4 Results for the Non-Indigenous Demonstration Projects

In accordance with the discussion at the August 2004 Indigenous National Evaluation workshop, the results from the Indigenous DPs (Katherine West Health Board [NT] and Pika Wiya Aboriginal Health Service [SA]), have been described separately to the non-Indigenous DPs. The results of the non-Indigenous DPs are set out below and those of the Indigenous DPs are set out in Section 5.

4.1 Sample characteristics and analysis

4.1.1 Number of respondents

The number of respondents per measurement point is outlined in Table 24 below.

Table 24 Number of respondents per measurement point

Questionnaire Type	Baseline	Middle	Last
CIQ	1974	n/a*	1097
CHQ	1878	1416	1121
CSUQ	1867	1416	1225

*CIQ was not required at the middle measurements point (see Table 12)

4.1.2 Sample for analysis purposes

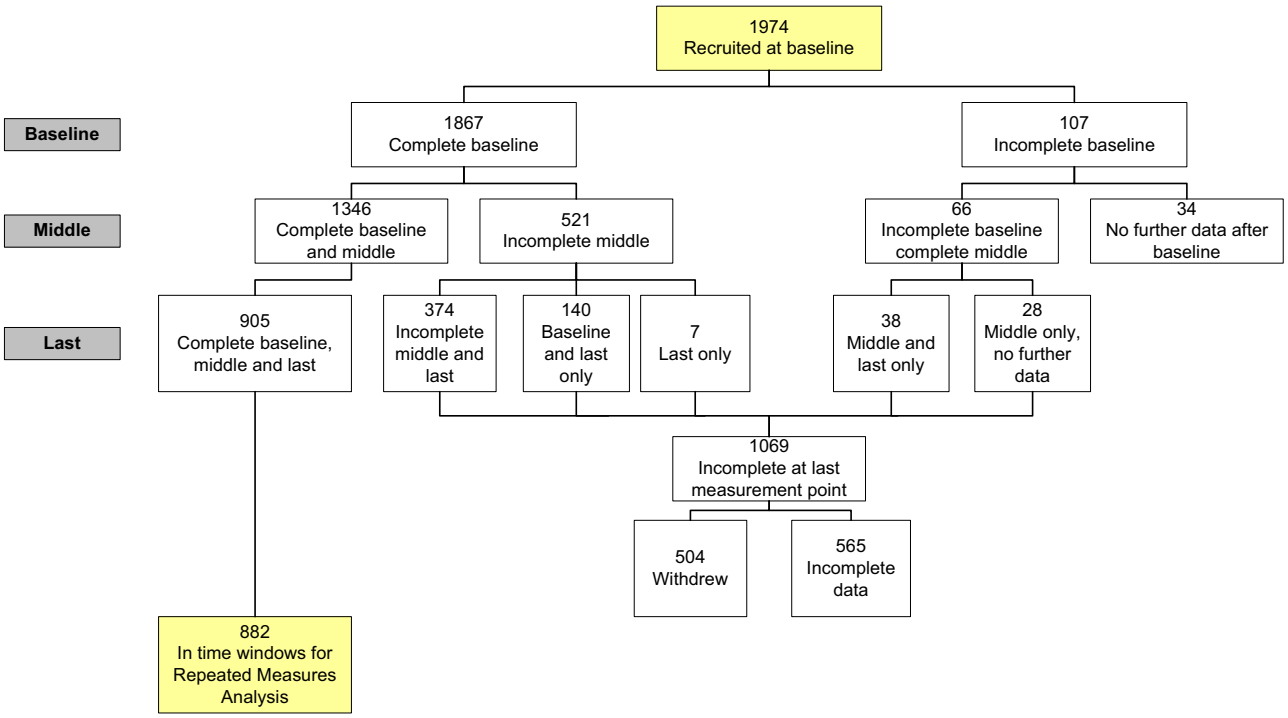
As indicated by Figure 7, clients provided various combinations of data (baseline, middle and last) over the course of the DPs. The shaded boxes represent the information from clients used for different analysis purposes.

One thousand nine hundred and seventy four (1974) clients were recruited to the DPs at baseline and the CIQ was completed for these clients. From this point forward, not all clients provided information at each measurement point. The main reasons for this (as reported by the DPs) included that clients were too busy to complete the evaluation or they refused to do so, they were experiencing poor health or they felt they were too healthy to continue their involvement in the DP self-management program (and evaluation).

Even at baseline, 107 (5%) of the 1974 clients recruited had either the CHQ or CSUQ missing. At the middle measurement point, 1346 clients had complete baseline (CIQ, CHQ, CSUQ) and complete middle (CHQ and CSUQ) data, 68% of the total number of clients recruited.

One thousand four hundred and seventy (74%) of clients completed the questionnaires at all the required measurement points. Of these, 905 (48% of total) clients provided complete information at all measurement points. The 504 who dropped out (1974 – 1470) over the life of the DP self-management program provided a variety of reasons for doing so.

Figure 7 Number of clients who provided data at each measurement point



4.1.3 Repeated measures design

A repeated measures analysis was the most appropriate method of analysis to examine change over time. This analysis takes into account subject variation in looking at successive measures across measurement points. This method of analysis is very robust and tolerant to deviations from normality.

However, this analysis could only be performed for clients with complete data at all three measurement points. Using casewise deletion methods, the sample size for the whole group analysis was reduced from 905 to 882, however, this sample size was still deemed acceptable to achieve adequate power.

4.1.4 Rationale for the selection of variables used in the analysis

For the analysis, a core set of variables were identified by inspection of their range of values at baseline, correlation with other variables, their utility as a measure and the type of domain measured. Seven health outcome variables and two service utilisation variables were chosen for further analysis of key outcomes over time.

4.1.5 Change in the demographic profile due to loss to follow-up

To determine the extent to which the demographic profile was changed as a result of loss to follow-up, a small group of key variables which describe the target client cohort were reviewed.

Table 25 reports the differences in sex, age and disease category between clients who provided baseline and middle data as compared to those who only provided baseline data (i.e. those who had incomplete data at the middle measurement point). The analysis indicated that clients in the younger age category (<55 years of age) were more likely to have incomplete data at the middle data measurement point. There were no other significant demographic differences between the groups at this point.

Table 25 Demographic differences from baseline to middle due to lost to follow-up

		Middle Data Collected		Lost to Middle Follow-up		
		n	%	n	%	p
Sex						
	Male	476	33.7	186	33.1	NS
	Female	936	66.3	376	66.9	
Age						
	<55	167	11.8	101	18.0	<0.0005
	55-64	396	28.0	161	28.6	
	65-74	487	34.5	149	26.5	
	75+	362	25.6	151	26.9	
Condition that impacts most on life						
	Diabetes	210	16.6	72	14.2	NS
	Arthritis / Joint/Bone Condition	484	38.2	177	35.0	
	Chronic Respiratory / Lung	115	9.1	47	9.3	
	Cardiovascular Disease	191	15.1	67	13.2	
	Other	266	21.0	143	28.3	

* p<0.0005 classed as significant

Table 26 reports the differences between clients who provided data at the last measurement point to those who did not (i.e. those who were lost to follow-up). Again the analysis indicated that clients in the younger age category (<55 years of age) were somewhat more likely to be 'lost to follow-up'. There were no other significant demographic differences between the groups at this point.

Table 26 Demographic differences from middle to last due to lost to follow-up

		Last Data Collected		Lost to Last Follow-up		
		n	%	n	%	p
Sex						
	Male	348	31.9	314	35.5	NS
	Female	742	68.1	570	64.5	
Age						
	<55	119	10.9	149	16.9	
	55-64	306	28.1	251	28.4	p<0.0005
	65-74	381	35.0	255	28.8	
	75+	284	26.1	229	25.9	
Condition that impacts most on life						
	Diabetes	146	14.8	136	17.3	
	Arthritis / Joint/Bone Condition	390	39.5	271	34.5	
	Chronic Respiratory / Lung	86	8.7	76	9.7	NS
	Cardiovascular Disease	156	15.8	102	13	
	Other	209	21.2	200	25.5	

* p<0.0005 classed as significant

The impact of loss to follow-up on client health status profile was also reviewed. With exception of Health Distress, there were no significant differences in any of the health outcome variables reported at baseline. Participants lost to follow-up had a slightly higher mean Health Distress score at baseline compared to participants who remained in the study (T-test, T=3.22, df=1805, p=0.001). For example, a mean of 1.85 (SD=1.34) compared to a mean of 1.66 (SD=1.20). There were no significant differences in the number of GP Visits and Hospital Visits.

Some of the reasons noted by DPs for client drop out from the DP self-management programs were:

- Too busy;
- Lack of interested;
- Too many questionnaires; and
- Ill health;
- Client passed away;
- Client moved.

4.2 Description of the sample

In this Section, the demographic characteristics and health related circumstances of DP participants are described including how the participant profile changed over time taking into account the impact of loss to follow-up/drop out from the DP self-management program.

4.2.1 Demographic characteristics

Table 27 shows the demographic characteristics of participants in the non-Indigenous DPs at baseline and last data measurement points.

The majority of the participants were female, although the number of males involved was still sizeable. The participants reported a spread of educational background, with university education being reported least often and technical/trade qualifications being reported most often. While the majority of participants reported being retired, approximately one fifth reported being employed or engaged in unpaid work. The majority of participants also reported being on some kind of pension. Whilst the participants described here came from the non-Indigenous DPs, a small number of participants (approximately 2%) reported being of Indigenous background. This is consistent with the overall proportion of people from an Indigenous background as reported in the 2001 Australian Census (29).

