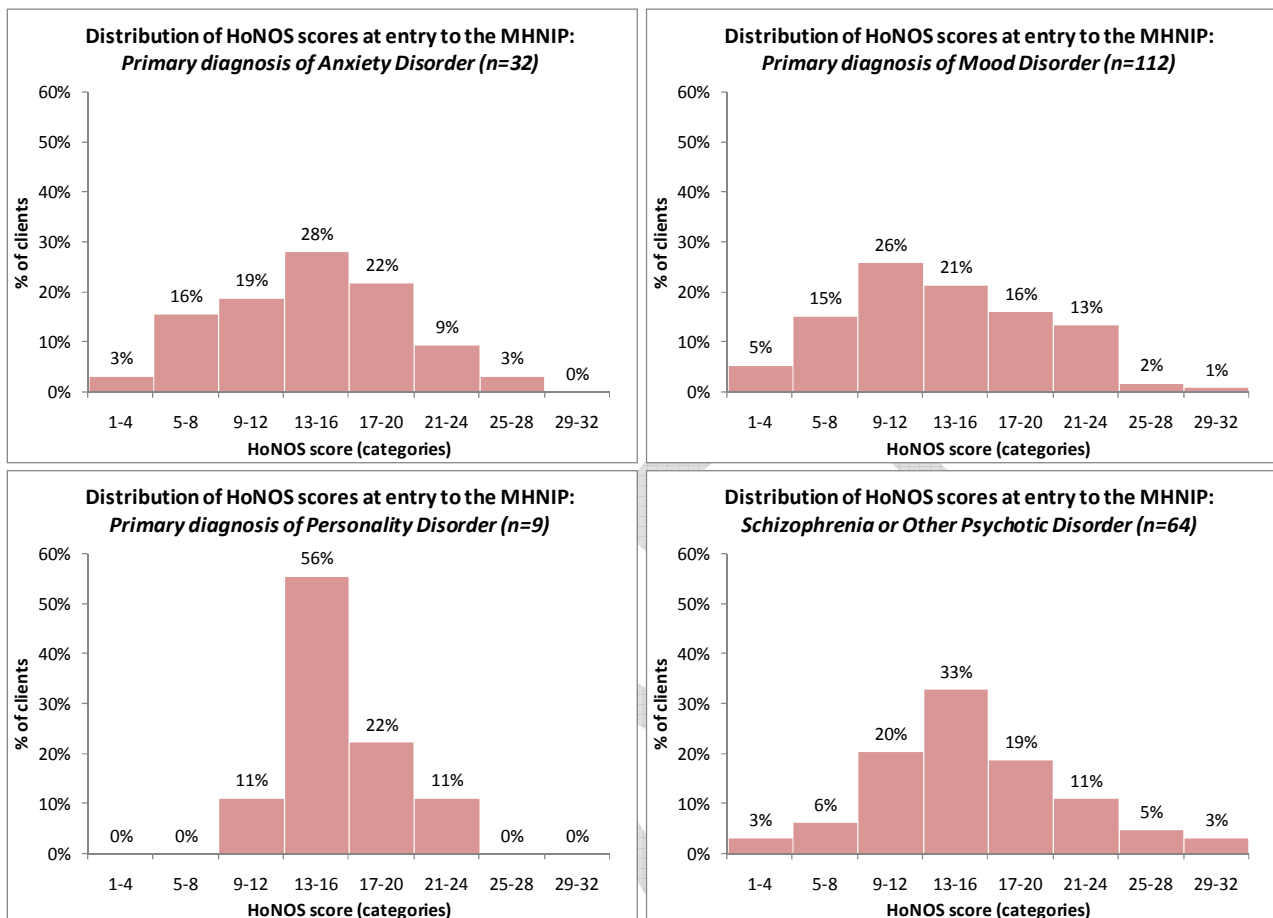


Figure 14 illustrates the different profiles of severity for the main diagnostic groups.

Figure 14: Distribution of HoNOS scores at entry to the MHNIP, by main diagnostic group (primary diagnosis)

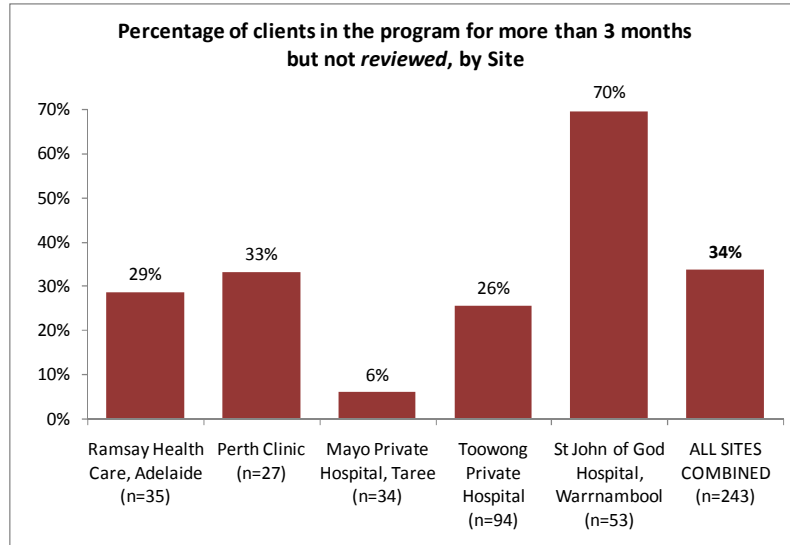


### 3.1.11 Reviews

According to the MHNIP program guidelines, Mental Health Nurses are required to review a client's symptoms and functioning every 90 days. Based on the data provided to the evaluators, **243** clients were part of the program for more than 3 months, but one third of these clients had **not** been reviewed. Review rates appeared to vary across sites, as shown in *Figure 15* below.

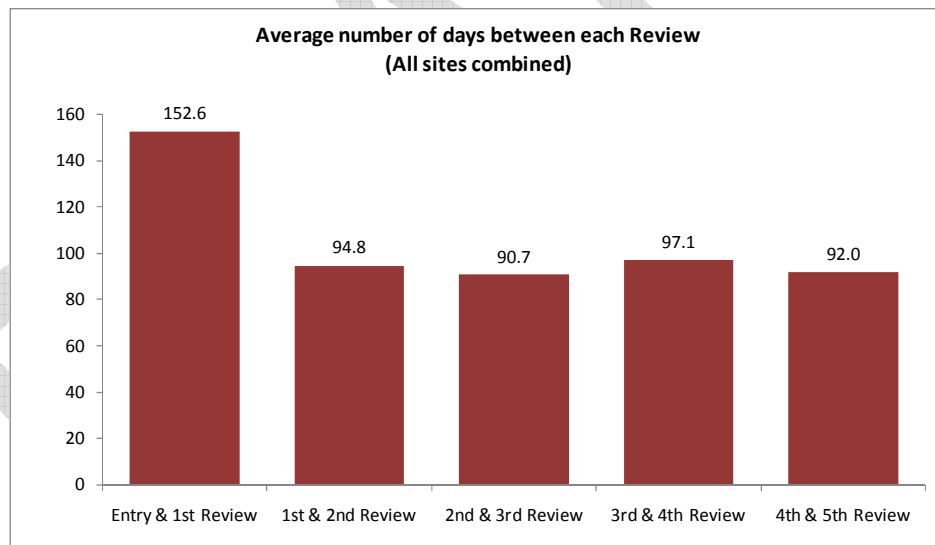
Further investigation would be required to determine whether the low rate of review at some sites is a result of characteristics of recording/reporting of data or MHNIP administration practices. Potential reasons for the inability to review clients may include difficulty contacting or maintaining engagement with a client, or the use of alternative procedures for monitoring clients.

**Figure 15: Percentage of clients who were in the program for more than 3 months but were not reviewed, by Site**



Examining the period of time between Reviews (*Figure 16*), it appears that clients are being reviewed approximately **every 90 days after their first review**, however the period of time between entry and the 1<sup>st</sup> Review appears to **generally be greater than 90 days**.

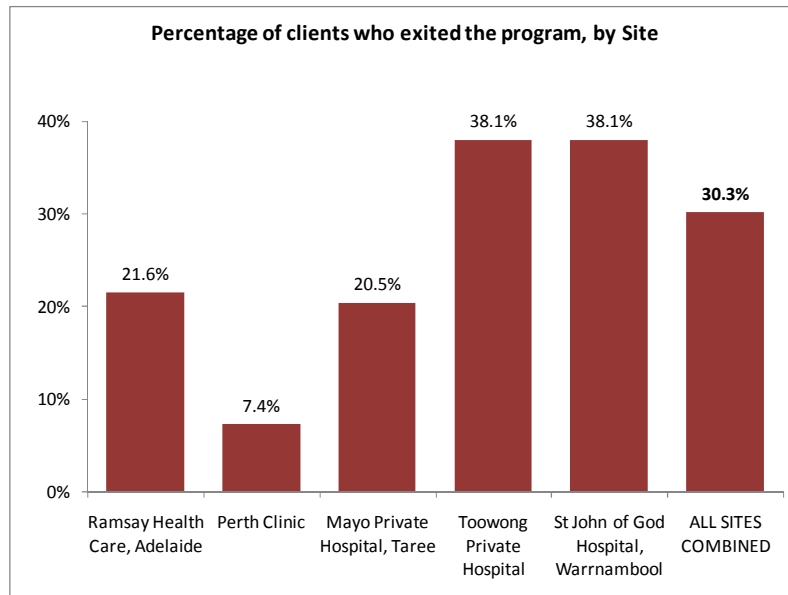
**Figure 16: Average number of days between Reviews, all sites combined**



### 3.1.12 Exit

Nearly one third of clients who entered the Program (82 clients, 30%) had exited by the date on which the data were compiled. The exit rate at each Site is shown in *Figure 17* below.

**Figure 17: Percentage of clients who exited the program, by Site**

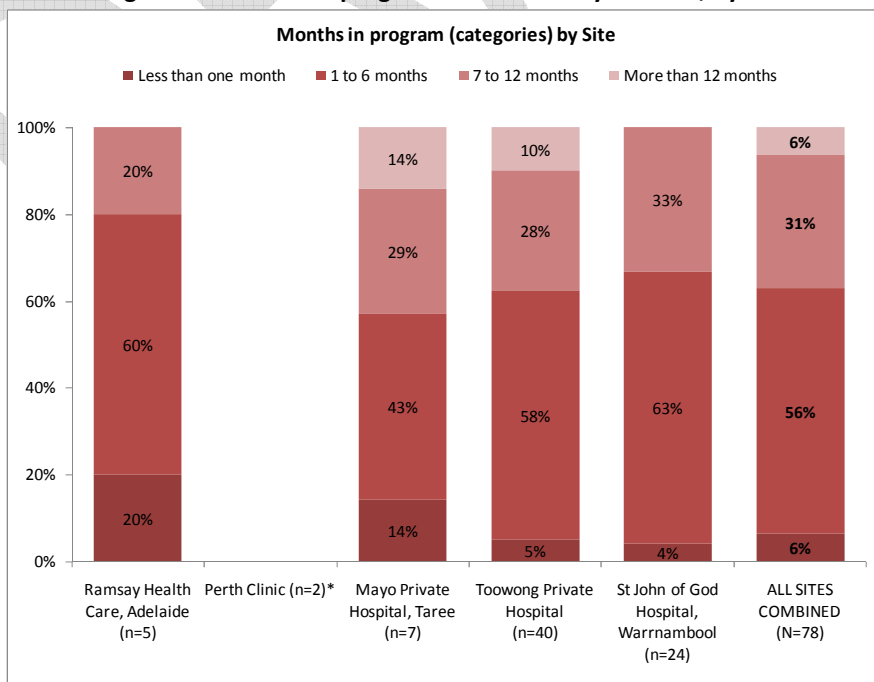


According to the Program Guidelines, each client should be assessed using the HoNOS on exit to measure changes in symptoms and functioning. See *Section 3.6.1* for analysis of the HoNOS scores.

**3.1.13 Months in program from entry to exit**

Of the 78 clients who exited the Program and for whom entry and exit dates were provided, the number of months spent in the MHNIP ranged from less than one month to 18 months. Over half of exited clients had spent between 1 month and 6 months in the Program, and a further 31% had spent between 7 and 12 months in the program (see *Figure 18*). Variation across sites was at least partly due to differences in the length of time that the Program had been operating at each hospital.

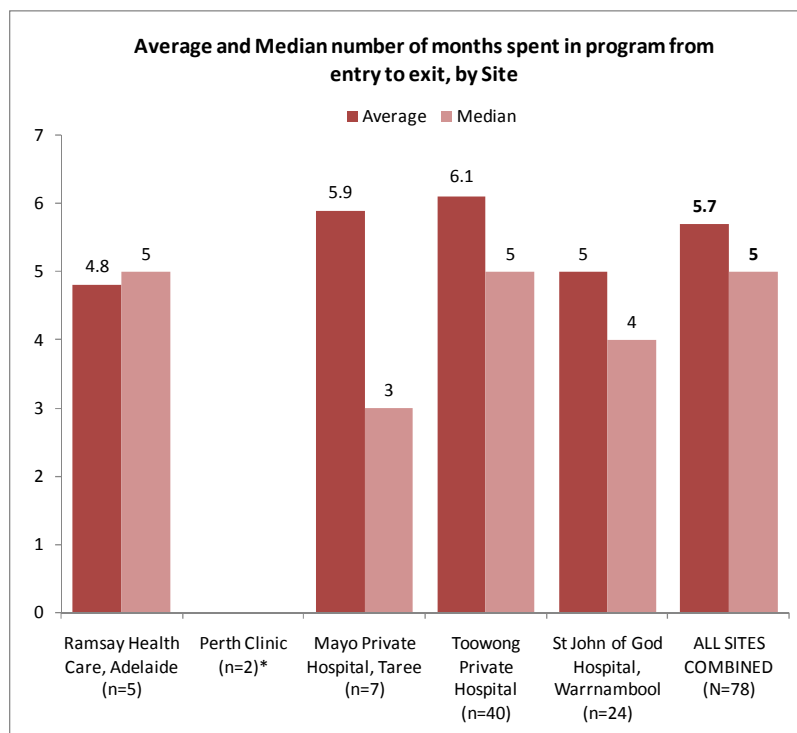
**Figure 18: Months in program between entry and exit, by Site**



\* Data not shown for sites where n<5 to protect client confidentiality.

On average clients spent **5.7 months** in the Program before exiting, and this was quite consistent across sites, ranging from an average of 4.8 months at Ramsay Health Care Adelaide to 6.1 months at Toowong Private Hospital (see *Figure 19*). Note that these averages may be influenced by the number of months that each site has been operating.

**Figure 19: Average and median number of months spent in program, by site**



\* Data not shown for sites where n<5, in order to protect client confidentiality and to avoid unreliable estimates.

## 3.2 Demographic profile of consumers

This section describes the main demographic characteristics of the **271** clients who entered the MHNI Program.