Table 27 Demographic characteristics of participants in the non-Indigenous DPs at baseline and last measurement points

Demographic characteristics of non-Indigenous participants at baseline and last

	Baseline (n=1974)		Last (n=1097)	
Characteristics	**n**	**%**	**n**	**%**
Highest Qualification				
None	314	15.9	150	13.7
School only	418	21.2	207	18.9
Technical / Trade / TAFE	603	30.5	341	31.1
University education	206	10.4	120	10.9
Employment Status				
Employed	210	10.6	93	8.5
Unemployed	36	1.8	18	1.6
Unpaid work	248	12.6	140	12.8
Retired	1153	58.4	655	59.7
Unable to work	269	13.6	147	13.4
Pension				
None	370	18.7	183	16.7
Australian Age Pension	853	43.2	562	51.2
Other allowance	611	31.0	303	27.6
Sex				
Male	662	33.5	349	31.8
Female	1311	66.4	748	68.2
Age				
<55	268	13.6	129	11.8
55-65	557	28.2	320	29.2
66-75	636	32.2	385	35.1
75+	513	26.0	262	23.9
Language				
English only	1674	84.8	925	84.3
Other	300	15.2	172	15.7

4.2.2 Health –related circumstances

Table 28 shows that the health related circumstances of the participants in the non-Indigenous DPs at baseline and last measurement points.

The majority of participants reported living with others and, overwhelmingly, in private accommodation. The majority reported not having a carer. Arthritis was reported most frequently as the condition which had the most impact on life, with one third of participants citing this condition. It was followed by diabetes and cardiovascular disease with just over one in ten participants citing one of these conditions. A substantial proportion of the cohort reported the "other" condition category as the one that impacted most on life, citing a wide range of conditions, symptoms and diseases. The vast majority of the cohort did not smoke, although approximately half of this number used to smoke.

Table 28 shows that there were no significant changes in health related circumstances/behaviours over time, including tobacco usage and alcohol consumption ($p>0.05$).

Table 28 Health related circumstances of participants in non-Indigenous DPs at baseline and last measurement points

	Baseline (n=1974)		Last (n=1097)	
Characteristics	**n**	**%**	**n**	**%**
Living Arrangements				
Live alone	656	33.2	381	34.7
Live with others	1303	66.0	711	64.8
Accomodation				
Private	1765	89.4	980	89.3
Supported / other	188	9.5	109	9.9
Has a Carer				
Yes	406	20.6	232	21.1
No	1352	68.5	779	71.0
Condition that impacts most on life				
Diabetes	282	14.3	140	12.8
Arthritis / Joint/Bone Condition	661	33.5	375	34.2
Chronic Respiratory / Lung	162	8.2	69	6.3
Cardiovascular Disease	258	13.1	140	12.8
Renal Disease	10	0.5	3	0.3
Depression	63	3.2	25	2.3
Osteoporosis	53	2.7	45	4.1
Other	283	14.3	140	12.8
Smoking Status				
Never smoked	885	44.8	502	45.8
Ex-smoker	856	43.4	486	44.3
Smoker	220	11.1	102	9.3
Alcohol Consumption				
Every day	237	12.1	118	10.8
4-6 days a week	123	6.2	69	6.3
1-3 days a week	262	13.3	151	13.8
Fortnightly or less	110	5.6	75	6.8
Monthly or less	477	24.2	244	22.2
Don't drink	751	38	435	39.7

4.3 Process evaluation results – what processes were undertaken during Demonstration Project implementation and how they changed over time

This Section describes how, over the life of the SHCI, the non-Indigenous DPs sought to reach potential participants, followed by what processes were undertaken during the implementation phase.

4.3.1 Process maps of the non-Indigenous self-management Demonstration Projects in the SHCI

The purpose of the process maps was to obtain a 'snapshot' of how the DPs were progressing at important epochs over the life of the SHCI. The analysis of the process mapping data involved the development of an overview process map for all of the care-related processes identified for each of the National Evaluation domains (client, HSP and community) at baseline, and the middle and last measurement points.

This Section aims to describe:

- The overview process map for each domain at each measurement point;
- Changes from the previous measurement point; and
- A description of the Process Models at each measurement point, including where variation and similarity exists within each Process Model.

A description of the processes identified in the overview process maps is provided in Table 29.

Table 29 Description of process mapping processes

Process	Description
Marketing	• The focus of the marketing strategy may have been directed to clients or HSPs or a combination of the two. HSPs or community groups also marketed the DP directly to potential clients. • The nature of the marketing strategy could be targeted and/or opportunistic. • The development of the strategy may have had input from an external consultant. • A range of marketing materials were used by the DPs for example, pamphlets, videos, posters, presentations etc.
GP recruitment	• The purpose of GP recruitment was to provide client referrals. • The approach to recruiting GPs may have involved building new networks and/or utilising existing networks. • The recruitment protocols ranged from being formal (for example, contacts, MOUs) to less formal (for example, letters of commitment and verbal agreements).

Process	Description
Client recruitment	• Confirm the eligibility of the potential client. • Obtain informed consent for participation in the DP. • Provide client with DP information.
Education and training of self-management personnel	• Self-management personnel included those who participated in care-related processes (for example, care and self-management planning, telephone coaching and education and training leaders). Whilst, DP personnel were those staff that worked directly within a DP. • The education and training of self-management personnel may have occurred prior to the recruitment of clients and/or been ongoing. • The basis of training ranged from being DP based (initiated and adopted) to being broadly based and not necessarily offered specifically by the DP. • The type of training ranged from being the core education and training only (for example, Stanford, Flinders and RACGP) to a complete suite of purpose specific self-management education and training (for example, training in telephone coaching), in addition to the core elements. • The extent of training ranged from education and training being offered on a limited basis (i.e. on one occasion only) to being offered on a regular and ongoing basis (for example, compulsory refresher courses).
self-management action planning	• The role of self-management planning ranged from being an intervention that all clients received to one of a suite of interventions. • The driver of the self-management plan was DP personnel and/or a HSP, who may provide sign off on the self-management plan. • The timing of when self-management planning was undertaken ranged from the self-management plan being completed at the time of recruitment to being developed over the course of the DP.
Care planning	• The role of care planning ranged from being an intervention that all clients received to one of a suite of interventions. • The driver of the care plan was DP personnel and/or a GP/HSP, who may provide sign off on the care plan. • The timing of when care planning was undertaken ranged from the care plan being completed at the time of recruitment to being developed over the course of the DP. • The formality of the care plan ranged from being formal (where there was a set framework, qualification for MBS) to informal (where there was no set framework and no qualification for MBS).
Follow-up	• The formality of both care and self-management plan follow-up ranged from formal (where a set follow-up procedure was intrinsic to the process) to informal (where no recommended procedure was in place).
Client education and training	• Education and training ranged from being a fundamental, intrinsic and standardised activity within a DP that all clients received to being an activity that was based upon client need with a range of training options available. • The driver of the training ranged from the DP driving the content, timing and administration of the education and training, to the community driving the content, timing and administration. • The type of education and training offered to clients ranged from the standard Stanford course only to a range of disease specific and 'other' non standard courses (for example, Tai Chi). • The basis of education and training (i.e. how clients were taught) ranged from clients being taught on a one-on-one basis to being taught in a group setting.
Support from self-	• The nature of support ranged from being formal (where regular and structured support was offered to all clients) to informal (where no structure was in place for the type or regularity of support, support occurred on

Process	Description
management personnel	an ad hoc basis). • Support was initiated by the DP and/or the clients. • The availability of support ranged from having clear and defined limits formally placed on the availability of support and was not initiated out of the set times to support being unlimited where contact occurred at non-prescribed times.

Box 4 identifies the way in which the overview process maps progress and how they should be read.

Box 4 How the overview process maps should be read

The overview process maps, progress sequentially from left to right, in terms of time, unless otherwise specified. The process maps identify those processes which are common to all DPs within a given Process Model. They highlight where there is the potential for points of differentiation between the DPs within a given Process Model, and these are identified through the use of solid and dashed lines. The solid lines in the process map represent the fact that ***all*** DPs within a particular Process Model undertook that process, whilst a dashed line represents those processes that the DPs within a Process Model may or may not have undertaken. The dashed lines in the process maps indicate flexibility in the execution of processes both within the Process Models, and within the DPs themselves.

Where variation and similarity in process within a given Process Model was identified, this was been determined through a thematic analysis of the Process Models.

The carer/family/significant other domain has been incorporated into the client domain, as it was found that the processes were not substantially different from those of the client domain.