### 3.2.1 Gender

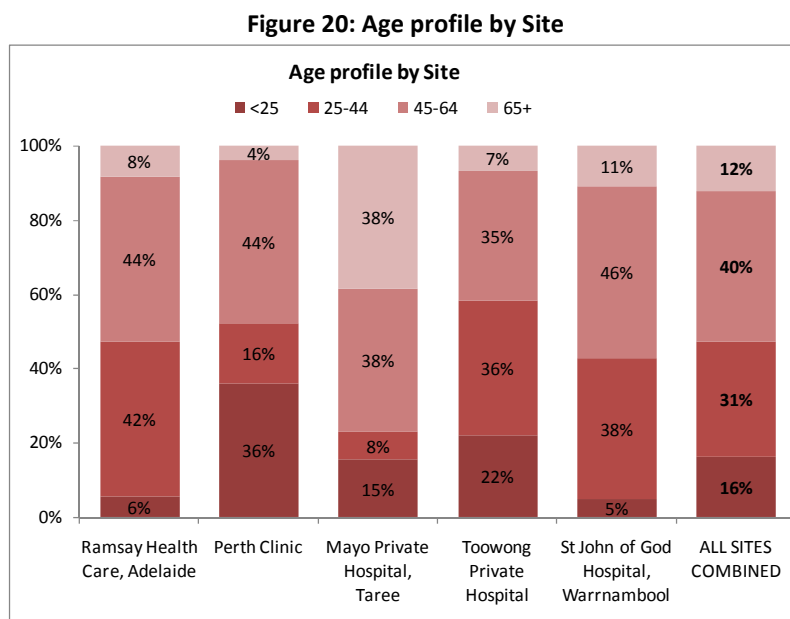
Of the 271 clients who entered the program, **61% were female**. The gender profile was similar across most sites, ranging from 61% females at Toowong Private Hospital to 67% females at Perth Clinic. The exception was Mayo Private Hospital at Taree, where only 49% of clients were female.

### 3.2.2 Age

The majority of MHNIP clients were aged between 15 and 64 years, with an average age of **46 years**.

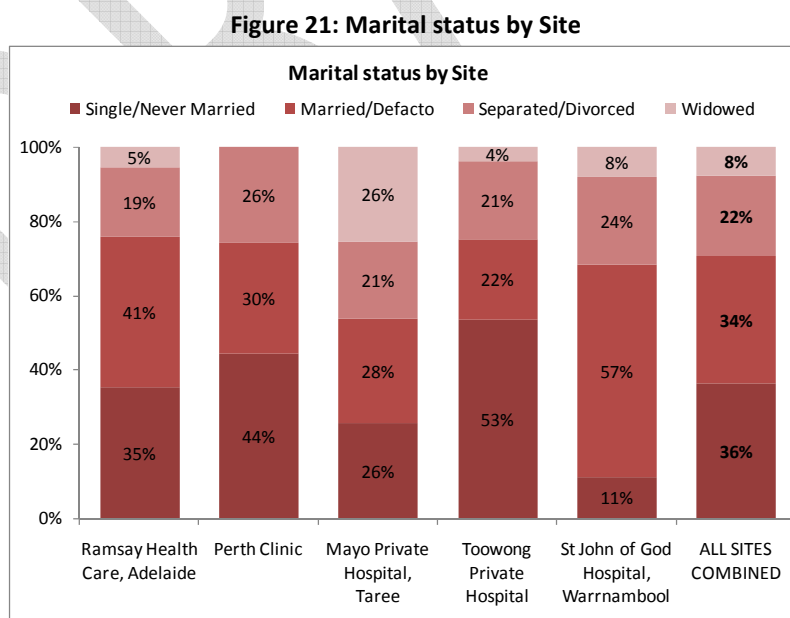
The sites with the youngest age profile were Perth Clinic and Toowong Private Hospital (average age 38 years and 41 years respectively), followed by Ramsay Health Care Adelaide (48 years) and Warrnambool

(49 years), with Mayo Private Hospital showing the oldest age profile (average age 57 years). The age distribution at each site is illustrated in *Figure 20*.



### 3.2.3 Marital Status

Approximately one third of the client group were Married/Defacto and a further third were Single/Never married. Differences across sites (see *Figure 21*) appear to be related to the age profile of clients at each site.

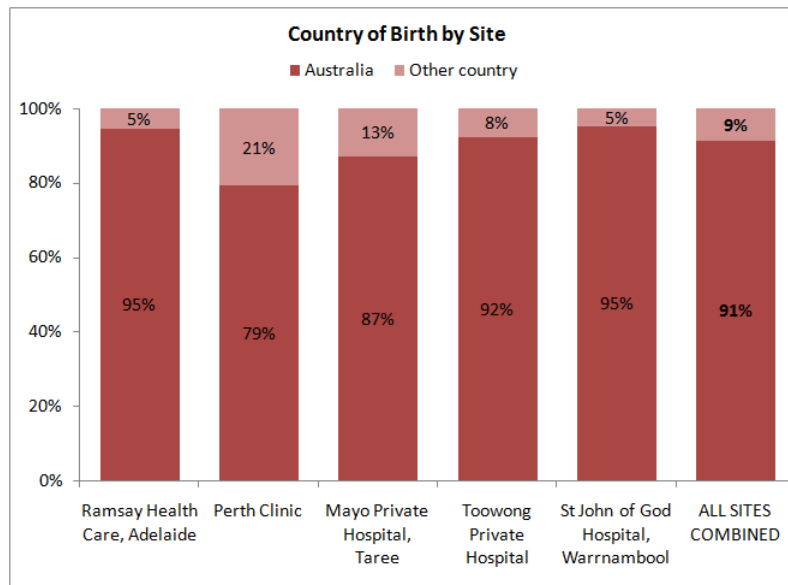


### 3.2.4 Country of Birth

Site data report that over ninety percent of clients were born in Australia, however there were some site-specific differences in the proportion of overseas-born clients (see *Figure 22*).



**Figure 22: Country of Birth by Site**



### **3.2.5 Language spoken at home**

All clients reported English as the main language spoken at home.

### **3.2.6 Indigenous Status**

Only one client was reported as being of Indigenous Status.

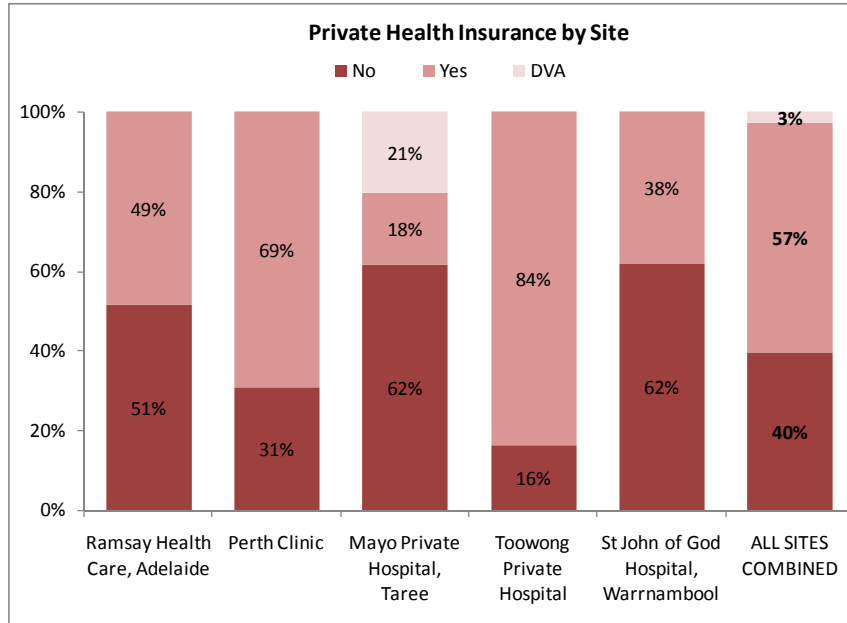
### **3.2.7 Remoteness**

Inner Regional areas were well-represented in the client group (34% of clients). A further 5% of clients were living in postcodes classified as Outer Regional, and the remaining 61% of clients were living in a major city.

### **3.2.8 Private Health Insurance**

Across all sites, 57% of clients were reported as having private health insurance. However, this proportion varied greatly across sites from 18% at Mayo Private Hospital Taree to 84% at Toowong Private Hospital (see Figure 23).

Figure 23: Private Health Insurance by Site



### 3.3 Service activity profile

This section provides information about these three features of service delivery –

- Face to face service delivery
- Type of contact with clients
- Non attendance by clients.

Note that data on non face to face service delivery was not collected from sites, however data on both face to face and non face to face consults are available from the MHNIP Medicare data – see Accompanying Report 3 to the Final Report of the evaluation.

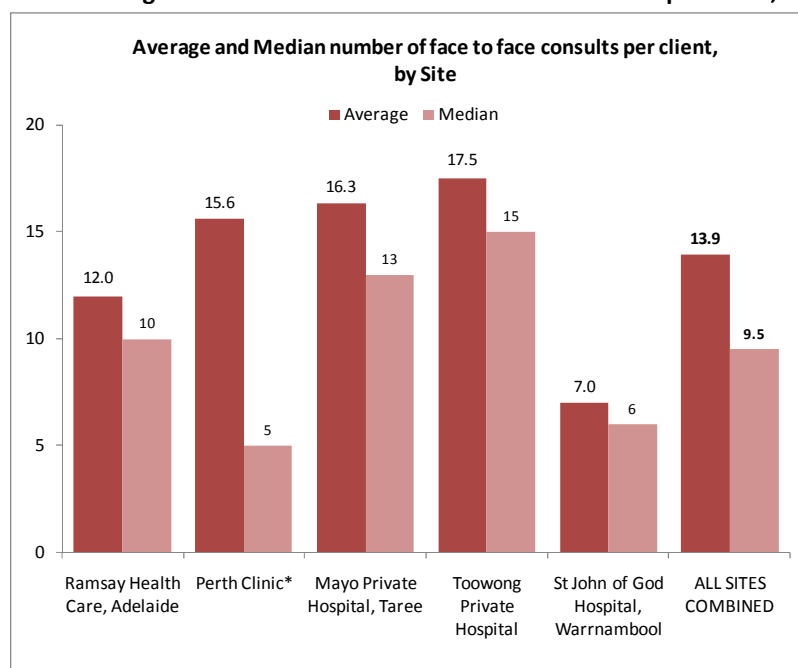
#### 3.3.1 Number of face to face consults per client

The following analysis is based on the **266** clients for whom the *number of face to face consults received to date under the MHNIP* had been reported, regardless of how long each client had been in the Program and whether or not they had exited the program.

Across all sites, clients had received an average of around **14 face-to-face consults** each – see *Figure 24* and **Table 5**. The average number of face-to-face consults per client varied **across sites** from a low of 7.0 at the Warrnambool site to a high of 17.5 at the Toowong site.

Wide variations within sites were also evident. For example, Toowong site data reported one client with zero face to face consults and another client with 81 face to face consults. Wide variations such as these are at least partly due to variations in the length of time that each client had spent in the Program.

**Figure 24: Average and median number of face to face consults per client, by Site**



**Table 5: Number of face to face consults per client by Site: Statistics**

	Adelaide	Perth	Taree	Toowong	Warrnambool	Total
No. clients	36	27	39	101	63	266
<b>Average no. of consults per client</b>	<b>12.0</b>	<b>15.6</b>	<b>16.3</b>	<b>17.5</b>	<b>7.0</b>	<b>13.9</b>
Standard deviation	9.6	19.8	12.6	15.5	4.9	13.7
Median	10.0	5.0	13.0	15.0	6.0	9.5
Minimum	0	1	3	0	1	0
Maximum	35	75	49	81	21	81
<i>Not stated</i>	1			4		5

### 3.3.2 Frequency of service (number of face to face consults per client per month)

As discussed, the total number of face-to-face services provided to a client will naturally vary depending on the length of time they are engaged with the service, potentially confounding apparent differences between sites. Therefore, the number of face-to-face consults *per month* was calculated for clients who had been in the Program for at least one month.

The length of time that a client had spent in the Program was determined from their entry date and the date of their most recent service. The number of face to face consults per month could be calculated for **256** of the 266 clients for whom face-to-face consults were reported – *clients with either a missing date of most recent service or who had been in the Program for less than one month were excluded from the analysis.*

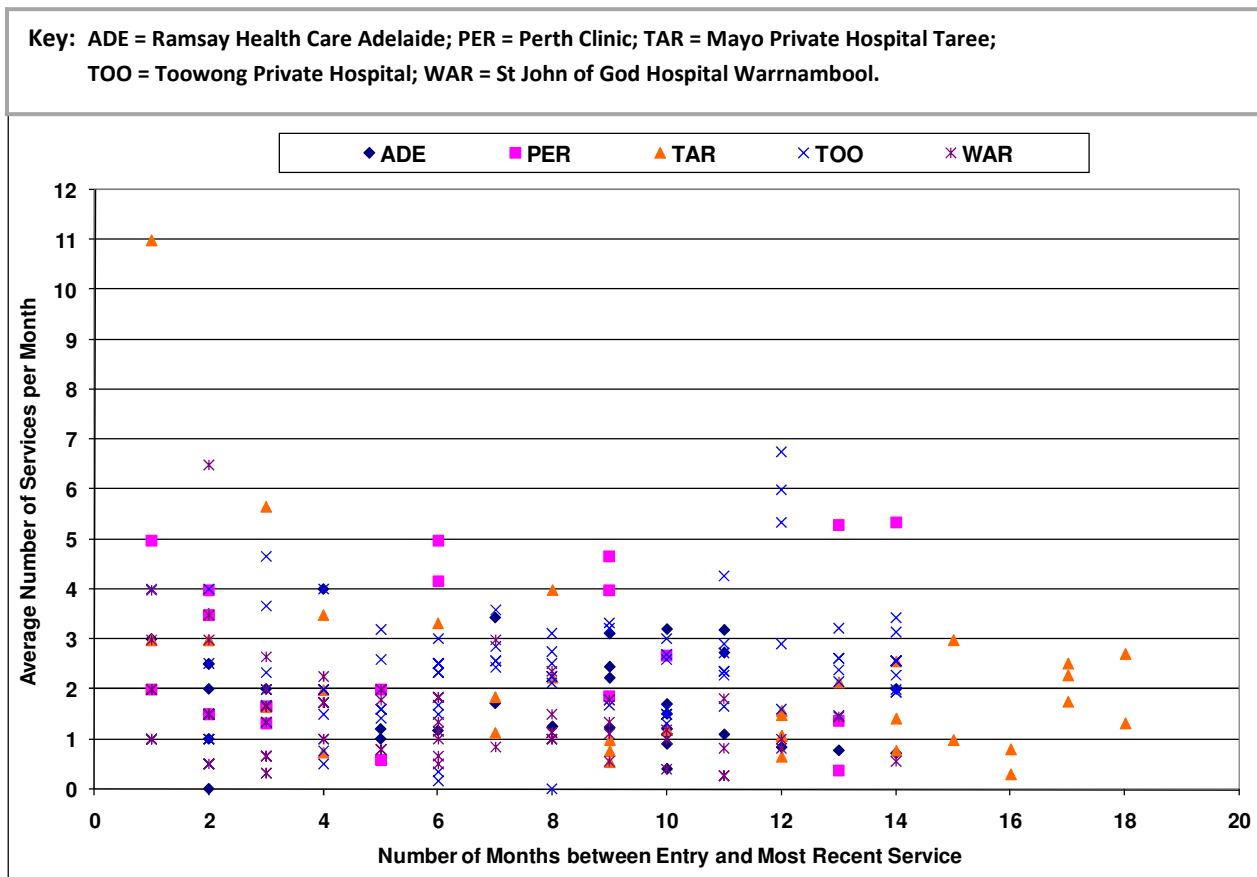
**Table 6** presents statistics on the number of months between entry and most recent service received, and the number of face to face consults per month. **To date, clients had received an average of 2 face to face consults per month, over an average time span of 7.1 months of activity.**

**Table 6: Number of months between entry and most recent service, and number of face to face consults per client per month: Statistics**

	Adelaide	Perth	Taree	Toowong	Warrnambool	Total
<b>No. of Clients</b>	<b>34</b>	<b>23</b>	<b>37</b>	<b>100</b>	<b>62</b>	<b>256</b>
<b>Months between Entry &amp; Most Recent Service</b>						
<b>Average</b>	<b>7.4</b>	<b>5.9</b>	<b>9.8</b>	<b>7.2</b>	<b>5.7</b>	<b>7.1</b>
Standard Deviation	4.0	4.4	5.5	4.2	3.6	4.4
Median	9.0	5.0	10.0	6.5	5.0	6.5
Minimum	1	1	1	1	1	1
Maximum	14	14	18	14	14	18
<b>Number of face to face consults per client per month</b>						
<b>Average</b>	<b>1.8</b>	<b>2.8</b>	<b>2.2</b>	<b>2.2</b>	<b>1.5</b>	<b>2.0</b>
Standard Deviation	1.0	1.6	1.9	1.1	1.0	1.3
Median	1.6	2.0	1.8	2.2	1.3	1.8
Minimum	0.0	0.4	0.3	0.0	0.3	0.0
Maximum	4.0	5.4	11.0	6.8	6.5	11.0

Across sites the average number of face to face services per client per month varied from 1.5 per month in Warrnambool to 2.8 per month in Perth, and there were clearly cases of much higher usage (eg. an average of 11 face-to-face services per month for a client at Taree). The latter case may have been associated with particularly high need for services upon entry to the service, as can be deduced from *Figure 25*. Also note that this particular client had one of the less frequently diagnosed conditions in the sample (*Adjustment Disorder*).