4.3.1.1 Client

4.3.1.1.1 Baseline

Description of the client overview process map

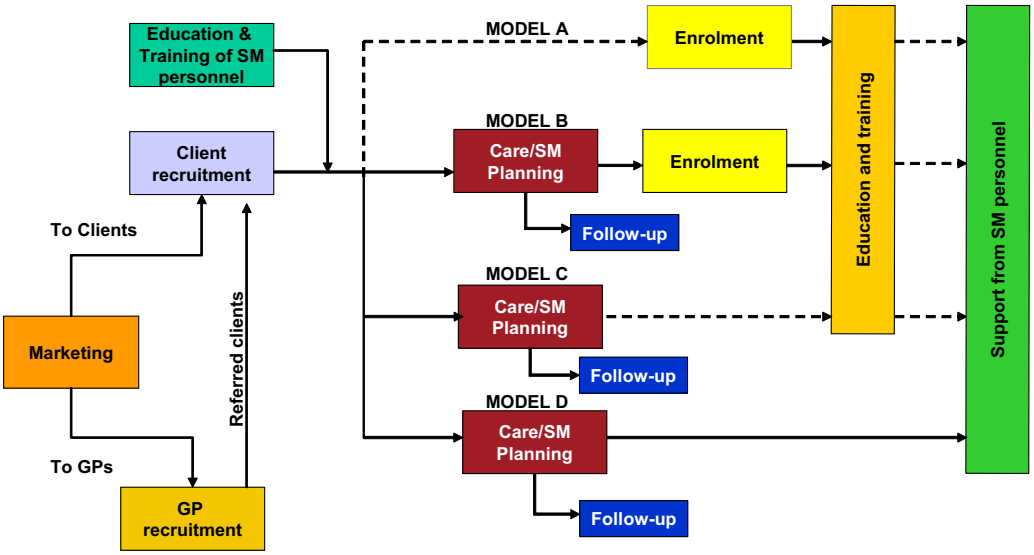
The overview process map for the client domain at baseline is shown in Figure 8.

From the baseline client overview process map, it is possible to see that all of the DPs did some form of marketing to clients and client recruitment. One way DPs recruited clients were through the recruitment of GPs, who then recruited clients. The role of the GP is discussed further on in this Section, in the HSP domain. The other method for marketing, and undertaken by all DPs, was for the DPs to market directly to the clients.

At baseline, the education and training of self-management personnel could occur prior to client recruitment, be ongoing or be some combination of the two.

After the marketing and recruitment of clients, there was some differentiation in the processes undertaken by the DPs resulting in four distinct Process Models (A, B, C and D) being developed, each of which are described below.

Figure 8 Non-Indigenous overview process map for the client domain at baseline



Description of the client Process Models

The four Process Models at baseline are described below.

Process Model A

Following recruitment into the DP, clients were enrolled into formal education and training, that is, a Stanford CDSM course. For those clients in Process Model A who did not wish to participate in the Stanford course, these clients received informal education and training via information brochures/fact sheets/pamphlets relating to their condition. Support from self-management personnel was not a key feature of Process Model A, but was offered to clients in varying degrees. Model A was the only Process Model not to have some form of care/self-management planning.

Within Process Model A at baseline, an example of variation in process between the DPs in the Process Model was for the theme: *nature of support form self-management personne*l, as one DP offered formal and regular support whilst the other DP offered informal support on an ad hoc basis.

An example of similarity in process within Process Model A was for the theme: *marketing strategy and implementation*, as both DPs utilised an external marketing resource, with some input from DP staff to develop the marketing strategy. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model B

The DPs in Process Model B included a care/self-management planning process as the first key step after client recruitment, which was then followed by enrolment into a Stanford course. Process Model B was the only one of the care/self-management planning Models also to have an enrolment component. The care planning process involved some degree of formal follow-up, and all clients received some degree of support from self-management personnel, for example follow-up phone calls or referral to support groups.

Within Process Model B at baseline, an example of variation in process between the DPs in the Process Model was for the theme: *basis of education and training for self-management personnel*. Variation existed as one DP undertook DP initiated and adopted training, where as the other DP undertook broad based training that was not necessarily offered by the DP.

An example of similarity in process between the DPs in Process Model B existed for the theme: *availability of support from self-management personnel*, as both DPs in the Process Model placed clear limits on the availability of support offered to clients. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model C

As for Process Model B, the first key step for clients following recruitment into the DP was a care/self-management planning process. The care/self-management process involved some degree of follow-up. The clients in Process Model C then had the option of participating in a Stanford course, however there was no formal enrolment process into the course. All clients received varying degrees of support from self-management personnel.

An example of variation in process between the DPs in Process Model C was for the theme: *determinants of client education and training*. As training of clients for one of the DPs was a fundamental, intrinsic and standardised activity which all clients received, whereas training was based on client need for the other DP.

At baseline, an example of similarity in process for the DPs in Process Model C was for the themes around the *role, timing, formality and follow-up of the care planning process*. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model D

Process Model D was the third Process Model to include a care/self-management planning process, and some degree of follow-up. The distinguishing feature of this model was that all clients then received support from self-management personnel via a telephone coaching model that was

based upon the Stages of Change framework (24). The coaching model aimed to develop self-management capacity over time, facilitate access to services and promote a partnership with GPs. The coaching model involved monthly telephone contact over a period of 12 months. Process Model D was the only Process Model not to offer formal education and training to clients, such as a Stanford course.

As there was only one DP within Process Model D, the identification of examples of variation and similarity was not applicable.

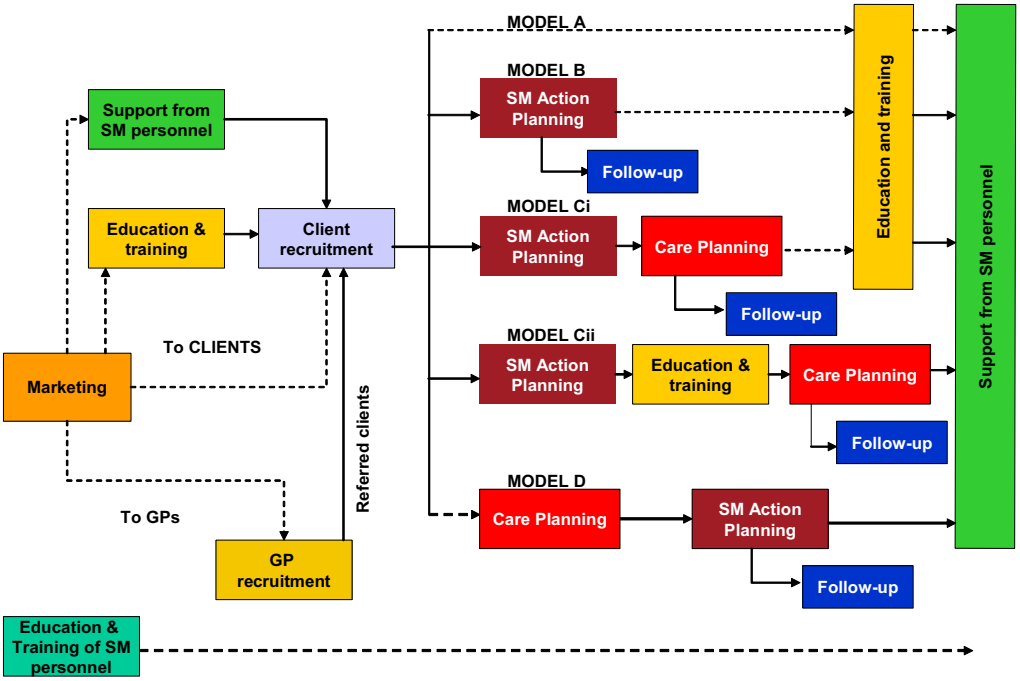
4.3.1.1.2 Middle measurement point

Description of the client overview process map

The overview process map for the client domain at the middle of the DP is shown in Figure 9.

The middle of DP overview process map identifies that the DPs had made various changes and refinements to their processes from baseline. These changes reflect the fact that baseline was what the DPs anticipated they would do, where as the middle measurement point reflects what was actually done by the DPs in response to the demands they have faced. This resulted in the points of diversion (Process Models) increasing from four to five.

Figure 9 Non-Indigenous overview process map for the client domain at the middle measurement point



Changes from baseline to the middle measurement point

When comparing the processes in place for the DPs at the middle measurement point (Figure 9) with those at baseline (Figure 8) a number of clear themes emerged:

- **Client marketing and recruitment:** between baseline and the six month measurement point, many of the DPs had explored more diverse ways of reaching their client base in order to increase the number of clients recruited into the DPs. At baseline, marketing to clients was achieved via marketing either directly to the target population or by seeking referrals from GPs who had been recruited to the DP self-management program. By the six month measurement point, many of the DPs had sought to recruit participants who were taking part in DP-led initiatives (for example, support groups or Stanford training), but who were not yet recruited into the DP self-management program. Hence the 'Support from self-management personnel' and 'Education and training' processes in the overview process map could now occur prior to formal recruitment. However, some of the DPs were also becoming more targeted in their approach to recruiting clients, such as targeting specific groups of interest to the DP (for example, those from CALD backgrounds).

- **GP recruitment:** reflecting the changing marketing focus and the difficulties that were experienced by DPs in recruiting GPs into their self-management programs, most of the DPs at the middle data measurement point had stopped actively trying to recruit GPs into the DP self-management program for client referral purposes.

- **Education and training of self-management personnel:** at baseline, the education and training of self-management personnel occurred prior (or very close) to the recruitment of clients into the DP self-management program was a pre-requisite for all DP staff. This was the case irrespective of whether the training was one-off or ongoing in nature. At the middle data measurement point, with the core education and training of self-management personnel already completed, any ongoing education and training was DP specific, reflecting the individual DPs commitment to continuing staff development and/or DP self-management program needs. To reflect this, the process now runs alongside the overview client process map instead of being an integral part of the overall client process which was the case for baseline.

- **Enrolment:** the enrolment process was no longer included as a separate process in the middle overview process map since enrolment into a course was not a clearly distinguishing feature of a given Process Model where formal education and training occurred. To reflect this, the process was incorporated into the education and training process.

- **Care/self-management planning:** the distinction between self-management planning and care planning became more evident at the middle process mapping visit. This was due to the DPs being able to more easily define the scope of their client self-management planning processes. This was due, in part, to the DPs success or otherwise in engaging HSPs into the process and the extent to which the HSPs would be involved in the care/self-management planning process. Most of the DPs had intended to have some formal care planning process at the outset, with the MBS item thought to be an important incentive for GPs, however the lack of GP engagement meant that this was not feasible for many of the DPs. So, whilst most of the DPs undertook a degree of post recruitment self-management planning with clients to help them set their self-management goals, not all of the DPs had a formal care planning process with the involvement of a HSP. Reflecting this refined version of self-management planning, the self-management planning and care planning processes have been separated. This distinction between self-management and care planning, also resulted in some DPs moving into a different Process Model at the middle measurement point.

- **Education and training of clients:** as previously mentioned, in order to increase recruitment numbers, some DPs began to recruit DP participants through DP led initiatives, resulting in some clients receiving education and training prior to formal recruitment into the DP. Another instance whereby clients received education and training at a different point in time was when there was community response to the Stanford course, and the community took on the running of the course. This resulted in those clients participating in community initiated courses sometimes receiving their education and training prior to having their care plan developed.

Description of the client Process Models

The five Process Models that had evolved at the six month measurement point are described below.

Process Model A

Process Model A remained primarily the same as for baseline. Support from self-management personnel was not a key feature of Process Model A, however, client demand for support following education and training resulted in the DPs offering support to clients in varying degrees.

An example of variation in process between the DPs in Process Model A was for the theme: *determinants of client education and training*. As training of clients for one of the DPs was a fundamental, intrinsic and standardised activity which all clients received, whereas training was based on client need for the other DP.

At the middle measurement point, an example of similarity in process for the DPs in Process Model A was for the theme: *focus of the marketing strategy*. As all the DPs in Process Model A marketed directly to clients, with some marketing undertaken directly to HSPs. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model B

At the middle measurement point, one of the DPs from Process Model C moved to Process Model B, due to the distinction between the care and self-management planning processes becoming clearer. The DPs in Process Model B, included a self-management planning process as the first key step after client recruitment, this was then followed by enrolment into a Stanford course, and then education and training. The self-management planning process involved some degree of follow-up for all clients, such as a review, and clients received some degree of support from self-management personnel, for example, support groups or information sessions.

An example of variation of processes between the DPs in Process Model B was for the theme: *education and training of self-management personnel*, as one DP undertook the training prior to the recruitment of clients, whilst the other DP undertook training on an ongoing basis.

An example of similarity in process in Process Model B at the middle measurement point was for the themes: *initiation and availability of support*. The reason being the majority of support to clients was DP initiated with clear limits placed on the availability of support. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model Ci

At the middle measurement point, one of the DPs from Process Model B moved to Process Model Ci due to the distinction between the care and self-management planning processes becoming clearer. As for Process Model B, the first key step for clients following recruitment into the DP was a self-management planning process, this was then followed by care planning. The care and self-management planning process involved some degree of follow-up for all clients, such as a review. The clients in Process Model C then had the option of participating in a Stanford course. All clients received varying degrees of support from self-management personnel, for example exercise classes or follow-up phone calls.

The theme: *timing of care planning* was an example of variation in process for the DPs in Process Model Ci at the middle measurement point. As one DP in the Process Model completed the care plan at the time of recruitment, whilst the other DP developed the care plan over the course of the DP self-management program (with some elements being completed at recruitment).

An example of similarity in process for Process Model Ci was for the themes: *the role and timing of self-management planning*, as self-management planning for all DPs in the Process Model was an intrinsic part of the DP self-management program that was completed at the time of recruitment. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model Cii

Process Model Cii was a new Process Model that had evolved at the middle measurement point, and is the second Process Model running out of one of the DP self-management programs. For clients in Process Model Cii, the first key step for clients following recruitment into the DP was a self-management planning process, this was then followed by education and training (Stanford course) and the development of a care plan. The care and self-management planning process involved some degree of follow-up for all clients. Clients received varying degrees of support from self-management personnel, for example, follow-up phone calls.

No examples of variation and similarity in process could be identified for Process Model Cii, as there was only one DP in the Process Model.

Process Model D

Process Model D remained unchanged at the middle measurement point. No examples of variation and similarity in process could be identified for Process Model D, as there was only one DP in the Process Model.

4.3.1.1.3 Last measurement point

Description of the client overview process map

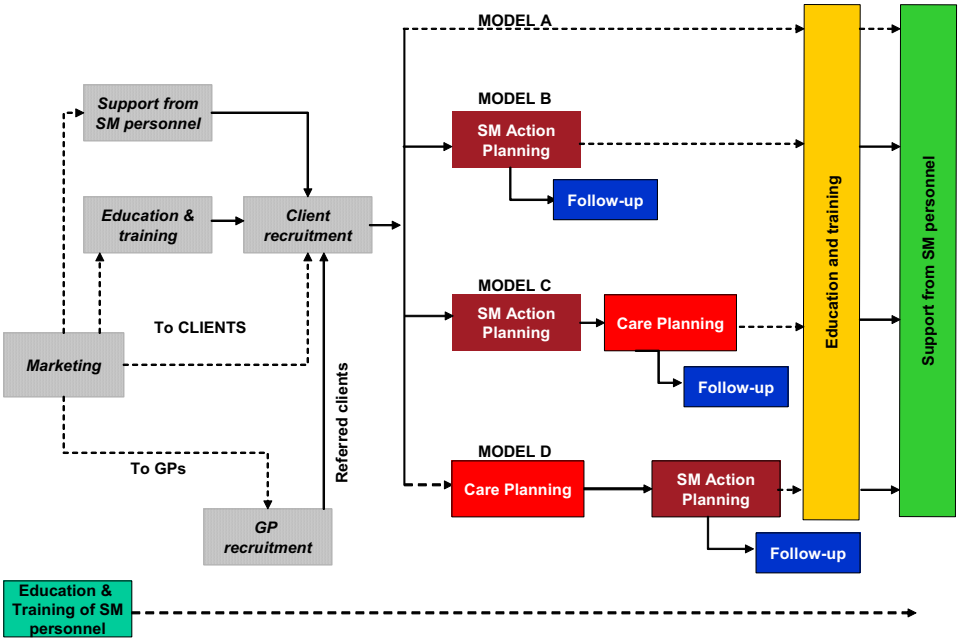
The last overview process map for the client domain is shown in Figure 10.

The last overview process map signalled again the changing focus of the DPs, as the self-management programs came to a close. At the baseline and middle of DP measurement points, the focus of the DPs had been across the entire range of processes identified in the overview maps. However, at the last measurement point the DPs focus had moved away from the client marketing and recruitment processes. Many of the DPs were no longer actively recruiting participants to their self-management programs and were concentrating on the client intervention processes, such as education and training and support from self-management personnel.

The number of Process Models at the last measurement point had decreased from five Process Models at middle to four. The reason for this being, at the middle measurement point Process Model Cii had evolved due to the community uptake and running of the Stanford course, and therefore some clients in one DP were receiving education and training prior to the development of their care plan. By the last measurement point this was no

longer the case as the majority of clients in that DP had been discharged from the self-management program, and the DPs were now offering the interventions to participants who were not recruited into their self-management program, based upon Process Model C.

Figure 10 Non-Indigenous overview process map for the client domain at the last measurement point



Changes from the middle measurement point to the last measurement point

When comparing the processes that were in place at the middle measurement point (Figure 9) and the last measurement point (Figure 10), there were some clear themes emerging:

- **Marketing and recruitment:** reflecting the fact that the DPs were coming to the closing stages of their self-management programs, many of the DPs had ceased their marketing activities for recruitment into the program, however many of the DPs were seeing the benefits of word of mouth as a method of marketing. Recruitment activities relating to DP self-management program interventions, such as education and training or support groups, in some cases were still being marketed, but direct marketing for recruitment to participate in the self-management programs was no longer active. In fact, some of the DPs had discharged clients from their self-management programs, or were putting their disengagement strategies into place.

  Following the middle measurement point, one of the DPs had began a nine month intervention that was open to non DP participants, that was based upon the interventions offered to DP participants.

Therefore, marketing and recruitment were still active in this case, but it was no longer specific to the DP self-management program.

- **GP recruitment:** the recruitment of GPs for client referral purposes had been completed by the last measurement point. GP involvement in the client related processes at this stage was purely for care planning and care plan follow-up purposes.

- **Education and training of self-management personnel:** by the closing stages of the DP self-management programs, the majority of the core education and training of self-management personnel that was generally standard across the DPs had been completed. Any education and training of self-management personnel that occurred after the middle measurement point, was likely to be DP specific education and training and generally had quite a broad health focus.

- **Care/self-management planning process:** for the majority of clients, the development of a self-management plan and/or a care plan had been completed by the last measurement point. Reflecting this, the DP focus changed from getting the self-management and care plans completed, to the follow-up and review of both the self-management and care plans. This review process may or may not have involved a GP or another HSP. As part of the disengagement strategy for those DPs who had a care/self-management planning process, which did not involve the direct involvement of a GP, clients were encouraged to take their self-management and/or care plan to future visits to their GP and be pro-active in engaging their GPs to take on the self-management/care planning process.