Figure 25: Scatterplot showing Average number of face to face services per month by Number of months between entry and most recent service, for individual clients at each Site



### 3.3.3 Frequency of service by Primary diagnosis

Across the main primary diagnoses, the number of face to face consults per client per month tended to remain around an average of **two per month** – see **Table 7**.

Table 7: Number of face to face consults per client per month by Primary diagnosis (main diagnostic groups):  
Statistics

Primary Diagnosis	No. of clients	Average	SD	Median	Min	Max
Anxiety Disorder	38	2.0	1.4	1.7	0.3	6.5
Mood Disorder	135	1.9	1.1	1.7	0.0	6.0
Personality Disorder	8	2.3	1.2	1.9	1.1	4.0
Schizophrenia or Other Psychotic Disorder	69	2.2	1.2	2.0	0.3	6.8

### 3.3.4 Frequency of service by Level of Care

Average number of face-to-face services per month appears to increase as level of care required increases, as would be expected, averaging **1.4** services per month for low, **1.9** for medium, and **2.6** for high care needs – see **Table 8**.

**Table 8: Average face to face services per client per month by Level of Care Required**

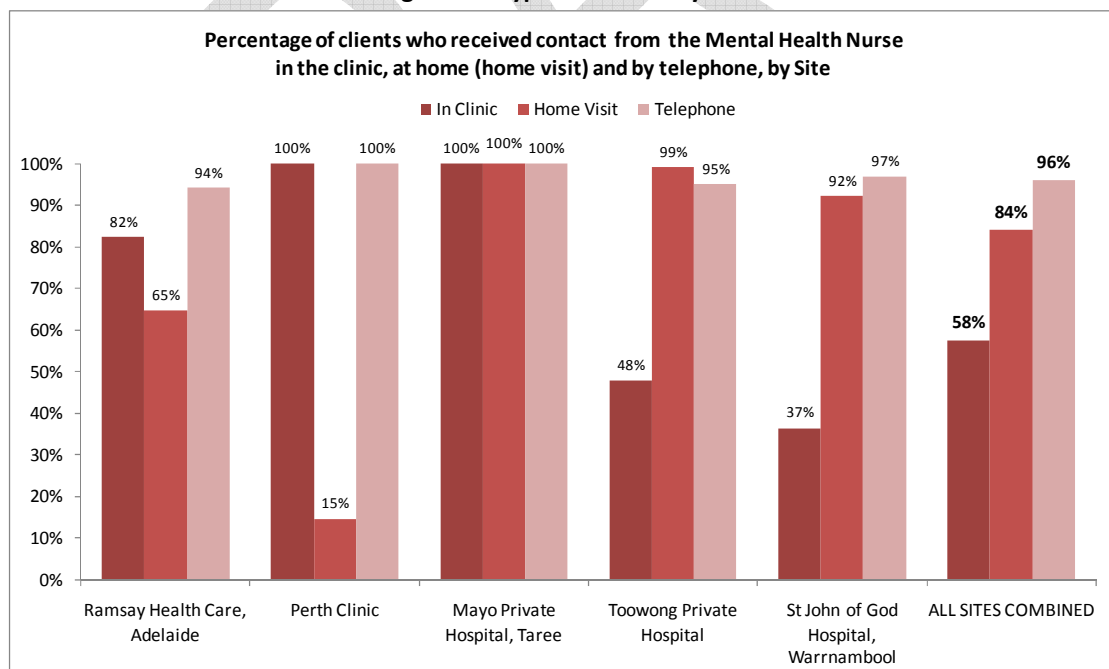
Level of Care Required	No. of Clients	Average	SD	Median	Minimum	Maximum
Low	66	1.4	0.8	1.1	0.3	4.0
Medium	81	1.9	1.1	1.8	0.2	6.5
High	109	2.6	1.5	2.4	0.0	11.0

### 3.3.5 Type of contact

Figure 26 shows the percentage of clients at each site who received one of three types of contact – *in clinic*, *home visit* or *telephone* contact. Across all sites, 96% of clients were contacted at least once by telephone, 84% received at least one home visit and 58% were seen at least once in the clinic.

Sites differed as to their use of each type of contact. For example, every client from the Taree site received in clinic services, home visits and telephone contact, whereas only 15% of clients at the Perth site received home visits.

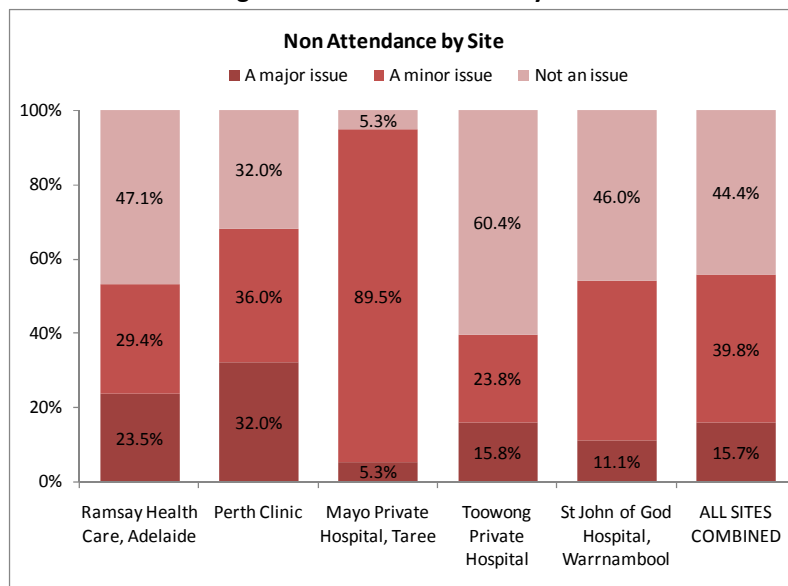
**Figure 26: Type of contact by Site**



### 3.3.6 Non attendance

Figure 27 shows the percentage of clients at each site for whom non-attendance was reported as *A major issue*, *A minor issue* or *Not an issue*.

**Figure 27: Non attendance by Site**



Non attendance was a major issue for nearly one third of clients at the Perth site and nearly one quarter of clients at the Adelaide site. This is likely to reflect site-based differences in service delivery – for example, the Perth site makes the lowest use of home visits and was the site *most* likely to have a major non-attendance issue, whereas in comparison a significant proportion of Taree’s client contact is home-based and they were the site *least* likely to report a major issue with non attendance.

### 3.4 Effect on clients’ health and functioning over time (HoNOS across Reviews)

This section presents analysis of HoNOS scores reported over time (at each Review) for the following subgroups of clients –

- Clients who have *not yet exited* the service
- Clients who *have exited* the service
- Clients who exited the service because they *became well/functional* (according to their reason for exit).

See *Section 3.5* for information on clients who exited the program, including reasons for exit, exit destination, HoNOS scores at exit and change in HoNOS between entry and exit.

### Box 3: Interpreting change in HoNOS scores

#### Interpreting change in HoNOS scores

*The information below outlines the terminology used in this Report to describe changes in HoNOS scores between reviews and between entry and exit. Refer to Box 2 for general information about the HoNOS.*

#### **How can change be measured?**

The HoNOS is designed for use as a clinical outcome measure which can be used to quantify in broad terms how an intervention has affected a client's health and functioning. The HoNOS assessment is required to be undertaken by clinical staff at the client's entry to the service, at regular periods (eg. every 90 days) during the period of engagement/intervention, and again at exit.

#### **Interpreting changes in HoNOS scores**

Recalling that **higher HoNOS scores reflect a higher level of severity** (ie. more severe difficulties in health and functioning):

⇒ An **improvement** in a client's health and functioning would be represented by a **decrease in their HoNOS score** over time.

⇒ A **deterioration** in a client's health and functioning would be represented by an **increase in their HoNOS score** over time.

#### **Limitations applicable to this analysis**

Improvements which are specific to one item (or a small number of items) within the 12 items comprising the HoNOS may be difficult to detect in the Total Score. Similarly, an improvement in some items may be obscured by deterioration in other items.

#### **3.4.1 Clients who have not yet exited**

The following analysis looks at changes in HoNOS scores across successive reviews for clients who had not yet exited the Program. The change in average HoNOS scores over time is illustrated in *Figure 28* below, with statistics presented in **Table 9**.

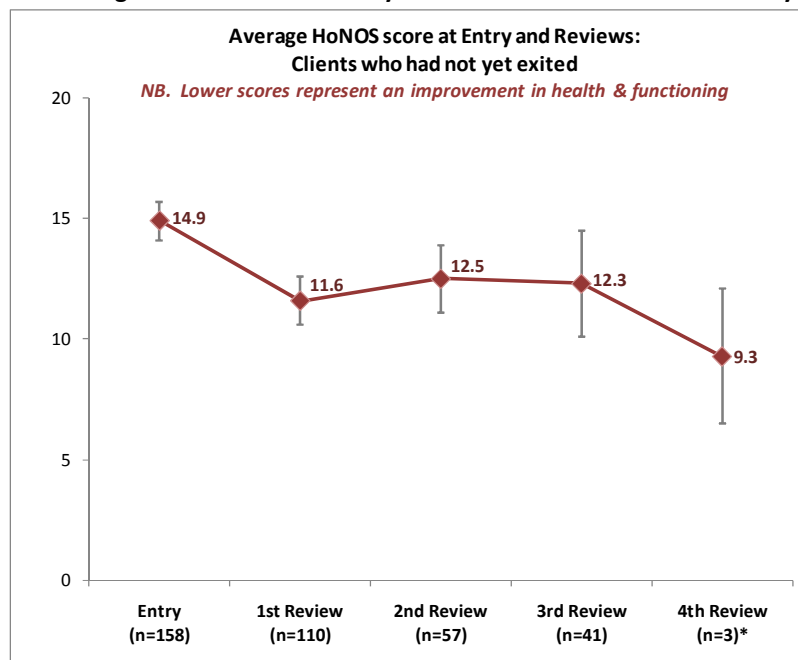
*Note that lower scores indicate less severe symptoms, therefore a decrease in HoNOS scores indicates improvement (for further information on interpreting HoNOS scores, see*



Box 3 above).

DRAFT

**Figure 28: Average HoNOS scores at Entry and Reviews: Clients who had not yet exited**



\* Caution: Small sample size (n<5).

Note: Error bars show 95% confidence intervals. The differences between Entry and 1<sup>st</sup> Review, and Entry and 4<sup>th</sup> Review are statistically significant (p<.01).

**Table 9: HoNOS scores at Entry and Reviews for clients who had not yet exited: Statistics**

	No. of clients	Average	SD	Median	Min	Max
Clients who had not yet exited	189					
HoNOS at Entry	158	14.9	5.4	15	1	32
HoNOS at 1 <sup>st</sup> Review	110	11.6	5.6	11	2	27
HoNOS at 2 <sup>nd</sup> Review	57	12.5	5.4	12	0	26
HoNOS at 3 <sup>rd</sup> Review	41	12.3	6.9	11	3	31
HoNOS at 4 <sup>th</sup> Review	3	9.3	5.7	9	1	22

The overall change in clients' HoNOS scores over time was **statistically significant** (Repeated Measures ANOVA, p<.01). Post hoc testing (Tukey HSD) indicated that the significant differences occurred between **Entry and 1<sup>st</sup> Review** (p<.01) and **Entry and 4<sup>th</sup> Review** (p<.01), however note that only three clients had a 4<sup>th</sup> Review.

The amount of *improvement* or *deterioration* recorded for individual clients across successive reviews, as measured by changes in their HoNOS scores, is described below.

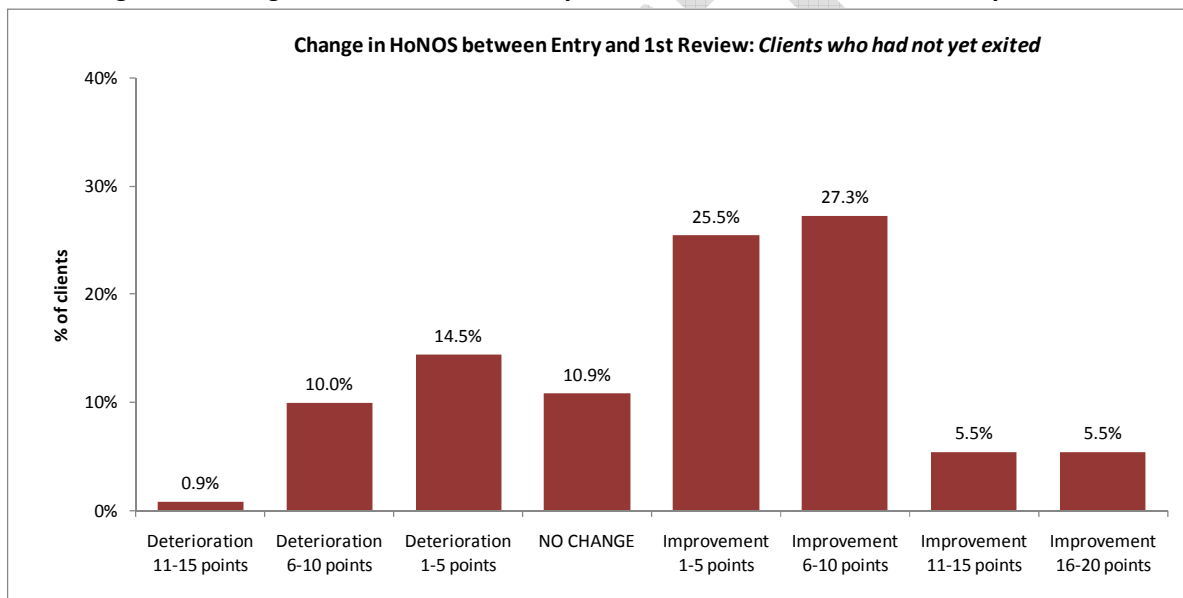
### 3.4.2 Change between Entry and 1<sup>st</sup> Review

Of the 189 clients who had not yet exited the Program, 158 had a HoNOS on Entry and of these, 110 also had a 1<sup>st</sup> Review HoNOS. From *Figure 29* below, it can be seen that for this group of 110 clients –

- ⇒ **64%** recorded an **improvement** between entry and their 1<sup>st</sup> Review; most of the improvements were in the order of 1 to 10 HoNOS points.
- ⇒ **11%** of clients recorded **no change**, and
- ⇒ **25%** of clients recorded a **deterioration** between entry and their 1<sup>st</sup> review.

The **average change** for these clients was an **improvement of 3.3 HoNOS points** (median 3.0 points).