- **Education and training of clients:** at both the baseline, and middle measurement points, whilst there was 'other' non self-management education and training offered to clients across the Process Models (except for Process Model D at baseline and middle), the primary focus had been on educating clients with the Stanford CDSM course. By the last measurement point, substantial proportions of clients had participated in the Stanford course, and were wanting to attend more group education. In response to this demand from the clients, the majority of the DPs introduced a range of education and training options for clients to participate in, such as disease specific education, tai chi, cooking courses, computer and internet training and supermarket shopping tours. This included Process Model D, which formally did not previously focus on informal education and training

- **Support from self-management personnel:** much like the increased scope of education and training at the last measurement point, the scope of support from self-management personnel had also increased since the middle measurement point across all Process Models. During the last six months of the DP self-management programs, many of the participants had received the full range of interventions

on offer and wanted to continue to receive support within the environment of the self-management programs. Previously the primary means of support on offer to clients was via support groups, which had either grown out of the Stanford courses or were already community established support groups along with limited other options (such as newsletters, self-management personnel contact and referral to other services). This had extended to a range of options by the last measurement point, including walking groups and buddy support systems.

Description of the client Process Models

The four Process Models at the last measurement point are described below.

Process Model A

Process Model A remains the same as for middle. Nevertheless, due to client demand, there was an increased emphasis on client support compared with the middle measurement point.

Examples of variation in process at the last measurement point remained unchanged from those described at the middle measurement point.

An example of similarity in process for the DPs in Process Model A at the last measurement was for the theme: *development and implementation of the marketing strategy*. This was due to the marketing approach being developed and implemented drawing on the internal expertise of DP personnel by both DPs in Process Model A. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model B

The processes for Process Model B remained the same as for middle, however, there was a shift in focus from client marketing and recruitment strategies to the client intervention processes.

An example of variation in process between the DPs in Process Model B was for the theme: *determinants of client education and training*. The reason being that client training was a fundamental, intrinsic and standardised activity which all clients received for one of the DPs in the Process Model. For the remaining DP, the majority of training was based on client need, with some standardised components.

Within Process Model B, an example of similarity in process was for the themes: *nature, initiation and availability of support from self-management personnel*. This is due to all DPs in the Process Model having a framework in place for support, where the majority of support was DP initiated, and there were clear limits placed on the availability of support to clients. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model C

The processes for Process Model C remained the same as for Process Model Ci at middle, however, there was a shift in focus from client marketing and recruitment strategies to the client intervention processes.

Examples of variation and similarity in process at the last measurement point remained unchanged from those described for Process Model Ci at the middle measurement point.

Process Model D

Process Model D now had an increased emphasis on informal education and training processes, which has evolved from client demand.

No examples of variation and similarity in process could be identified for Process Model D, as there was only one DP in the Process Model.

4.3.1.2 Community

4.3.1.2.1 Baseline

Reach, health promotion, health planning; and support from the DP were the four processes describing community involvement identified in the NEF. At baseline, this distinction was too specific or not appropriate for many of the DPs since the concept of community was still at an early stage of development for the majority of them.

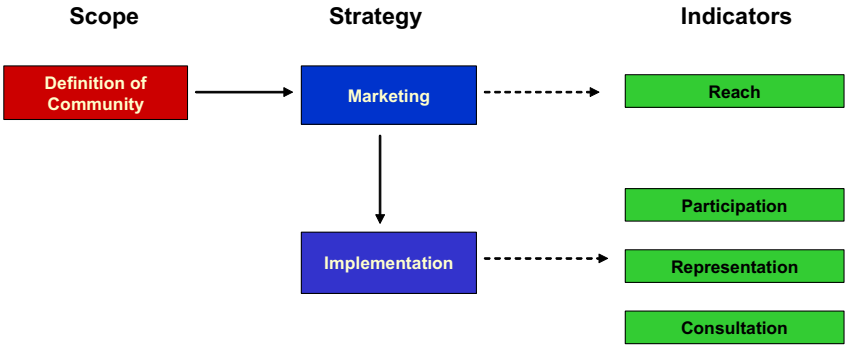
Since the concept of community and its engagement were still at a very early stage of development, even though some of the DPs were intending to target specific groups within the community (for example, those from CALD backgrounds), no "overview process map" could be drawn. Nevertheless, it was possible to take a snapshot of what the DPs had done to date in the way of community involvement, taking an essentially generic and broadly descriptive approach.

Description of the processes of community involvement

Taking this approach to the community domain, Figure 11 was developed in order to capture the following processes of community involvement at baseline:

- A DP specific description of how community was defined;
- The nature of the marketing strategies that were used to engage the community;
- The subsequent implementation strategies; and
- A description of the indicators of success of these strategies, which are reach, participation, representation; and consultation.

Figure 11 Non-Indigenous processes of community involvement at baseline



However, the extent to which the DPs engaged the community in the processes presented in Figure 11 was wide ranging. This range in variation in the DPs approach to community engagement reflected their strategic thinking towards community at baseline, and was highlighted by the thematic analysis described below.

An example of variation in process for the baseline community Process Model was for the theme: *scope of community*. The reason being that community for some DPs was client/individual driven, and community for other DPs focused on a whole of community approach.

For the DP that undertook a whole of community approach, one of the key features that distinguished it from the other DPs, was their focus on developing community groups to enable the groups to continue to provide self-management support to community members after the completion of the DP.

In the baseline community Process Model, the processes whereby the DPs were most similar was for the theme: *participation as an indication of implementation* (i.e. the level of integration of the community into the DP). For some of the DPs, community played a role in decision making or there was some community consultation, and for some of the other DPs the community had a key role in decision making and there was continual community consultation. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

4.3.1.2.2 Middle measurement point

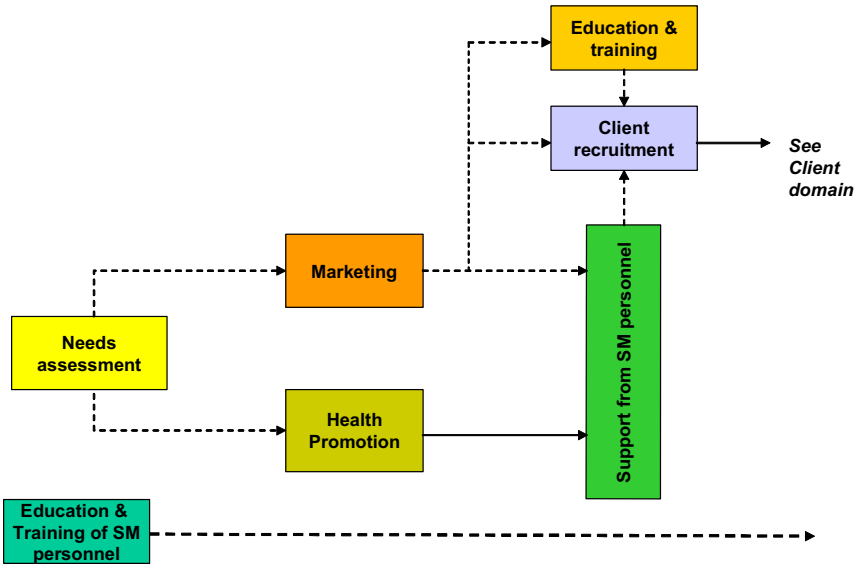
Description of the community overview process map

The middle of DP overview process map for the community domain is shown in Figure 12.

At the middle data measurement point, it was possible to take the broad areas identified at baseline and develop an "overview process map". The single Process Model not only reflects those DPs which had a clear community to which they were marketing, but also includes the other DPs who recognised

at this stage that community engagement (to a greater or lesser degree) was an important way of recruiting clients into the program.

Figure 12 Non-Indigenous overview process map for the community domain at the middle measurement point



Change from baseline to the middle measurement point

When comparing the processes in place for the community at the middle measurement point (Figure 12) with those at baseline (Figure 11), a number of clear themes emerged:

- **Needs assessment:** all of the DPs had undertaken some analysis of the community's needs or 'interest' in the concept of self-management. Some DPs, depending upon their focus (for example, client or community), adapted their education and training of self-management personnel to reflect this needs assessment, prior to commencing marketing.

- **Marketing and health promotion:** the process map separates into two clear strategies following the needs assessment. The majority of DPs pursued a marketing strategy with a view to recruiting clients. However, the DP with a 'whole of community' focus also pursued health promotion activities (for example, health related workshops), with a view to raising the awareness and importance of self-management at the wider community level. The pursuit of a health promotion process or not, was the main distinguishing feature between DPs who had a whole of population approach to community engagement, compared to those DPs which did not have this approach.

- **Support from self-management personnel:** most DPs at this stage provided support to the community on an ongoing basis, for example, funding, education and the development of skills.

- **Client recruitment:** several of the DPs were able to successfully engage community groups from CALD backgrounds (for example, Polish, Arabic and Spanish) and offer part of, or the full range of interventions which ran in parallel to the mainstream clients, this included a translated version of the Stanford course in each of the CALD communities.

Description of the community Process Model

An analysis of the need or interest of the community in self-management was undertaken by all DPs (however the depth of the analysis varied). All of the DPs then marketed to the community for the purpose of raising the awareness of the DP and self-management. At the middle measurement point, only one DP pursued a dual marketing/health promotion strategy, and all of the DPs then provided some support from the self-management personnel to the community. The education and training of self-management personnel was ongoing. The overview also shows the linkage with the client recruitment and education and training processes.

An example of variation in process between the DPs in the middle community Process Model was for the theme: *structure of the implementation strategy*. The reason being that some DPs undertook a strategic approach to reaching the community, whilst other DPs undertook a more progressive approach to reaching the community.

Examples of similarity in process at the middle measurement point remained unchanged from those described at baseline. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

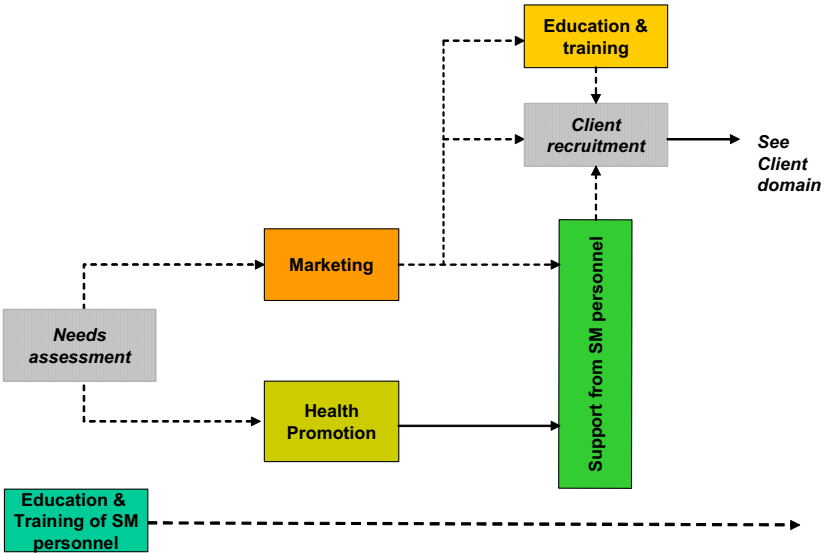
4.3.1.2.3 Last measurement point

Description of the community overview process map

The last overview process map for the community domain is shown in Figure 13.

The last overview process map for the community domain remains predominately unchanged from that described at the middle measurement point.

Figure 13 Non-Indigenous overview process map for the community domain at the last measurement point



Changes from the middle measurement point to the last measurement point

When comparing the processes in place for the community at the middle measurement point (Figure 12) with those at the last measurement point (Figure 13), a number of clear themes emerged:

- **Needs assessment:** assessments of community wide need were no longer taking place, rather needs were being assessed on a smaller scale, for example, the need of a community organisation or a particular CALD group within the community.

- **Education and training of self-management personnel:** see changes for the last measurement point for the client domain in Section 4.3.1.1.3 for details.

- **Health promotion:** some of the DPs who had not implemented a health promotion strategy, had begun to undertake some health promotion activities in the later stages of the DP self-management program. For example, health fairs and disease specific awareness sessions, which primarily aimed to continue to raise the awareness of self-management, and provide the community with alternate pathways for accessing self-management once the DP self-management programs were no longer in place.

- **Client recruitment:** reflecting the fact that the DPs were coming to the closing stages of their self-management programs, client recruitment had stopped. See changes for the last measurement point for the client domain in Section 4.3.1.1.3 for more detail.

Description of the community Process Model

Needs analysis on a community wide basis were no longer taking place. All of the DPs then marketed to the community for the purpose of raising the awareness of the DP and self-management, whilst undertaking elements of health promotion (for example, pamphlet distribution, supermarket tours and health workshops) and all of the DPs then provided some support from the self-management personnel to the community. The education and training of self-management personnel was ongoing and the overview also shows the linkage with the client education and training process.

An example of variation in process between the DPs in the last community Process Model was for the theme: *nature of the implementation strategy*. The reason being that some DPs were actively trying to integrate the community into their self-management program, where as other DPs made contact with the community for certain purposes only (for example, client recruitment).

Examples of similarity in process at the last measurement point remained unchanged from those described for the middle Process Model. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

4.3.1.3 Health Service Provider

4.3.1.3.1 Baseline

Description of the HSP overview process map

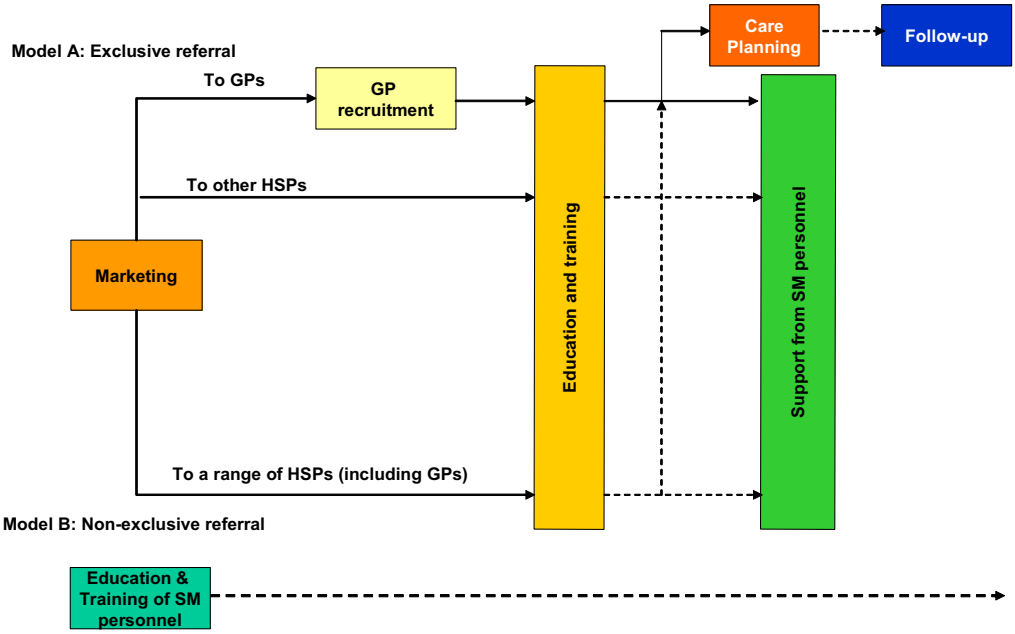
The baseline overview process map for the HSP domain is shown in Figure 14.

As for the client domain, the analysis mapped out at a high level how the processes for the HSPs linked together. For HSPs at baseline there were in essence two Process Models, with the main distinction between the two being whether the DP was seeking to recruit their clients exclusively through GPs or not.

All of the DPs provided some degree of education and training for HSPs together with a level support from DP personnel, irrespective of which Process Model was being followed.

The overview process map also shows the linkage with the client care planning and follow-up processes, which were discussed in the previous Section. Again, both Process Models incorporated a degree of care planning and follow-up.

Figure 14 Non-Indigenous overview process map for the HSP domain at baseline



Description of HSP Process Models

Process Model A

Those DPs who were in Process Model A were seeking to recruit clients through exclusive GP referral. For these DPs there were two complementary process pathways. Firstly, they needed to market to GPs in order to recruit the GPs, whilst they also marketed to a range of other HSPs in order to raise awareness about the benefits of self-management and the DP self-management program itself. Following the marketing process and the recruitment of GPs, the HSPs and recruited GPs received education and training, they may or may not have been involved in the care/self-management planning process and received some degree of support from the DP personnel.

An example of variation in process for those DPs in Process Model A was for the theme: *approach to the recruitment of GPs*. The reason being that some DPs in the Process Model utilised existing networks to recruit GPs, where as some other DPs had to undertake a new networking process to engage GPs.

Within Process Model A, an example of similarity was for the theme: *timing of HSP education and training*, as all DPs in the Process Model provided training for HSPs prior to the recruitment of clients. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

Process Model B

If the DP was expecting non exclusive referral from HSPs, the marketing was much broader and could cover both a recruitment focus and/or an awareness

raising focus. This was then followed by education and training and a degree of support from the DP personnel. The HSPs in Process Model B may or may not have been involved in the care/self-management planning process for clients.

An example of variation in process for those DPs in Process Model B was for the theme *marketing mechanism*. The reason being that some DPs undertook a strategic and structured approach to marketing implementation, compared with those DPs in the Process Model who took an unstructured and informal approach to marketing.

An example of similarity in process within Process Model B was for the theme: *purpose of marketing*. The reason being that the aim of the marketing strategy for all DPs in the Process Model was to increase HSP awareness of the benefits of self-management and to encourage client referrals. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

4.3.1.3.2 Middle measurement point

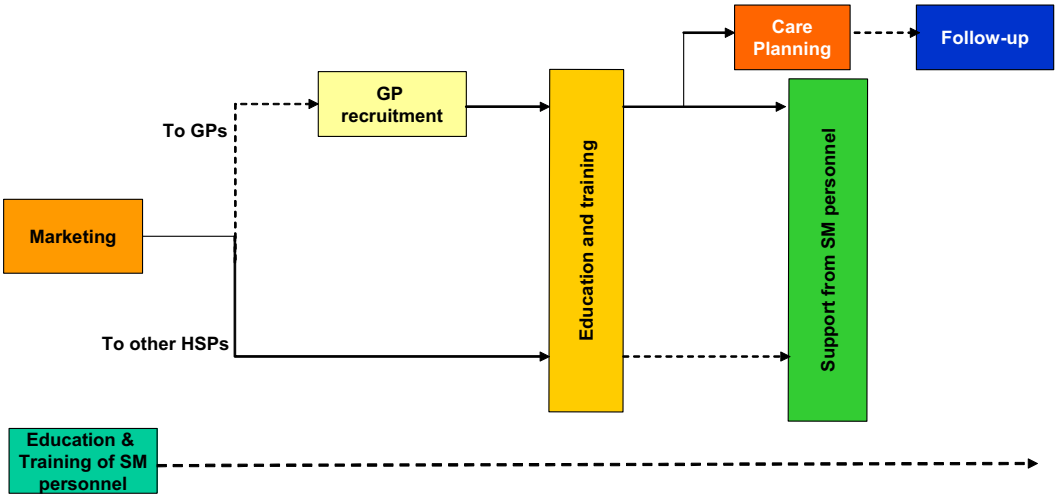
Description of the HSP overview process map

The overview process map for the HSP domain at the middle of the DP is shown in Figure 15.