**Figure 29: Change in HoNOS between Entry and 1st Review: Clients who had not yet exited**



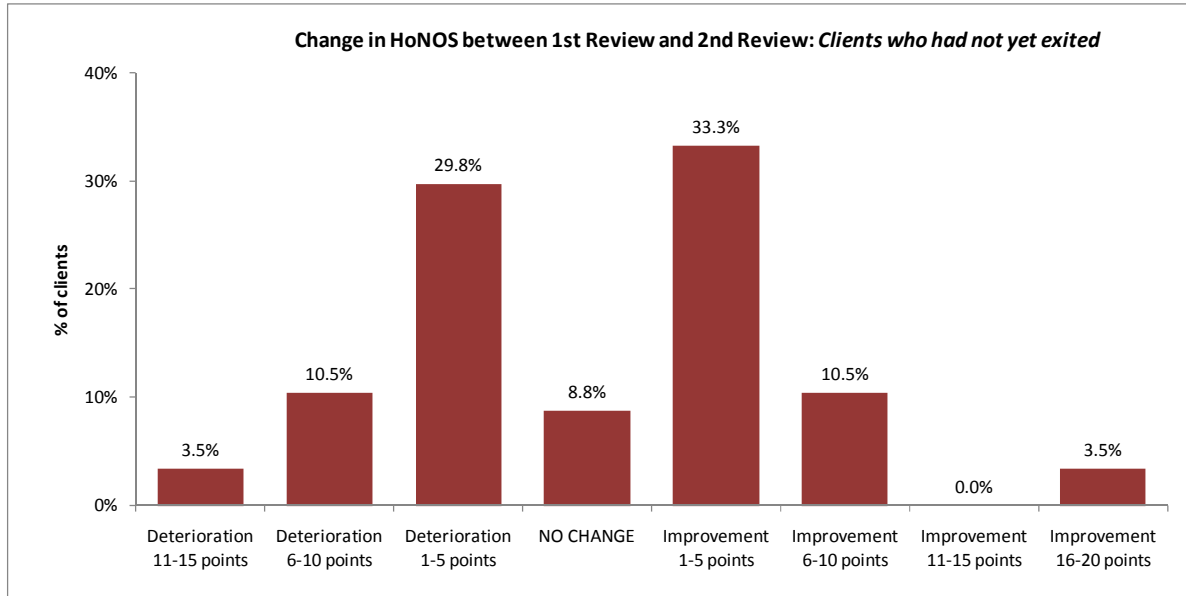
*Note that the length of time between a client's assessments may influence the degree of change seen in the HoNOS scores.* For example, clients who showed an improvement had an average of 197 days between their Entry and 1<sup>st</sup> Review, compared with clients who recorded a deterioration (123 days) and clients who recorded no change in their HoNOS score (also 123 days).

### 3.4.3 Change between 1<sup>st</sup> Review and 2<sup>nd</sup> Review

Of the **57** clients for whom a HoNOS was recorded at 1<sup>st</sup> and 2<sup>nd</sup> Review, **48%** recorded an improvement (mostly in the order of 1 to 5 points), **9%** recorded no change, and **44%** recorded a deterioration.

- ⇒ On average these clients showed an **improvement of 0.6 HoNOS points** (median 0.0 points) between their 1<sup>st</sup> and 2<sup>nd</sup> Reviews. *Figure 30* has details.

**Figure 30: Change in HoNOS between 1st Review and 2nd Review: Clients who had not yet exited**

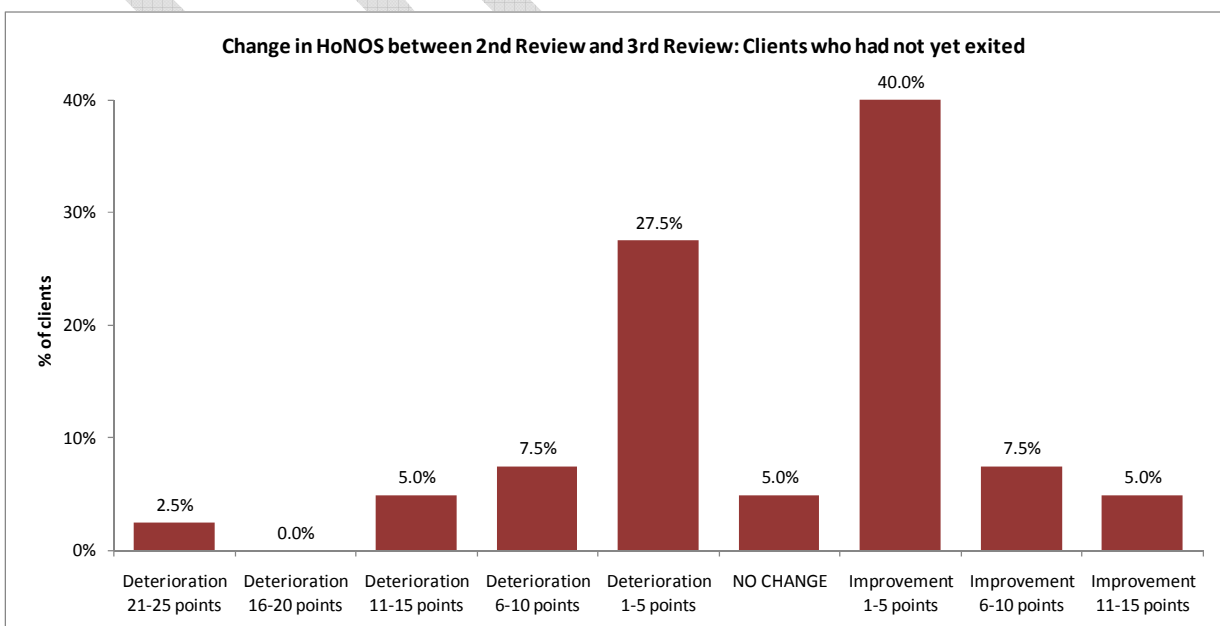


**3.4.4 Change between 2<sup>nd</sup> Review and 3<sup>rd</sup> Review**

Of the **40** clients for whom a HoNOS was recorded at a 2<sup>nd</sup> and 3<sup>rd</sup> Review –

- ⇒ **52.5%** recorded an **improvement** (mostly in the order of 1 to 5 points)
- ⇒ **5%** recorded **no change** and
- ⇒ **42.5%** recorded a **deterioration** – see *Figure 31*.
- ⇒ On average these clients showed a **deterioration of 0.2 HoNOS points** (median 1.0 points *improvement*) between their 2<sup>nd</sup> and 3<sup>rd</sup> Reviews.
- ⇒ Forty percent of clients recorded an improvement of 1 to 5 points.

**Figure 31: Change in HoNOS between 2nd Review and 3rd Review: Clients who had not yet exited**



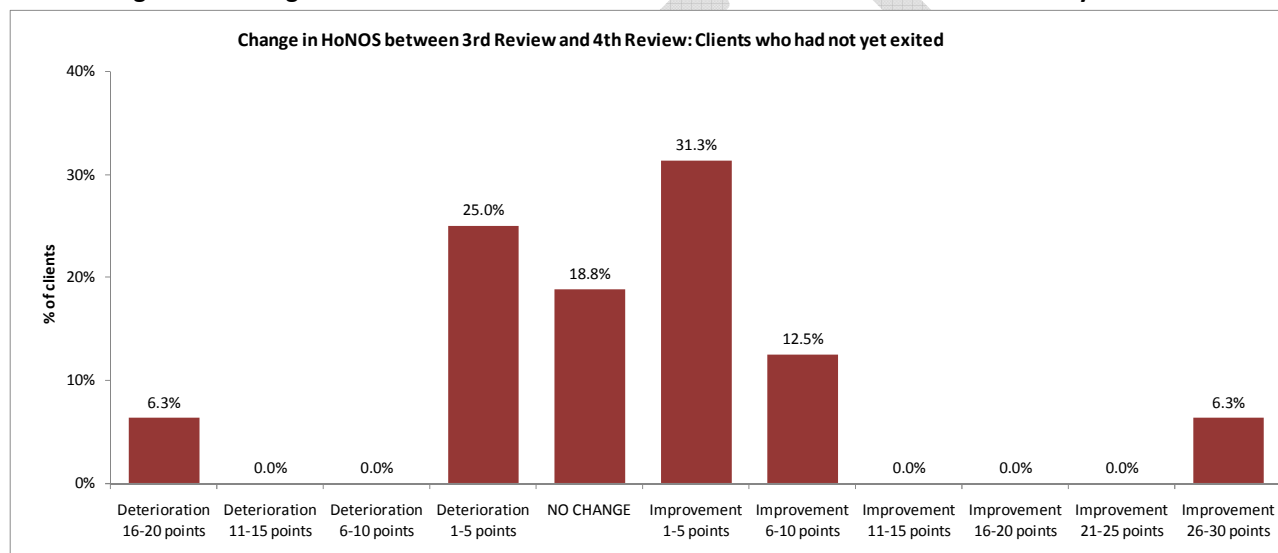
### 3.4.5 Change between 3<sup>rd</sup> Review and 4<sup>th</sup> Review

Of the **16** clients for whom a HoNOS was recorded at a 3<sup>rd</sup> and 4<sup>th</sup> Review –

- ⇒ **half** recorded an improvement
- ⇒ **19%** recorded no change and
- ⇒ **31%** recorded a deterioration.
- ⇒ Just under a third of clients (31.3%) recorded an improvement of 1 to 5 points in their HoNOS score.
- ⇒ On average these clients showed an **improvement of 1.8 points** (median 0.5 points) between their 3<sup>rd</sup> and 4<sup>th</sup> Reviews.

*These results should be viewed with caution due to the small sample size.*

**Figure 32: Change in HoNOS between 3rd Review and 4th Review: Clients who had not yet exited**

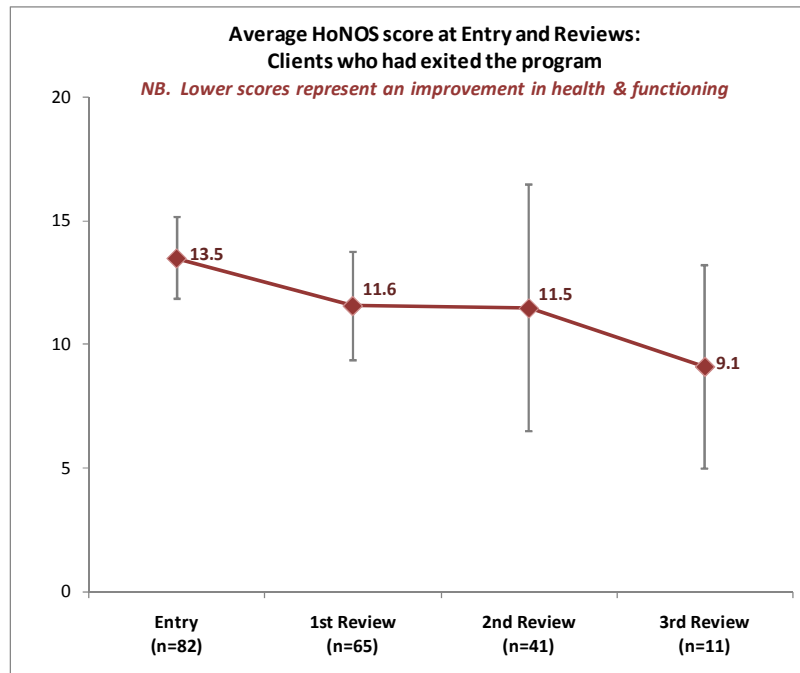


### 3.4.6 Clients who had exited the Program

The following analysis looks at changes in HoNOS scores across successive reviews for clients who had exited the Program.

The change in average HoNOS scores over time is illustrated in *Figure 33*, with statistics presented in **Table 10**.

**Figure 33: Change in average HoNOS scores over time**



Note: Error bars show 95% confidence intervals. No differences are statistically significant.

**Table 10: HoNOS scores at Entry and Reviews for clients who had exited the program: Statistics**

	No. of clients	Average	SD	Median	Min	Max
<b>Clients who Exited</b>	<b>82</b>					
HoNOS at <b>Entry</b>	65	13.5	6.7	13	3	32
HoNOS at <b>1<sup>st</sup> Review</b>	41	11.6	7.0	10	2	26
HoNOS at <b>2<sup>nd</sup> Review</b>	15	11.5	9.6	8	3	39
HoNOS at <b>3<sup>rd</sup> Review</b>	11	9.1	6.8	8	2	26

Note that while there were three clients with a 4<sup>th</sup> Review, one of those clients had HoNOS scores which were extremely high, therefore the 4<sup>th</sup> Review was excluded from the analysis in order to avoid biasing the results. There was also one client with a 5<sup>th</sup> Review who was not included in the analysis, because at least 3 observations per time point were required to undertake the statistical analysis.

While the average HoNOS score appeared to decrease over time, due to high variability in the scores, neither the overall effect nor comparisons between Entry and Reviews were statistically significant.

This high variability is due to small sample sizes and also partly due to subgroups within the sample of Exited clients - some clients exited the Program after becoming well/functional, whereas others exited after becoming too unwell to continue in the Program – see *Section 3.6*. This produced subgroups with a) improving and b) declining HoNOS scores within the sample of Exited clients.

The actual changes in HoNOS scores between Reviews for *all* clients who exited the program are described below. See the following subsection for an analysis of change over time for the subgroup of clients who exited due to *becoming well/functional*.

The amount of *improvement* or *deterioration* recorded across successive reviews for clients who exited the program, as measured by changes in their HoNOS scores, is described below.

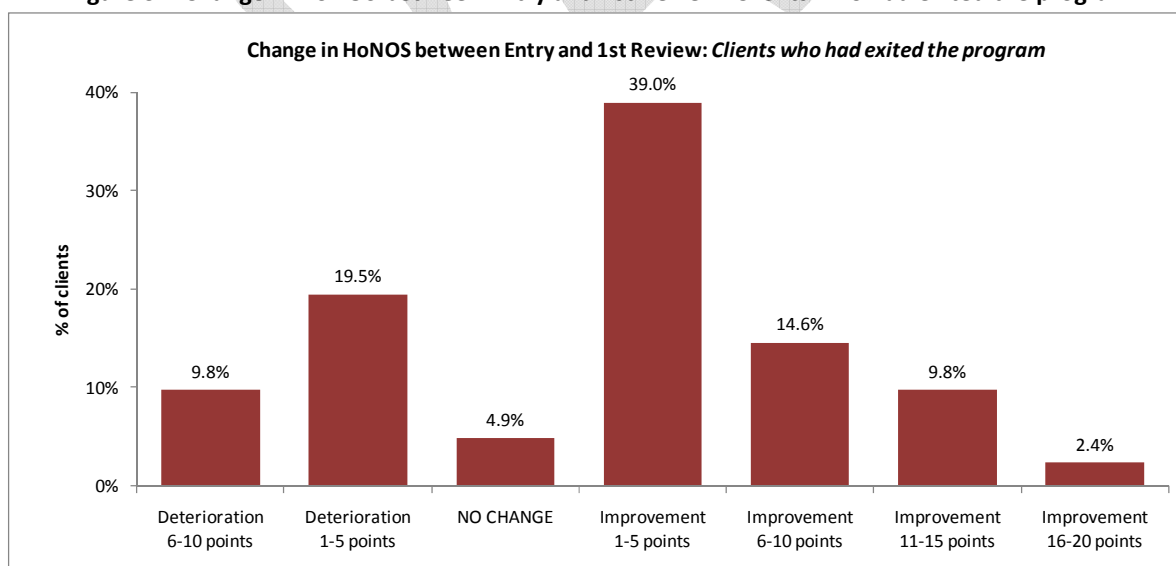
### 3.4.7 Change between Entry and 1<sup>st</sup> Review

Of the **82** clients who exited the MHNIP, **65** clients had recorded a HoNOS on Entry and of these, **41** reported a 1<sup>st</sup> Review HoNOS.