At the middle measurement point, there was essentially one Process Model for the HSP domain. This was due to the fact that the DPs were no longer actively trying to recruit GPs for the purpose of client recruitment, reflecting the difficulty experienced by the DPs in engaging GPs in their self-management programs.

For this reason, all DPs were able to be grouped into the one Process Model. The overview also shows the linkage with the client care/self-management planning and follow-up processes.

Figure 15 Non-Indigenous overview process map for the HSP domain at the middle measurement point



Changes from baseline to the middle measurement point

When comparing the processes in place for the HSPs at the middle measurement point (Figure 15) with those at baseline (Figure 14), the emerging themes were:

- **GP recruitment:** the key difference between the baseline and middle measurement points for both the client and HSP domains was that none of the DPs were trying to recruit clients exclusively through recruited GPs, reflecting the difficulty that the DPs experienced in engaging enough GPs into their self-management program, and being able to obtain enough referred clients through those GPs. However, successful strategies for the engagement of GPs included the utilisation of established GP relationships with the DP and GP incentives. Where there was no previous relationship with a GP, it was necessary for the DPs to allocate a significant amount of time to developing a relationship with the GPs, before they would consider participating in the DP self-management programs. Another way in which GPs were engaged successfully was through the use of a proactive GP champion or advocate of the DP self-management program. This champion promoted the DP and the concept of self-management within the GP community.

- **HSP engagement:** due to the difficulty experienced by the DPs in engaging GPs, there was an increasing focus on targeting marketing strategies to a wide range of HSPs. This resulted in the majority of the DPs self-management activity was generally undertaken by other HSPs other than GPs (for example, nurses, health educators and other Allied Health Professionals). The role of these HSPs in the DPs was broad and ranged from client referral, to education and support to active participation on DP committees.

- **Education and training:** as a result of the difficulty in engaging GPs, the DPs shifted their focus to the education and training and awareness raising of HSPs.

Description of the HSP Process Model

At the middle measurement point, there was essentially one Process Model for the HSP domain reflecting the fact that the DPs were no longer actively trying to recruit GPs for the purpose of client recruitment.

Marketing in the middle HSP Process Model was to a broad range of HSPs, for the purposes of recruitment and awareness raising, with GP recruitment occurring on an ad hoc basis. Following on from the marketing and recruitment processes, all of the DPs then provided some degree of education and training for HSPs, together with a level of support from DP personnel. The overview also shows the linkage with the client care/self-management planning and follow-up processes.

An example of variation in process between the DPs in middle HSP Process Model was for the theme: *aim of education and training of HSP*. The reason being the aim of HSP training for some DPs was for the use of the techniques by the HSPs in their daily work practices, while, the aim of the training for other DPs was to raise awareness only.

In the middle HPS Process Model, an example of similarity in process was for the theme: *participation of HSPs in education and training*, as all the HSP training offered by the DPs was voluntary. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

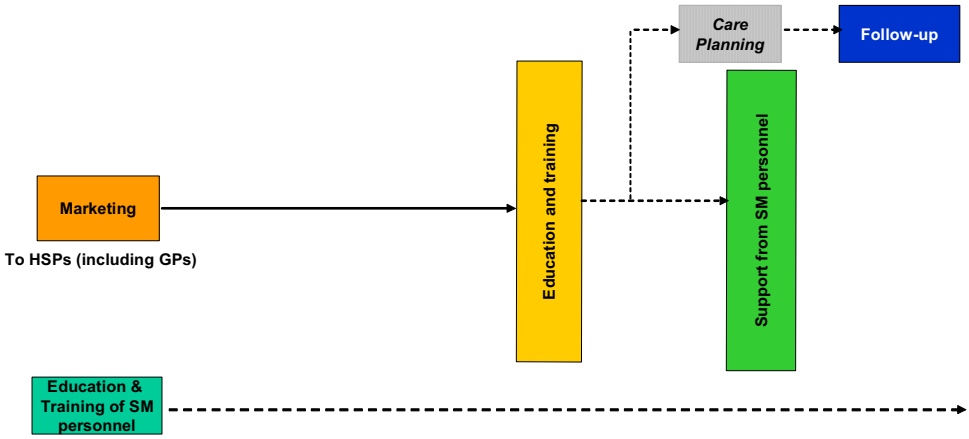
4.3.1.3.3 Last measurement point

Description of the HSP overview process map

The last overview process map for the HSP domain is shown in Figure 16.

The HSP overview process map for the last measurement point, remained predominantly unchanged from that described at the middle measurement point, the key difference being that no DPs were recruiting GPs for client recruitment purposes. The overview also shows the linkage with the client care/self-management planning and follow-up processes.

Figure 16 Non-Indigenous overview process map for the HSP domain at the last measurement point



Changes from the middle measurement point to the last measurement point

When comparing the processes in place for the HSPs at the middle measurement point (Figure 15) with those at the last measurement point (Figure 16), the emerging themes were:

- **Marketing:** marketing to HSPs at the middle measurement point was focussed evenly on client recruitment and awareness raising of self-management and the DPs. The focus of the marketing strategy for all DPs had shifted away from client recruitment (as described for the last measurement point for the client domain), and was largely directed at raising the awareness of the benefits of self-management, building the profile of the DP in the HSP domain and encouraging HSP participation in education and training.

- **GP recruitment:** at the last measurement point no DPs were actively seeking to recruit GPs for the purpose of client recruitment. However, GPs were still being engaged in the DPs for education and training purposes and to partake in the care/self-management planning process.

  Some DPs were at the stage of disengaging GPs who had actively participated in the DP self-management program, as part of DP wind down. These GPs were asked to provide their continuing support to the DP and in actively managing the self-management of their client.

- **Education and training:** at the middle data measurement point, the majority of the education and training on offer to HSPs was the core education and training, with a limited selection of broader options being made available by the DPs. At the last measurement point, many of the HPS, who had been involved with the DPs since the early stages, had already undertaken the core education and training. So

this led to the DPs offering a broader range of education and training options in the later stages of the self-management programs, such as Tai Chi training and motivational interviewing etc.

- **Care/self-management planning:** as described in the client domain for the last measurement point, participation in the care/self-management planning process by HSPs in the later stages of the DP self-management programs was primarily for the follow-up of the care or self-management plans, rather than their development, this was due to the majority of clients across the DPs being in the last stages of their intervention and were only requiring follow-up and reviews of their plans.

Description of the HSP Process Model

Marketing was to a broad range of HSPs (including GPs), primarily for the purpose of awareness raising, for both the DP self-management programs and the benefits of self-management. In addition, there was less focus on marketing for recruitment purposes, as many of the DPs were no longer actively seeking client recruitment. All of the DPs then provided some degree of education and training for HSPs, together with a level of support from DP personnel. The overview also shows the linkage with the client care/self-management planning and follow-up processes.

An example of variation in process within the last HSP Process Model was for the theme: *type of HSP education and training*. The reason being that only the core education and training was offered to HSPs by some DPs, while other DPs offered a suite of self-management education in addition to the core education and training.

An example of similarity in process existed for the theme: *implementation of the marketing strategy*, as all DPs in the Process Model drew upon the expertise of DP personnel to implement the strategy. See the thematic analysis in Appendix 25 for more detail on variations and similarities.

4.3.1.3.4 Summary of the non-Indigenous process mapping

The key themes that arose from the non-Indigenous process mapping across all domains (client, HSP and community) at the baseline, middle and last measurement points were:

- **DP responsiveness to recruitment issues:** the DPs faced a number of issues relating to the recruitment of both clients and HSPs, in particular GPs. Those DPs who intended to rely primarily on GPs for the referral of clients, were required to open up the DP to self-referrals, or needed to increase their focus on self-referrals. As a result, the DPs were continually developing their methods for marketing directly to clients. Those marketing strategies which proved most successful were those that were targeted to specific

groups for example, CALD. In addition, as the DPs progressed, word of mouth became an increasingly successful method of marketing.

- **Changes in the DPs from baseline to middle:** at the middle measurement point it became clear that the baseline process mapping represented those processes that the DPs intended to implement. By the middle measurement point the DPs were able to more clearly define the scope of their processes, which had developed over the first six months of the DP in response to the demands they faced.

- **The increasing diversity within the Process Models across time:** reflecting the DPs responsiveness to client need, the diversity of the DPs, and subsequently the Process Models, increased over time. The reason being the DPs incorporated interventions and adapted their self-management programs to better meet clients' needs and support them in self-management.

- **The recruitment of GPs:** the DPs looked to engage GPs primarily for the purpose of client referrals and to provide input into the care planning process. However, the success of the DPs in engaging GPs did vary across the DPs, as did the reasons for success for example, utilisation of established GP relationships and GP incentives. Generally, the DPs reported that GPs were interested in the concept of self-management, however their busy schedules did not allow time for active participation in the DP.