Of these **41** clients –

- ⇒ **66%** recorded an **improvement**
- ⇒ **5%** recorded no change and
- ⇒ **29%** recorded a deterioration. Details appear in *Figure 34*.
  
- ⇒ **Thirty-nine percent of clients who exited the program recorded an improvement of 1 to 5 points in their HoNOS score.**
  
- ⇒ **The average change for all Exited clients was an improvement of 2.5 HoNOS points (median 2.0 points).**

**Figure 34: Change in HoNOS between Entry and 1<sup>st</sup> Review: Clients who had exited the program**



Analysis of the period of time between Entry and 1<sup>st</sup> Review for the 41 applicable clients showed that the period of time between these dates did not differ significantly between clients with improved, worse or stable HoNOS scores. **Therefore the timing of the 1<sup>st</sup> Review did not appear to be related to whether or not improvement occurred for these clients.**

### *Change between 1<sup>st</sup> Review and Subsequent Reviews*

There were only **15** Exited clients who recorded more than one Review HoNOS.

- ⇒ For the 15 Exited clients with a 1<sup>st</sup> and 2<sup>nd</sup> Review HoNOS, their change in HoNOS varied from an improvement of 10 points to a deterioration of 17 points. Average change was an improvement of 0.8 points.
- ⇒ For the 10 Exited clients with a 2<sup>nd</sup> and 3<sup>rd</sup> Review HoNOS, change in HoNOS varied from an improvement of 16 points to a deterioration of 10 points. Average change was an improvement of 3.5 points.
- ⇒ The three Exited clients with a 3<sup>rd</sup> and 4<sup>th</sup> Review HoNOS experienced a deterioration of 2, 5 and 10 HoNOS points respectively. The client who also recorded a 5<sup>th</sup> Review experienced a deterioration of 1 point between their 4<sup>th</sup> and 5<sup>th</sup> Reviews.

#### **3.4.8 Exited clients who had become well/functional**

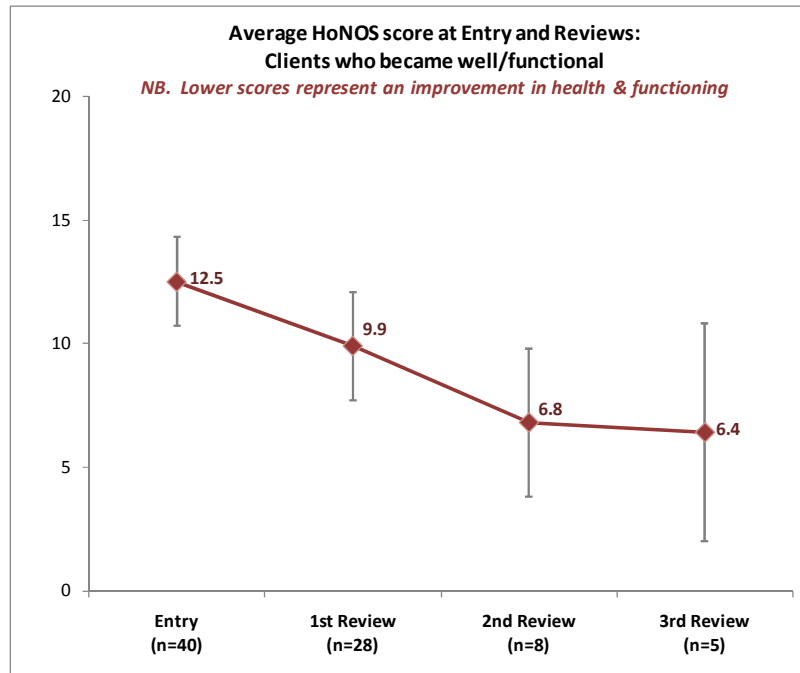
There were **41** clients who exited the program as a consequence of becoming well/functional, according to the “reason for exit” recorded (*see the section on Outcomes for details regarding reasons for exit*).

The change in average HoNOS scores over time for these clients is illustrated in *Figure 35*, with statistics presented in



Table 11.

Figure 35: Average HoNOS scores at Entry and Reviews: Clients who became well/functional



DRAFT

**Table 11: HoNOS scores at Entry and Reviews for clients who became well/functional: Statistics**

	No. clients	Average HoNOS	SD	Median	Min	Max
Clients who Exited due to becoming well/functional	41					
HoNOS at <b>Entry</b>	40	<b>12.5</b>	5.6	12	3	24
HoNOS at <b>1<sup>st</sup> Review</b>	28	<b>9.9</b>	6.1	9	2	24
HoNOS at <b>2<sup>nd</sup> Review</b>	8	<b>6.8</b>	4.2	6	3	16
HoNOS at <b>3<sup>rd</sup> Review</b>	5	<b>6.4</b>	4.8	4	2	13

One client also had a 4<sup>th</sup> Review, but this observation was excluded from the statistical analysis.

While the average HoNOS score appeared to decrease quite markedly over time, due to the small sample size neither the overall effect nor comparisons between Entry and Reviews reached statistical significance. As the MHNIP continues and more clients exit the Program, the sample size of “exited clients who became well/functional” will become large enough to detect significant differences in HoNOS scores over time.

#### **Change between Entry and 1<sup>st</sup> Review**

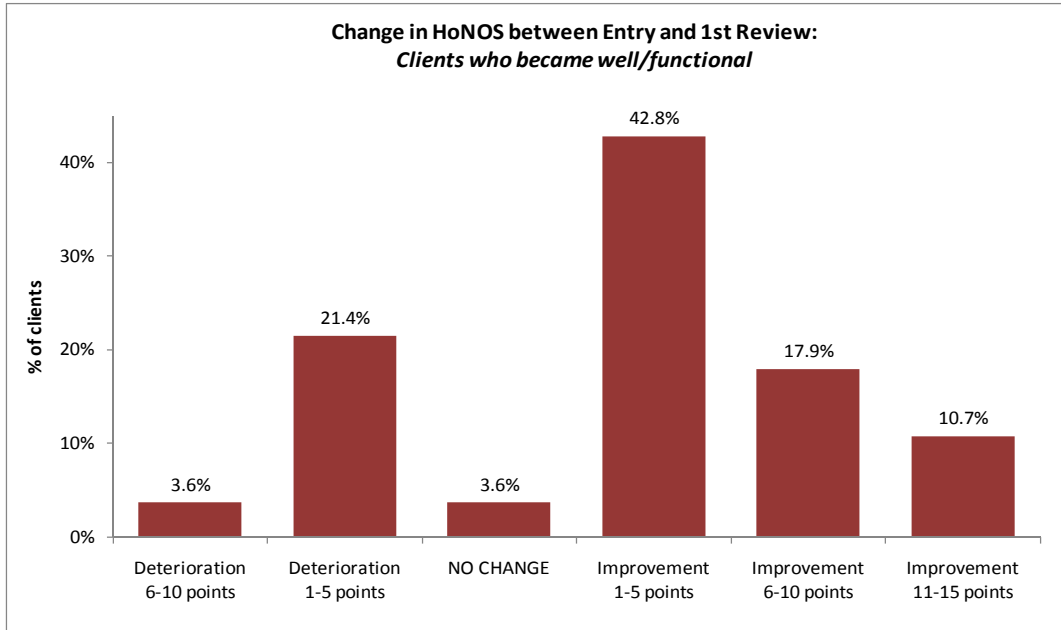
Of the 41 clients who exited the MHNIP as a consequence of becoming well/functional **28** recorded a HoNOS score at both Entry and 1<sup>st</sup> Review. Of these 28 clients (*Figure 36*) –

- ⇒ **71%** recorded an improvement
- ⇒ **4%** recorded no change and
- ⇒ **25%** recorded a deterioration between Entry and 1<sup>st</sup> Review.
- ⇒ **Forty-three percent** of these clients recorded an **improvement** of 1 to 5 points in their HoNOS score.
- ⇒ **The average change for exited clients who became well/functional was an improvement of 2.8 HoNOS points** (median 2.0).

An analysis of the period of time between Entry and 1<sup>st</sup> Review for the 28 applicable clients showed that the period of time between these dates did not differ significantly between clients with improved, worse or stable HoNOS scores. **Therefore the timing of the 1<sup>st</sup> Review did not appear to be related to whether or not improvement occurred.**

Due to the small number of cases, no analysis was undertaken of change across the 2<sup>nd</sup> and 3<sup>rd</sup> Reviews for the clients who became well/functional.

**Figure 36: Change in HoNOS between Entry and 1st Review: Clients who became well/functional**

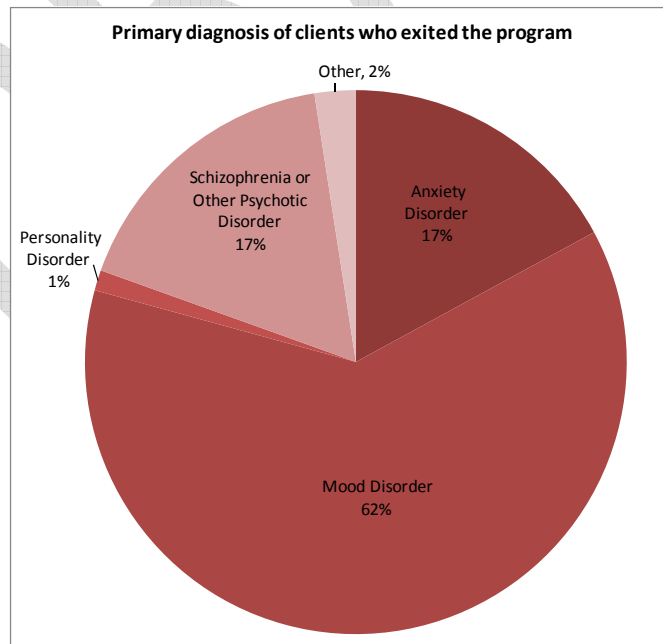


### 3.5 Profile of clients who exited the Program

#### 3.5.1 Primary diagnosis

The majority of clients (62%) who exited the program had been diagnosed with a *Mood Disorder* – see *Figure 37*.

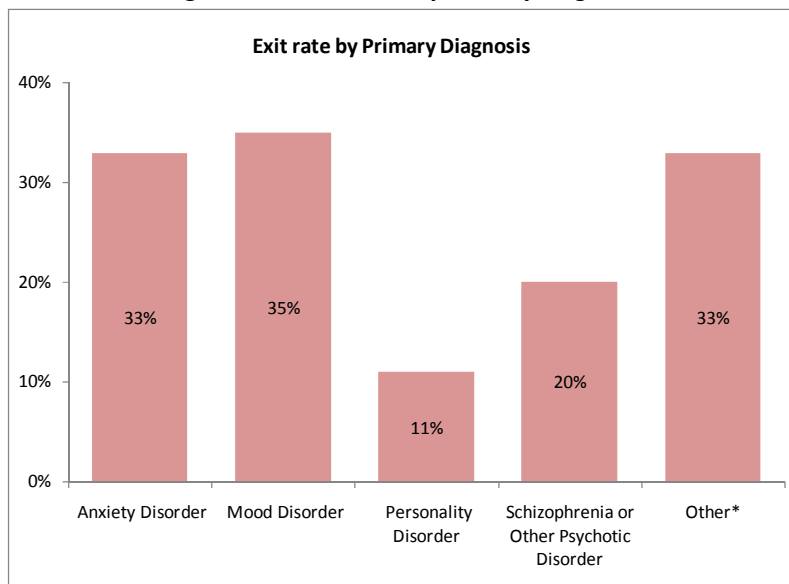
**Figure 37: Primary diagnosis of clients who exited the program**



\* “Other” comprises: Adjustment Disorders, Dementia, Eating Disorders and Substance-Related Disorders.

Around a third of the clients recorded at entry as having a *Mood Disorder* or an *Anxiety Disorder* had exited the program, compared with 20% of clients with *Schizophrenia or Other Psychotic Disorder* and 11% of clients with *Personality Disorder* – see Figure 38. This is consistent with the relative chronicity of these diagnostic groups.

**Figure 38: Rate of exit by Primary diagnosis**

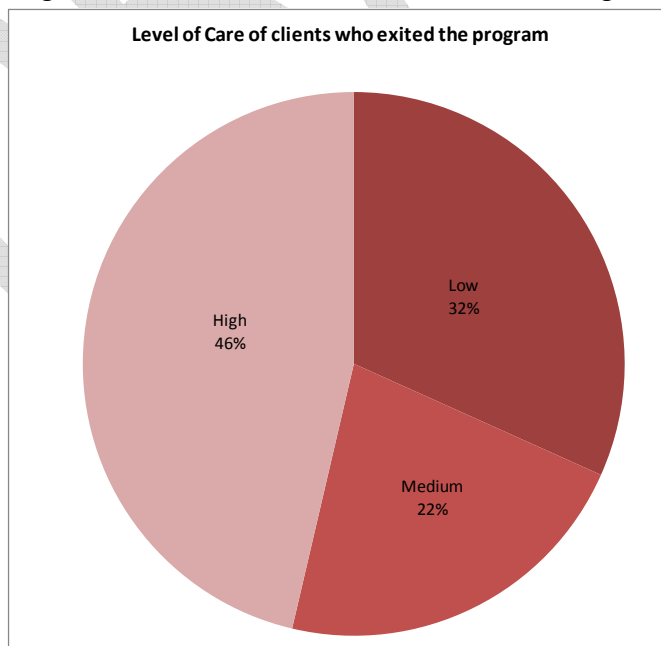


\* "Other" comprises: Adjustment Disorders, Dementia, Eating Disorders and Substance-Related Disorders.

### 3.5.2 Level of care

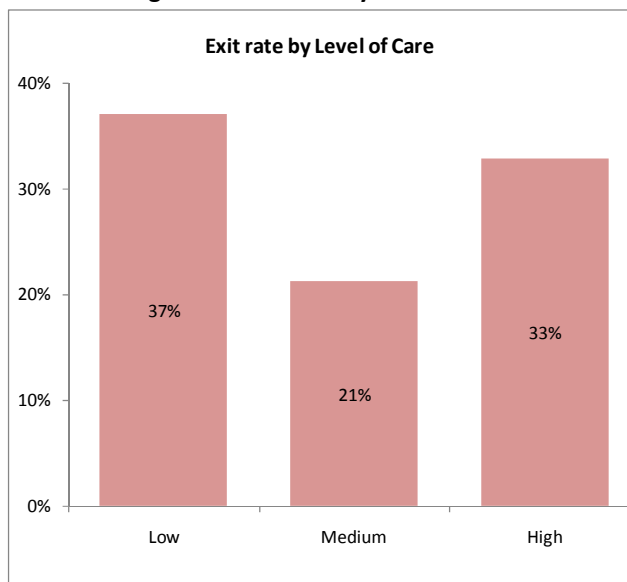
Nearly half of the clients who exited the Program had been anticipated to require a High level of care.

**Figure 39: Level of care of clients who exited the Program**



Clients requiring a “Low” level of care (as determined at entry to the Program) had the highest rate of exit (37%) – see *Figure 40*. This was considerably higher than the exit rate of clients with medium level care needs (21% exited) and slightly higher than that of high level care clients (32% exited).

**Figure 40: Exit rate by Level of Care**



### 3.5.3 Relationship between HoNOS score at entry and exit from the Program

HoNOS scores at entry were recorded for 65 (79.3%) of the 82 clients who exited the Program. The average HoNOS score at entry for these clients was **13.5**, and average HoNOS score at entry for clients who had *not yet exited* the program was **14.9**.

A statistical analysis of the entry HoNOS scores for Exited and Non-Exited clients was undertaken to determine whether these groups differed significantly on their scores at entry. **This test identified a statistically significant difference (Mann-Whitney U test<sup>3</sup>,  $p < .05$ ), suggesting that clients with lower (better) HoNOS scores at entry were more likely to exit the program, whereas clients with higher (worse) HoNOS scores at entry are likely to remain in the Program, as would be desired.**

The number of months that clients spent in the Program before exiting was significantly related to their HoNOS score at entry, with higher (worse) scores on entry mildly associated with a longer period of time before exit (Pearson correlation,  $r = .252$   $p < .05$ ), as would be expected.

### 3.5.4 Reason for exit

The exit criteria for the Program are summarised in the box below.

---

<sup>3</sup> As the distribution of Entry HoNOS scores for Exited clients was significantly non-normal, a non-parametric test was used to analyse the difference in Entry HoNOS the two groups.

#### Box 4: Exit criteria according to MHNIP Program Guidelines

##### Exit criteria according to MHNIP Program Guidelines

The patient will no longer be eligible for services under this initiative when:

a) the mental disorder no longer causes significant disablement to the patient's social, personal and occupational functioning

OR

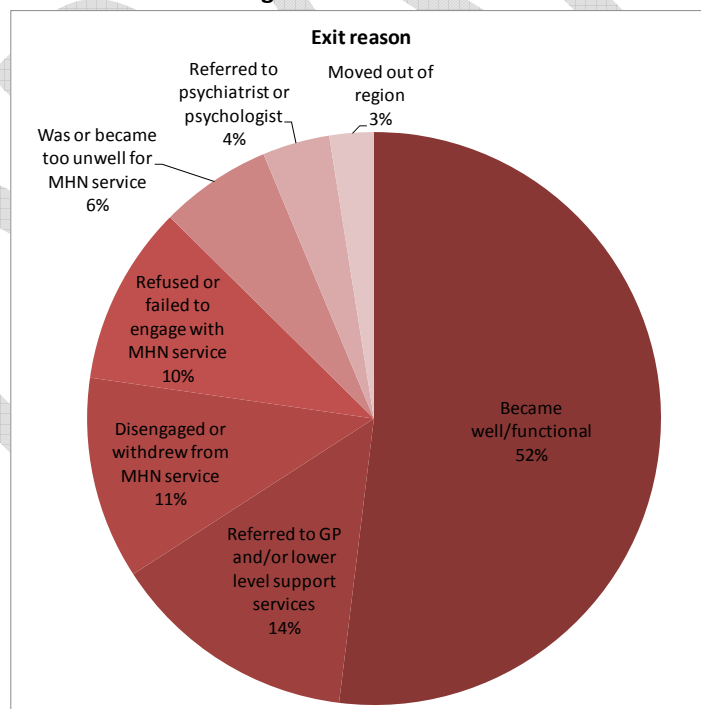
b) the patient no longer requires the clinical services of a mental health nurse

OR

c) the general practitioner or psychiatrist is no longer principally responsible for the patient's clinical mental health care.

According to the data provided to the evaluators by each site, slightly more than half of the 79 clients for whom an Exit Reason was recorded had left the Program because they *became well/functional* - analogous to criterion (a) above.

Figure 41: Exit reason



Note that the "exit reason" was collected as a free text field, which led to some variation in the interpretation made by sites when recording this information. Therefore reasons such as "referred to GP" may be a corollary of clients becoming well/functional, which may mean that the true proportion of clients who became functional may be underestimated in this analysis.

It is interesting to note that 10% of clients exited because they *refused or failed to engage with MHN service*, and a further 11% of exiting clients had *disengaged or withdrawn* from the service. **Overall, these clients represent around 6% of all clients who entered the Program (n=271), indicating a relatively low level of difficulty in engaging clients with the Program.**

### 3.5.5 Exit reason by Primary diagnosis

Clients with an *Anxiety Disorder* appeared to be slightly more likely than other clients to disengage or withdraw from the service (see **Table 12** below), however the sample sizes for this analysis are quite small.

**Table 12: Exit Reason by Primary Diagnosis**

Exit reason	Anxiety Disorder (n=14)	Mood Disorder (n=51)	Schizophrenia or Other Psychotic Disorder (n=14)	Other Disorder* (n=3)	Total (n=79)
Became well/functional	50.0%	54.2%	42.9%	66.7%	<b>51.9%</b>
Referred to GP and/or lower level support service	7.1%	12.5%	21.4%	33.3%	<b>13.9%</b>
Disengaged or withdrew from MHN service	28.6%	6.3%	14.3%	0.0%	<b>11.4%</b>
Refused or failed to engage with MHN service	7.1%	14.6%	0.0%	0.0%	<b>10.1%</b>
Was or became too unwell for MHN service	0.0%	6.3%	14.3%	0.0%	<b>6.3%</b>
Referred to psychiatrist or psychologist	7.1%	2.1%	7.1%	0.0%	<b>3.8%</b>
Moved out of region	0.0%	4.2%	0.0%	0.0%	<b>2.5%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
% Not stated		5.9%			3.7%

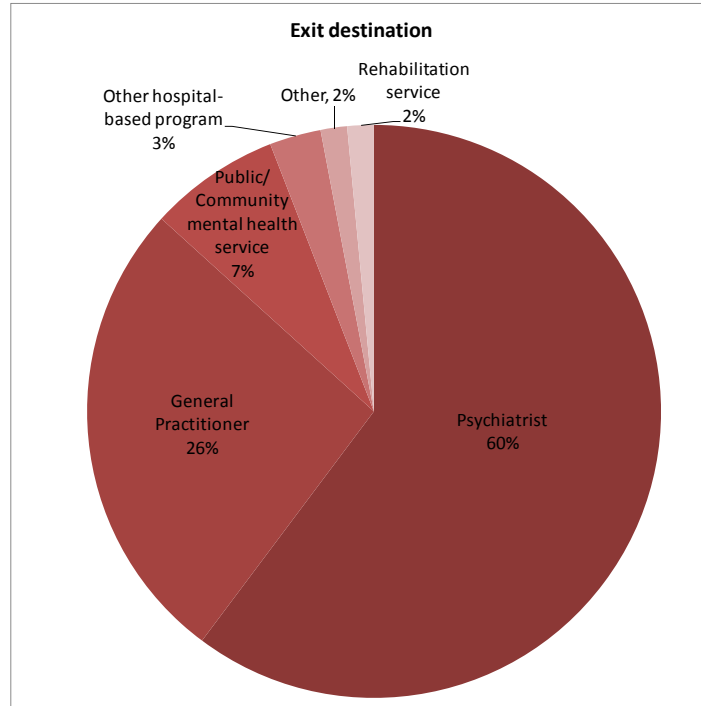
\* "Other Disorder" in this table comprises 3 clients only: Adjustment Disorder (n=1), Eating Disorder (n=1), and Personality Disorder (n=1).

### 3.5.6 Exit destination

Exit destination was reported for approximately 80% of Exited clients.

Of the **65** Exited clients for whom exit destination was reported, more than 60% exited to a *psychiatrist*, and more than one quarter exited to a *general practitioner*. *Figure 42* has details.

**Figure 42: Exit destination**



### 3.6 Outcomes (HoNOS) for clients who exited the Program

---

#### 3.6.1 HoNOS scores at exit

HoNOS scores at exit were recorded for only 46 (56.1%) of the 82 clients who exited the Program. The average HoNOS score on exit was **9.5** (median 8.0), with a standard deviation of 8.2.

This is slightly higher than the average HoNOS score reported nationally under the MHNOC<sup>4</sup> for voluntary adult clients at exit from an ambulatory service in 2006-7 (the latest available), as shown in

---

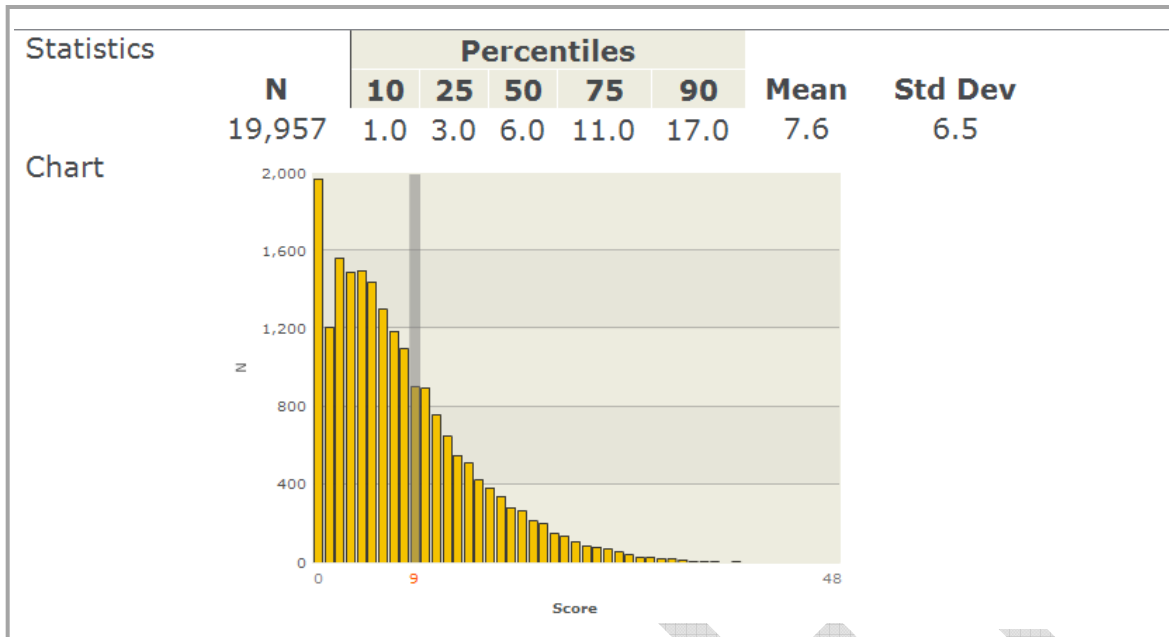
<sup>4</sup> Mental Health National Outcomes and Casemix Collection (Australia)



Figure 43.

DRAFT

**Figure 43: Distribution of HoNOS scores reported under the MHNOC for voluntary adult clients at exit from an ambulatory service in 2006-7**



Extracted from the online AMHOCN<sup>5</sup> Web Decision Support Tool, available at <http://wdst.mhnocc.org/>. Retrieved 14/8/2009. Query which produced the image above:

<http://wdst.mhnocc.org/query/jurisdiction=national/age-group=adult/measure=honos/view=htot12/level-of-analysis=collection-occasion/occasion=discharge/status-score=9/service-setting=ambulatory/financial-year=2006/legal-status=voluntary/>

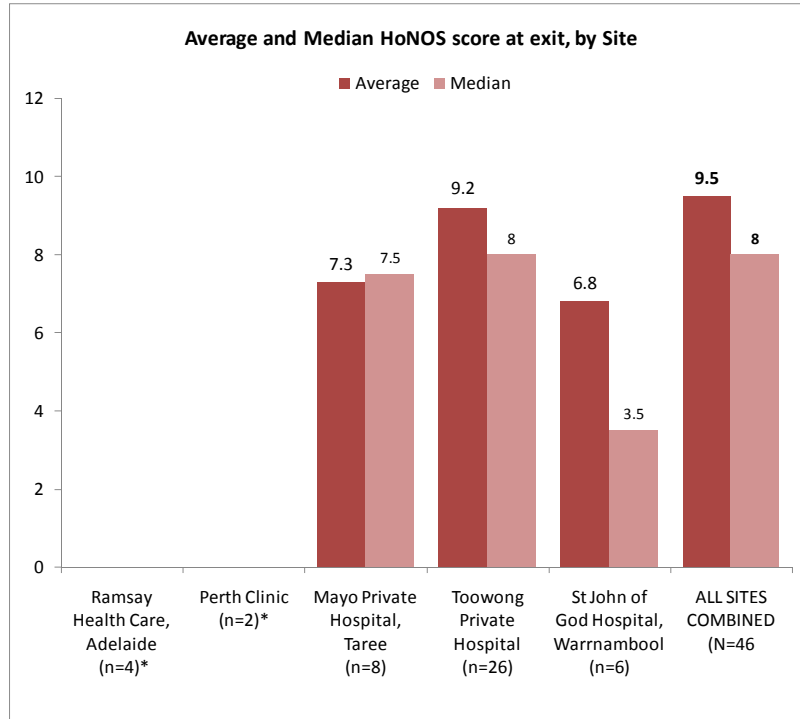
A mean HoNOS score of 9.5 (highlighted in *Figure 43* above) would lie around the 69<sup>th</sup> percentile of the national distribution of scores. **This suggests that while the overall severity of mental health related problems experienced by the MHNIP client group at exit may appear to be slightly higher on average than for clients of other community-based mental health services, the difference is unlikely to be statistically significant<sup>6</sup>.**

There was some variation between sites in the average HoNOS at Exit, as shown in *Figure 44* below. Note that the data for Adelaide and Perth are not shown due to very small sample sizes.

<sup>5</sup> Australian Mental Health Outcomes and Classification Network

<sup>6</sup> Due to the highly skewed nature of the HoNOS data, statistical comparison of the two means was inappropriate and likely to produce misleading results.

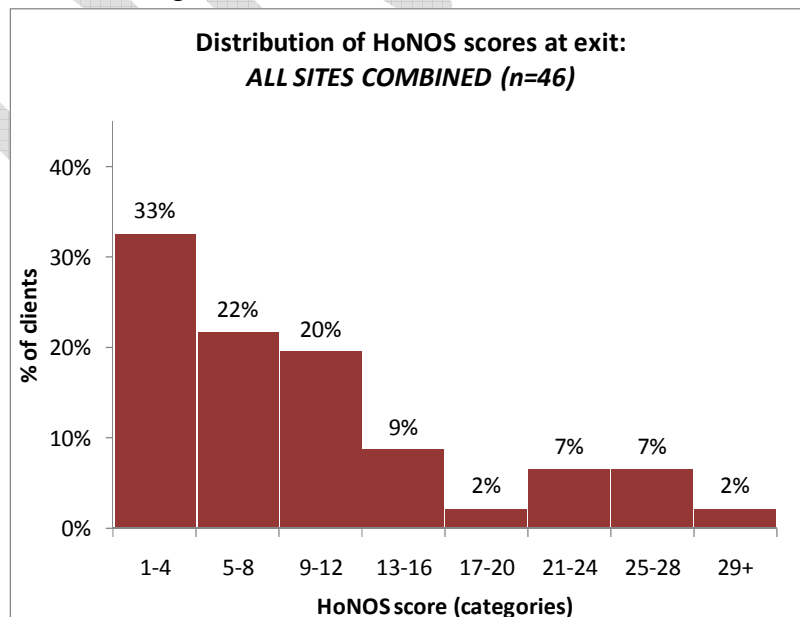
**Figure 44: Average and Median HoNOS score at exit, by Site**



\* Data not shown for sites where n<5, in order to protect client confidentiality and to avoid unreliable estimates.

The distribution of HoNOS scores at exit is shown in *Figure 45* below. This is clearly different to the distribution of HoNOS scores at entry (see *Figure 11*). It also illustrates the very wide range of HoNOS scores reported for clients at exit, ranging from 1 point (which would reflect very low severity) to more than 29 points (which would reflect moderate to high severity). This range of scores reflects the subgroups within the sample of exited clients - some clients exited the Program after becoming well/functional, whereas others exited after becoming too unwell to continue in the Program.

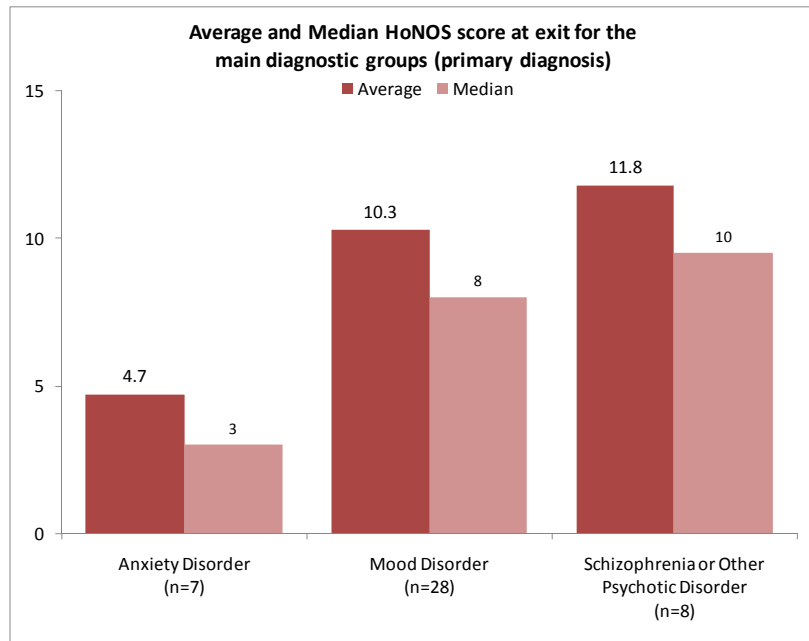
**Figure 45: Distribution of HoNOS scores at exit**



### 3.6.2 HoNOS scores at exit by Primary diagnosis

The average HoNOS score at exit appeared to be lower for clients with an Anxiety Disorder than for clients with a Mood Disorder or Psychosis. However this should be viewed as suggestive only, as the sample size is small.

Figure 46: Average and median HoNOS score at exit for clients in the main diagnostic groups (primary diagnosis)



### 3.6.3 Change in HoNOS between entry and exit

Recalling that the average HoNOS score on **Entry** for clients who exited the Program was **13.5** and the average **Exit** HoNOS score was **9.5**, statistical testing was carried out to determine whether the difference was statistically significant.

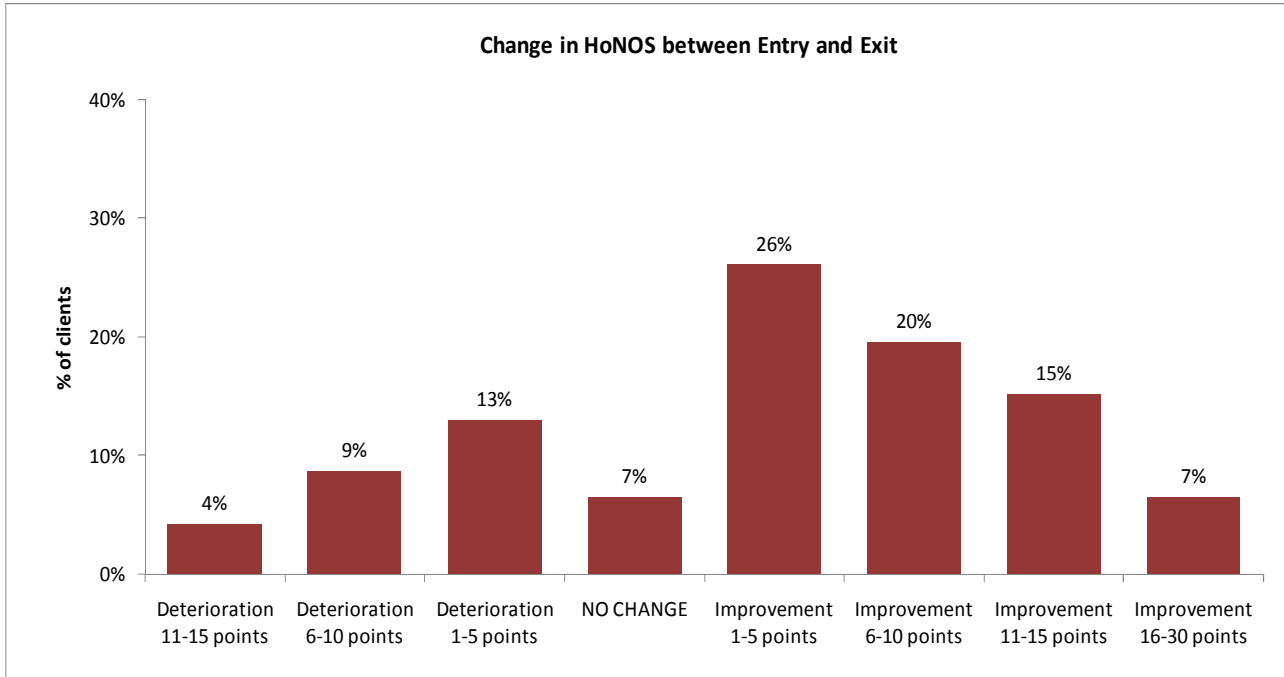
Testing identified a **statistically significant difference** between HoNOS at entry and exit for the **46 clients** with a HoNOS score at both time points (Wilcoxon test for paired samples<sup>7</sup>,  $p < .01$ ), **confirming that clients recorded a significantly lower HoNOS score (and therefore, improvement) on exit from the Program.**

Of these 46 clients with HoNOS recorded at both entry and exit –

- ⇒ 67% recorded an **improvement** based on their HoNOS score,
- ⇒ 7% of clients recorded **no change** in HoNOS score, and
- ⇒ 26% of clients recorded a **deterioration** based on their HoNOS score.

<sup>7</sup> A non-parametric test was used as the data did not meet assumptions for parametric testing.

**Figure 47: Change in HoNOS between Entry and Exit**



The average change in HoNOS between entry and exit was **4 HoNOS points**.

According to Parabiaghi *et al*<sup>8</sup>, a change of 8 HoNOS points for an individual client would be needed to be confident that a *clinically significant change* had occurred.

A change of 8 points or more occurred for 14 (**30.4%**) of these 46 clients.

### **3.6.4 Change in HoNOS between entry and exit for clients who became well/functional**

The preceding analysis was conducted on a group comprising clients who exited the Program regardless of their reason for exit. Some of these clients exited because they became well, some exited because they became too unwell, and others exited for other reasons. Therefore the analysis of change in HoNOS scores between entry and exit was also performed on the subgroup of clients who were known to have exited as a consequence of becoming well/functional.

Of 82 clients who exited the MHNIP, **41** were known to have exited as a consequence of becoming well/functional (see Section 3.4.8), and **29** of them had HoNOS scores at both entry and exit. The following

<sup>8</sup> Parabiaghi A, Barbato A, D'Avanzo B, Erlicher A & Lora A. (2005). Assessing reliable and clinically significant change on Health of the Nation Outcome Scales: method for displaying longitudinal data. *Australian and New Zealand Journal of Psychiatry*, 29(8), pp 719-725.

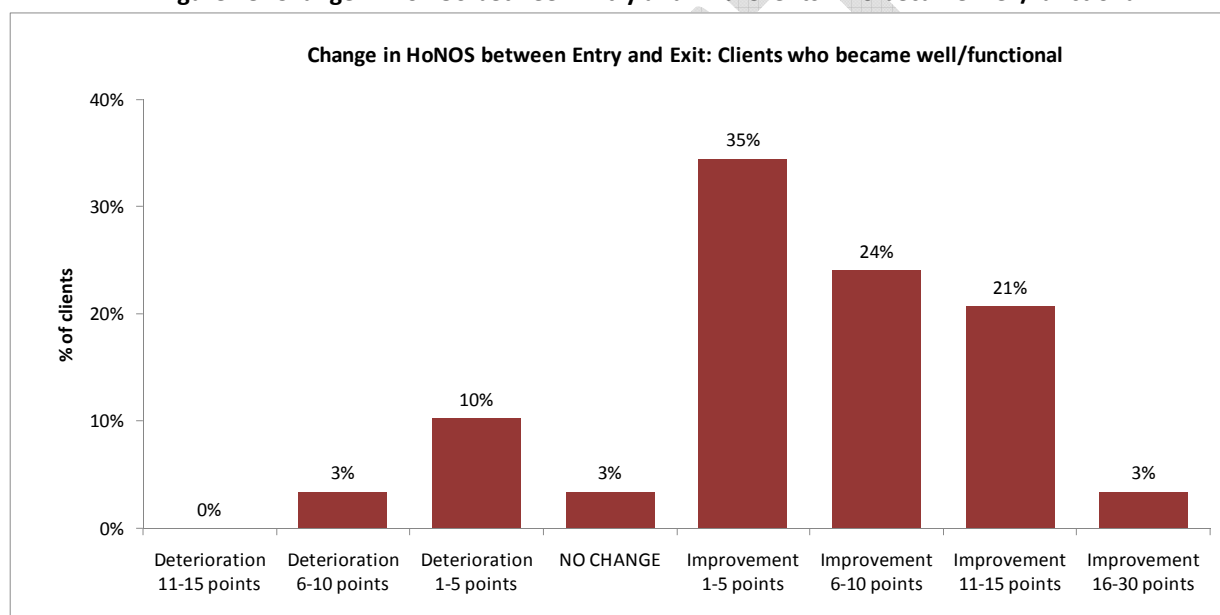
analysis looks at change in HoNOS scores from entry to exit for these 29 clients who *became well/functional*.

The average HoNOS score on Entry for these 29 clients was **12.2** and their average HoNOS score on Exit was **6.6**.

Statistical testing identified a **highly significant difference** between HoNOS at entry and exit (Wilcoxon test for paired samples<sup>9</sup>,  $p < .001$ ), **confirming that clients who became well/functional recorded a significantly lower HoNOS on exit from the Program.**

An improved HoNOS score at exit was recorded for 25 (**82.8%**) of the 29 clients who became well/functional. The average change in HoNOS between entry and exit was **5.7 HoNOS points**.

**Figure 48: Change in HoNOS between Entry and Exit: Clients who became well/functional**



According to Parabiaghi *et al*<sup>10</sup>, a change of 8 HoNOS points for an individual client would be needed to be confident that a *clinically significant change* had occurred.

A change of 8 points or more occurred for 10 (34.5%) of these 29 clients.

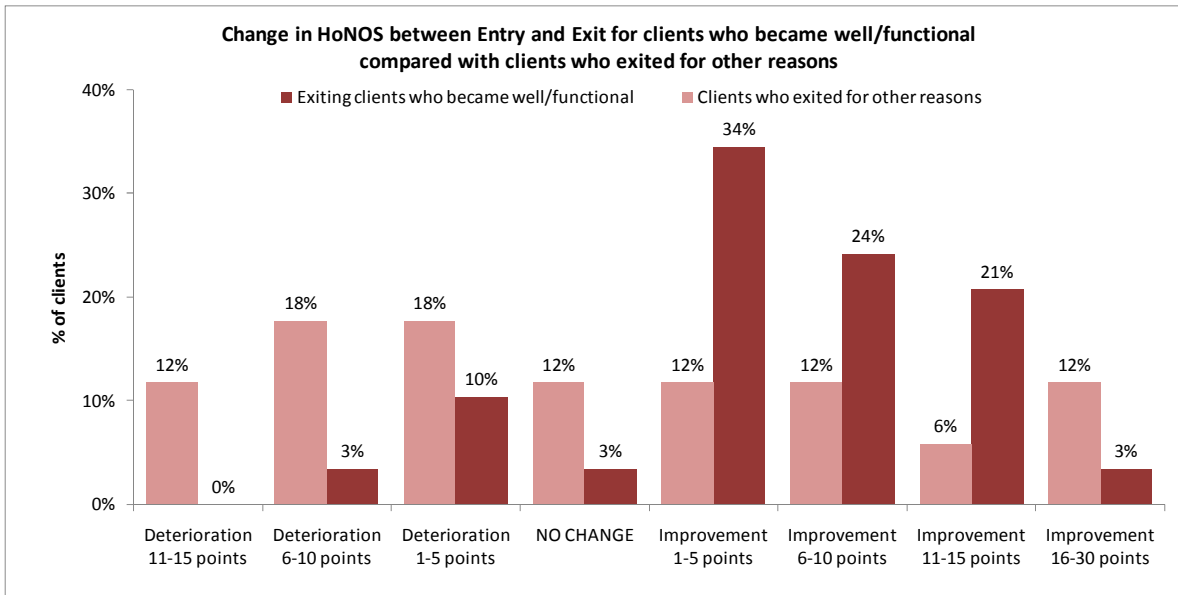
<sup>9</sup> A non-parametric test was used as the data did not meet assumptions for parametric testing.

<sup>10</sup> Parabiaghi A, Barbato A, D'Avanzo B, Erlicher A & Lora A. (2005). Assessing reliable and clinically significant change on Health of the Nation Outcome Scales: method for displaying longitudinal data. *Australian and New Zealand Journal of Psychiatry*, 29(8), pp 719-725.

### 3.6.5 Comparison of change in HoNOS for clients who became well/functional and clients who exited for other reasons

Figure 49 illustrates the different profile of change for clients who became well/functional and clients who exited for other reasons.

Figure 49: Change in HoNOS between Entry and Exit for clients who became well/functional



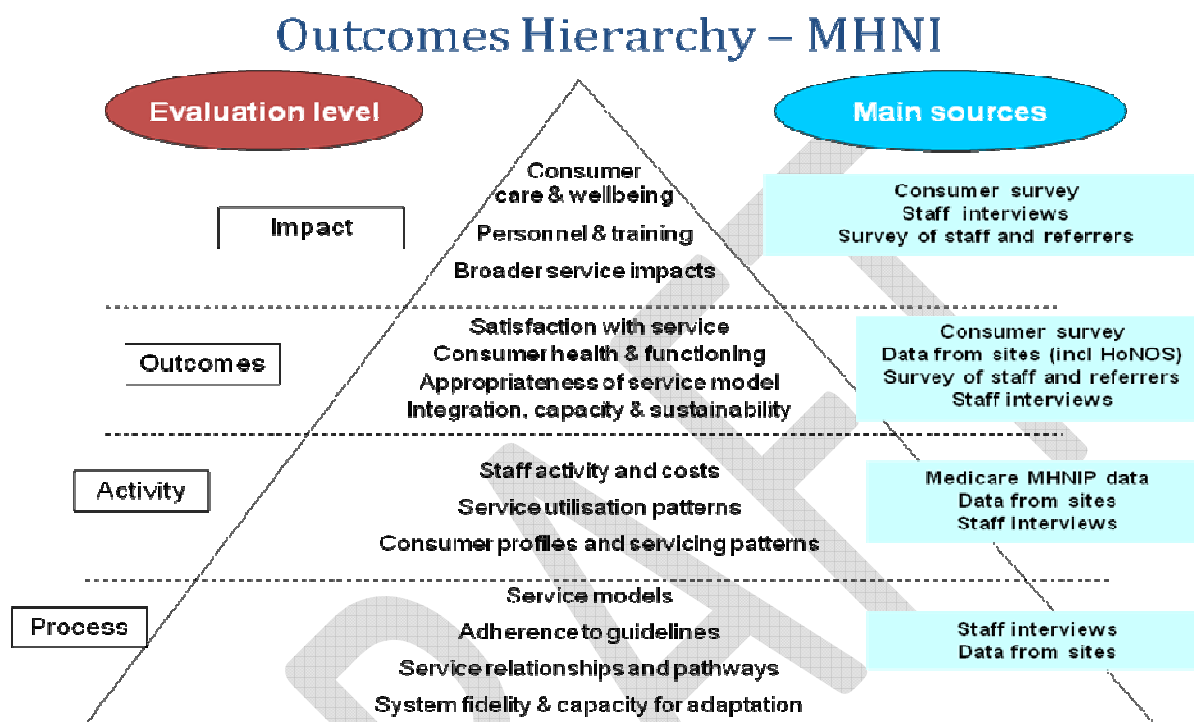
Recall that clients who exited as a consequence of becoming well/functional had an average change in HoNOS between entry and exit of 5.7 points.

In comparison, clients who exited for other reasons had a change in HoNOS of only 1.1 points on average.

The difference in change scores for clients who became well/functional and clients who exited for other reasons was **statistically significant** (Mann-Whitney U test,  $p < .05$ ).

## 4 CONCLUSIONS

Based on the analysis of site-based data a number of conclusions are drawn. These are presented in relation to the program logic hierarchy that shaped the Evaluation Framework developed for this review. The data analysis has provided informed about **Level 2** of the Hierarchy – **Activity** and **Level 3** – **Outcomes**.



### 4.1 Conclusions relating to the Activity Dimension of the Program Logic Hierarchy

#### 4.1.1 Program responsiveness

The majority (70%) of clients entered the MHNIP on the date they were referred – indicating a high degree of Program responsiveness.

#### 4.1.2 Eligibility criteria for the MHNIP

Six clients referred to the MHNIP were refused entry because they failed to meet one or more of the eligibility criteria on assessment.

A further 59 the 271 clients accepted into the Program (22%) were reported to have failed to meet one or more entrance criteria and were therefore technically ineligible according to program guidelines.

**These findings may indicate the need to review Program Guidelines, possibly with a view to changing the number of criteria that must be met to achieve eligibility.**



#### 4.1.3 Need based on entry HoNOS score

The average HoNOS score at entry across all sites was **14.5** (median 14) with a standard deviation of 5.8.

**Analysis of these scores shows that some clients with very low overall severity of problems are receiving a service under the MHNIP, despite the intention of the MHNIP to provide a service to people with severe mental disorders.**

#### 4.1.4 Client mental health need

The most commonly reported primary mental health diagnosis at entry to the program was *Mood Disorder* (53% of clients). One quarter of clients had been diagnosed with *Schizophrenia or Other Psychotic Disorder*, and a further 15% of clients were reported as having an *Anxiety Disorder*.

#### 4.1.5 Average time spent in the Program

On average clients spent **5.7 months** in the Program before exiting, and this was quite consistent across sites.

#### 4.1.6 Services provided to clients

Across all sites, clients had received an average of around **14 face-to-face consults** each, and **an average of 2 face to face consults per month**, regardless of primary diagnosis.

Average number of face-to-face services per month appears to increase as level of care required increases, as would be expected, averaging **1.4** services per month for low, **1.9** for medium, and **2.6** for high care needs.

Across all sites, 96% of clients were contacted at least once by telephone, 84% received at least one home visit and 58% were seen at least once in the clinic. Sites differed as to their use of each type of contact, reflecting in part individual sites' emphasis on home-based versus clinic-based method of delivery.

## 4.2 Conclusions relating to the Outcomes Dimension of the Program Logic Hierarchy

---

#### 4.2.1 Exit related information

According to the data provided to the evaluators by each site, **slightly more than half** of the 79 clients for whom an Exit Reason was recorded had left the Program because they *became well/functional*.

Interestingly, 10% of clients exited because they *refused or failed to engage with MHN service*, and a further 11% of exiting clients had *disengaged or withdrawn* from the service. **Overall, these clients represent some 6% of all clients who entered the Program (n=271), indicating a relatively low level of difficulty in engaging clients with the Program.**

Clients requiring a “Low” level of care (as determined at entry to the Program) had the highest rate of exit (37%). This was considerably higher than the exit rate of clients with medium level care needs (21% exited) and slightly higher than that of high level care clients (32% exited).

Of the **65** Exited clients for whom exit destination was reported, more than 60% exited to a *psychiatrist*, and more than one quarter exited to a *general practitioner*.

#### **4.2.2 Relationship between HoNOS score at entry and exit**

Statistical analysis of the entry HoNOS scores for Exited and Non-Exited clients identified a statistically significant difference (Mann-Whitney U test,  $p < .05$ ) between both groups, suggesting that clients with lower (better functionality) HoNOS scores at entry were more likely to exit the Program, whereas clients with higher (worse functionality) HoNOS scores at entry are likely to remain in the Program, as would be desired.

The number of months that clients spent in the Program before exiting was significantly related to their HoNOS score at entry, with higher (worse functionality) scores on entry mildly associated with a longer period of time before exit (Pearson correlation,  $r = .252$   $p < .05$ ), as would be expected.

#### **4.2.3 Impact of MHNIP on clients, as measure by changes in HoNOS scores over time**

The overall change in clients’ HoNOS scores over time was **statistically significant** (Repeated Measures ANOVA,  $p < .01$ ).

Post hoc testing (Tukey HSD) indicated that the significant differences occurred between **Entry and 1<sup>st</sup> Review** ( $p < .01$ ) and **Entry and 4<sup>th</sup> Review** ( $p < .01$ ), *however note that only three clients had a 4<sup>th</sup> Review*.

#### **4.2.4 Change in HoNOS score between entry and exit to the Program**

Recalling that the average HoNOS score on **Entry** for clients who exited the Program was **13.5** and the average **Exit** HoNOS score was **9.5**, statistical testing was carried out to determine whether the difference was statistically significant.

Testing identified a **statistically significant difference** between HoNOS at entry and exit for the 46 clients with a HoNOS score at both time points (Wilcoxon test for paired samples,  $p < .01$ ), **confirming that clients recorded a significantly lower HoNOS score (and therefore, improvement) on exit from the Program.**

Further analysis was undertaken of change in HoNOS scores between entry and exit for clients who were known to have exited as a consequence of *becoming well/functional*. **29** of these had HoNOS scores at both entry and exit. Statistical testing identified a **highly significant difference** between HoNOS at entry and exit (Wilcoxon test for paired samples,  $p < .001$ ), **confirming that clients who became well/functional recorded a significantly lower HoNOS on exit from the Program.**

**Table 13** below summarises the changes in HoNOS scores, over time. It shows a trend for a majority of clients improving between entry and 1<sup>st</sup> review in particular, and between entry and exit.

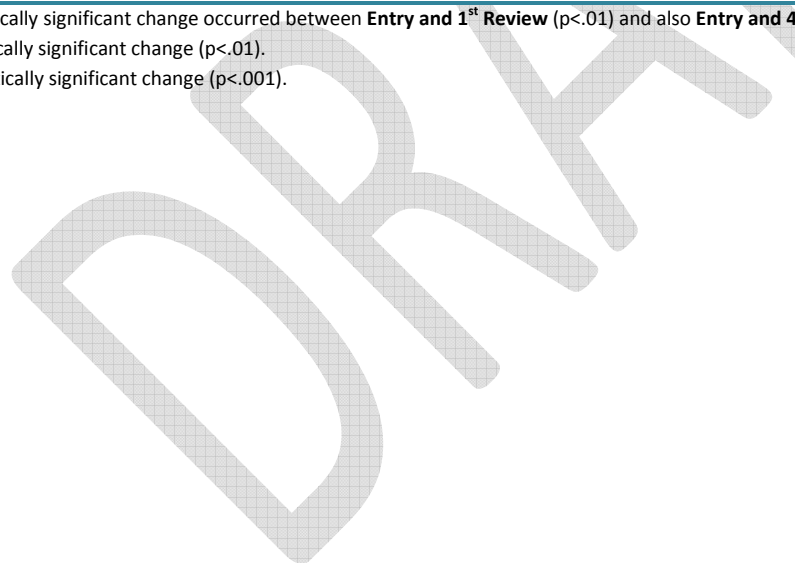
**Table 13: Summarising the changes in HoNOS scores, over time**

Interval	No. clients with HoNOS at both time points	% of clients showing <i>Improvement</i>	% of clients showing <i>No Change</i>	% of clients showing <i>Deterioration</i>	Average Change
<i>Clients who had not yet exited the MHNIP (n=189)</i>					
Entry to 1 <sup>st</sup> Review	158	64%	11%	25%	3.3 HoNOS points improvement*
1 <sup>st</sup> to 2 <sup>nd</sup> Review	57	48%	9%	44%	0.6 HoNOS points improvement
2 <sup>nd</sup> to 3 <sup>rd</sup> Review	40	52.5%	5%	42.5%	0.2 HoNOS points deterioration
3 <sup>rd</sup> to 4 <sup>th</sup> Review	16	50%	19%	31%	1.8 HoNOS points improvement
<i>Clients who had exited the MHNIP (n=82)</i>					
Entry to 1 <sup>st</sup> Review	41	66%	5%	29%	2.5 HoNOS points improvement
<b>Entry to Exit</b>	<b>46</b>	<b>67%</b>	<b>7%</b>	<b>26%</b>	<b>4.0 HoNOS points improvement**</b>
<i>Clients who had exited the MHNIP due to becoming well or functional (n=41)</i>					
Entry to 1 <sup>st</sup> Review	28	71%	4%	25%	2.8 HoNOS points improvement
<b>Entry to Exit</b>	<b>29</b>	<b>83%</b>	<b>3%</b>	<b>14%</b>	<b>5.7 HoNOS points improvement***</b>

\*A statistically significant change occurred between **Entry and 1<sup>st</sup> Review** ( $p < .01$ ) and also **Entry and 4<sup>th</sup> Review** ( $p < .01$ , not shown).

\*\*Statistically significant change ( $p < .01$ ).

\*\*\*Statistically significant change ( $p < .001$ ).



## 5 ATTACHMENTS

### 5.1 Site Data Collection Tool

The MS Word version of the Site Data Collection Tool, including the instructions provided with it, is included below. Most sites used the Excel version of the tool. The Excel version included features such as drop-down boxes and data validation (range restriction and dependencies) for items such as dates and scores.

### 5.2 The MHNIP data compilation form

#### Cover sheet

The MHNIP data compilation form is a means for MHNIP sites to compile the data required for the Evaluation of the program. This form is an *alternative* to the MHNIP data collection spreadsheet, and it is provided for those sites who wish to compile their data on paper rather than in the spreadsheet.

Please complete one column of the form per client, as shown in the example on the following pages. Blank forms for data entry are on pages 7 through 10 – print as many copies of those pages as you require. **[Note that these are not included in this Attachment]**

Please enter data for **all referrals to your program**, regardless of whether or not the client entered the program.

Note that the asterisked/red items are **\*Essential** items - they should be completed for **ALL applicable clients**.

While the rest of the items in the form are important for the Evaluation, we understand that this data may not be readily available at every site. Therefore, **we would be grateful if as many items as possible could be filled in, at least for a minimum of 20 clients**. We encourage you to provide as much data as possible, because:

**the more data you provide, the more accurately the program can be evaluated,  
and the greater the likelihood of finding a significant effect of the program.**

**For assistance with this form**, or if you would like any changes made so that you can enter your particular data more easily, please contact the member of the Evaluation team allocated to your site (Dan Cox, Richard Giles or Frida Cheek).

**Thankyou.**

Naomi Guiver, Australian Institute for Social Research, The University of Adelaide  
On behalf of the MHNIP Evaluation Team (Dr Kate Barnett, Dr Frida Cheek, Dan Cox, Richard Giles, Naomi Guiver)

## EXAMPLE

Name of MHNIP site: \_\_XYZ hospital\_\_\_\_\_ Form 1 of 5

Contact person: \_\_Amelia Xander\_\_\_\_\_ Ph: (08) 5555 5555

* Client ID eg number, initials, code (do not provide client's full name)	Example1: Client 001 (client who entered program)	Example: Client 002 (client referred but did not enter program)	ID:	ID:
<b>Referral &amp; eligibility information</b>				
* Date of referral to MHNIP	1/02/2008	14/02/2008		
* Type of Referrer (P = psychiatrist, G = GP)	P	G		
Referred by (initials/code)	JB	LP		
Date assessed for eligibility to MHNIP	10/02/2008	14/02/2008		
* Entrance criteria 1: Diagnosis on referral	Psychosis	Depressive episode		
Entrance criteria 2: Significant disablement to social, personal, occupational functioning (Yes/No)	Yes	Yes		
Entrance criteria 3: At least one episode of hospitalisation for treatment, or at risk of requiring hospitalisation (Yes/No)	Yes	No		
Entrance criteria 4: Expected to require continuing treatment or management over next two years (Yes/No)	Yes	No		
Entrance criteria 5: GP or psychiatrist is principally responsible for client's clinical MH care (Yes/No)	Yes	Yes		
Entrance criteria 6: Client consents to treatment by MH nurse (Yes/No)	Yes	Yes		
* Eligible? (Yes/No) (If "No", this record is now complete for this client)	Yes	No		

Entry information				
* <b>Date entered MHNIP program</b>	15/02/2008			
<b>Mental Health Nurse ID</b> (eg initials)	AG			
* <b>Level of care required</b> <i>Either: Low/Medium/High</i> <i>Or: Monthly/Fortnightly/Weekly/ Twice per week/More than twice</i>	High			
Client demographics etc				
* <b>Gender</b> (M/F)	F			
* <b>Date of birth</b>	1/06/1973			
* <b>Marital status</b> (Never married/Defacto/Married/ Separated or Divorced/Widowed)	Never married			
* <b>Birthplace</b> (Australia/ Other country)	Australia			
* <b>Main language spoken at home</b> (English/Not English)	Not English			
* <b>Indigenous status</b> (Indigenous/Not indigenous)	Not indigenous			
* <b>Postcode of residence</b>	5030			
* <b>Private Health Insurance</b> (Yes/No)	Yes			
* <b>Currently an active client?</b> (Yes/No)	No			
Assessments at entry				
* <b>HoNOS Score on Entry</b>	20			
<b>Other assessment on entry</b> (specify instrument and score)				
1 <sup>st</sup> Review				
* <b>Date of review</b>	15/05/2008			
* <b>HoNOS Score</b>	14			
<b>Other assessment</b> (specify instrument and score)				

<b>2<sup>nd</sup> Review</b>				
* <b>Date of review</b>				
* <b>HoNOS Score</b>				
<b>Other assessment</b> (specify instrument and score)				
<b>3<sup>rd</sup> Review</b>				
* <b>Date of review</b>				
* <b>HoNOS Score</b>				
<b>Other assessment</b> (specify instrument and score)				
<b>4<sup>th</sup> Review</b>				
* <b>Date of review</b>				
* <b>HoNOS Score</b>				
<b>Other assessment</b> (specify instrument and score)				
<b>5<sup>th</sup> Review</b>				
* <b>Date of review</b>				
* <b>HoNOS Score</b>				
<b>Other assessment</b> (specify instrument and score)				
<b>6<sup>th</sup> Review</b>				
* <b>Date of review</b>				
* <b>HoNOS Score</b>				
<b>Other assessment</b> (specify instrument and score)				

Services provided to client by Mental Health Nurse (from entry to present)				
* <b>Date of first service</b>	15/02/2008			
* <b>Date of most recent service</b>	25/05/2008			
* <b>Number of FACE-TO-FACE services provided</b> (either at clinic or client's home)	20			
* <b>Types of contact with client</b> <i>Please indicate Yes/No for each type:</i>				
In clinic	Yes			
Home visits	No			
Phone contact	Yes			
<b>Types of service provided to client</b> <i>Please indicate Yes/No for each type:</i>				
Monitor health	Yes			
Provide/monitor medication	Yes			
Support daily living	No			
Info/education to client	Yes			
Support/education to family	No			
Link to other services	Yes			
Group work	No			
Case conference	Yes			
Liaison with psychiatrist	No			
Liaison with GP				
<b>To what extent is <i>NON-ATTENDANCE to appointments</i> an issue with this client?</b> (Not an issue/Minor issue/Major issue)	Minor issue			



Exit information				
* Exited? (Yes/No)	Yes			
* Date of exit	16/06/2008			
* HoNOS Score on exit	12			
Other assessment on exit (specify instrument and score)				
* Reason for exit from MHNIP	Client moved interstate			
Exit destination	Referred to local psychiatrist in new location			
Followed up after exit? (Yes/No)	No			
NOTES/COMMENTS				