4.3.2 Project Reports

The DPs were required to submit six monthly progress reports to DoHA. As a part of these reports, the national evaluator designed a project report template to help inform the national evaluator on key aspects of the process evaluation. The NT DP did not submit these attachments to DoHA or the national evaluator.

The information collected for the National Evaluation through the project reports was both quantitative and qualitative in nature. However, variation in the quality of these data, has led to only qualitative data being presented here.

Overall, the project reports have been used to provide support to the information provided from other data sources of the National Evaluation (for example, process mapping and focus groups), since the quality and detail of the reporting varied from DP to DP.

The following results are based upon the following domains:

- Clients;
- Carers;
- HSPs.
- Community;
- Health service system; and

As for the process mapping, the client and carer domains have been combined. This is because no significant differences existed between these two domains in regard to the accounts given by the DPs.

The submission of the project reports did not fall in line with other data measurement points. Also, as some of the processes (for example, client recruitment), occurred mostly in the early stages of the DPs, reporting these processes only occurred in the early stages of the DPs. As a consequence, aggregating the results of the data in terms of common themes was the most appropriate approach to reporting the findings.

The following is a synthesis of the key points by domain and process in the project reports which helped to promote the operationalisation of the DPs. Detailed barriers and facilitators to each of the domains and processes is in Appendix 26.

4.3.2.1 Client

Marketing/reach

Those marketing strategies which proved most successful were those that were targeted to specific groups of interest to the DP for example, CALD groups. This targeted approach was facilitated by ensuring marketing material was suitable for these groups.

Recruitment of clients

Successful recruitment of clients was a consequence of using skilled recruiters who were able to gain the trust of potential clients and inform other potential referral sources of the benefits of SHCI. Another successful strategy was for service providers to whom clients already had a trusted relationship, to make recommendations concerning SHCI to these clients. Recruitment of clients was made easier if it could occur opportunistically, for instance, when GPs either referred or recruited clients at the same time as a GP/client consultation.

Self-management, enrolment and education and training of clients

Activities such as self-management, enrolment and training of clients, were most successful when access issues were addressed, for example, undertaking courses at times and in places which were amenable to clients. Providing training and education in languages other than English also facilitated client participation in these activities. Other major facilitators included; clients being supported by family in order to attend courses and by training being undertaken by good course leaders.

Education and training of self-management program personnel

For self-management personnel to be able to attend self-management education and training, it was necessary to ensure that resources were

available to back-up staff who were to attend these courses. To assist in as many DP staff and participating HSPs to undertake training as possible, the uptake of different opportunities to provide training (for example, in-service sessions), was recommended.

Disease-specific education and training

Where disease-specific education and training was available, there were advantages to the training being provided in languages other than English (for example, Spanish, Polish, Chinese and Indigenous languages).

Care/self-management planning

A major facilitator to care and self-management planning was a strong working relationship between the DPs and service providers, including GPs. In this way, DPs were able to heighten the awareness of the advantages of self-management, reduce some of the time pressures on HSPs, and particularly in the case of GPs, increase their awareness and use of the EPC items.

Support from self-management program personnel

Client awareness of the support available was an important facilitator to their use of self-management personnel. By providing the opportunity to volunteers and community groups to be involved, DPs were able to provide another source of support to clients.

4.3.2.2 Community

Health promotion

The promotion and adoption of health promotion activities in the community was made problematic by the difficulty in engaging HSPs, in particular GPs. It was through that it would be made easier through some finance incentive being made to these providers.

Health planning

A concerted effort was required by some DPs to ensure the participation of HSPs to health planning activities. Health planning (for clients) was more effective when consumer based organisations were consulted for formal consumer and social health input.

Community support processes

Integrating DP interventions (such as care planning and self-management planning) into existing organisations contributed both to the sustainability of DPs intervention and provided further opportunities to these organisations.

Organisational development

Organisational development was facilitated by working closely with relevant State/Territory Departments, particularly in the area of policy direction. At a local level, the inclusion of key State/Territory health personnel on steering and advisory groups afforded the opportunity to discuss DPs at a policy and strategic level.

Workforce development

The development of the workforce was made easier by services and organisations keen to embed self-management practices into their workforce. In cases where effective communication strategies and networks were developed between DPs and their communities, this allowed for the transference of information on a wide range of topics. This information was best received when, for instance, it had been developed over time as a response to specific areas of concern raised by consumers and health workers.

4.3.2.3 Health service providers

Marketing/reach

Marketing to HSPs was facilitated through engaging champions to advocate on behalf of the DPs. This was particularly true when working with GPs. DPs found that every opportunity should be accepted in order to provide information to HSPs about SHCI.

Recruitment of HSPs

A strategy which worked well in the recruitment of HSPs was in the provision of incentives, for example free leadership training or financial incentives. As in the case of marketing/reach, using champions in the recruitment process also proved successful, along with one-on-one targeted recruitment.

Education and training of HSPs

Education and training of HSPs was facilitated by programming courses into the calendar year of organisations and services. It was important to recognise the feedback provided by HSP on the education and training courses was provided to them, and in turn update the courses accordingly.

Support of HSPs

Not all support systems offered to HSPs were necessarily adopted, for example case conferencing with GPs. Notwithstanding, it was important to offer assistance and in-service training as requested and wherever possible to provide peer support to less experienced HSPs.

4.3.2.4 Health service systems

Infrastructure development

Infrastructure development within the health service system was made difficult when DPs covered multiple-sites and when they were located in remote areas. It was therefore, important, that wherever possible the DPs tapped into locally based administration and data support.

Governance and management framework

Appropriate management and advisory groups, with suitable membership, facilitated good governance and management practice. Furthermore, with the appropriate membership, DPs were able link into other State/Territory initiatives and to some degree inform policy direction.

Integration

To facilitate the integration of self-management into the health service system, it required timely feedback of the findings to stakeholders. Integration was further promoted by DPs having appropriate membership on management, steering and advisory groups.

4.4 Impact and outcome evaluation results

This Section sets out the responses to DP self-management program implementation from the perspective of those primarily affected: clients, carers, HSPs and described the community. These responses can be measured in terms of impacts and outcomes. Impacts relate to such medium term effects as perceptions and experiences of the DP self-management program, health behaviour and attitudes regarding self-management. Outcomes relate to the longer-term health and wellbeing reported by participants. The data sources for the impact and outcome evaluations are set out in Table 30.

Table 30 Impact and outcome evaluation data sources

Evaluation component	Data source
Impact	• Focus groups • CIQ • CHQ
Outcome	• CHQ • CSUQ

The key informant interviews, which are also an aspect of the Impact evaluation, are discussed in the context of sustainability (See Section 4.6.2).

4.4.1 Satisfaction, perceptions and experiences of the DP self-management program

The impact evaluation results for the non-Indigenous DPs' focus groups are described below by domain; client, carer, HSP and community. For each domain, the overall themes of the focus groups and any changes over time from the baseline and middle to the last measurement points are outlined. These are described for each dimension headings identified in the NEF.

These results have been reported for focus groups by conducting a thematic analysis of information provided by each DP, followed by an aggregation of DP information to the national level.

The numbers of focus group participants nationally are listed in Table 31.

Table 31 Number of focus group participants nationally, by domain and measurement point

	Measurement Point		
Domain	**Baseline**	**Middle**	**Last**
Client (n)	67 •	78*	59* •
Carer (n)	25* •	10*	12* •
HSP (n)	24* •	26*	18* •
Community (n)	18* •	12* •	28* •

* Some DPs did not provide information for this domain at this measurement point

* • For each domain at each measurement point, there were some DPs who provided focus group information but did not state how many participants there were. Therefore, the totals for these cells are a minimum and will be larger than reported.

4.4.1.1 Client

4.4.1.1.1 Baseline

Overall satisfaction with the DP self-management program

At baseline, clients generally reported feeling positive about their respective DP self-management programs, describing them as useful and relevant.

Perceptions and experiences with self-management orientation/education and training

Some clients felt that the DPs had provided them with skills and information that had led to a reduction in isolation and had made them feel empowered and confident in managing their condition. Satisfaction was also expressed regarding course leaders who were described as empathic and approachable. These reports of enthusiasm and improved health management were encouraging at this early stage.

Some clients stated that they felt poorly informed when they joined their respective DPs and were unaware of the steps the DP self-management program would involve or the timing of these. This lack of knowledge about DP details may have been largely due to the fact that most respondents stated that they had heard about the DPs via word of mouth.

Perceptions and experiences of care and relationships with HSPs

There was variation in descriptions about relationships with HSPs (including GPs). Most clients stated that they were not confident that their HSP was adequately answering their questions or providing them with the information they required, resulting in them feeling ill-informed about their condition and its management. Despite this, clients generally felt that the DP self-management program was helping them to better communicate with their HSP.

Barriers

While most clients reported that the DP venues were accessible, difficulty with transportation to the venues was noted as the most common barrier to participation. Other than poor communication with HSPs, barriers to self-management stemming from the health service system were reported to include difficulties accessing required services due to extensive waiting lists and associated costs. These barriers are difficult for the SHCI DPs to influence given their scope.

4.4.1.1.2 Middle measurement point

Overall satisfaction with the DP self-management program

Clients continued to express satisfaction with DPs at the middle measurement point. High levels of satisfaction were especially associated with the culture of the groups and the highly regarded courses (training, coaching and Stanford).

Perceptions and experiences with self-management orientation/education and training

Clients reported that the DPs had impacted them positively as they:

- Felt more knowledgeable about their conditions and how to successfully manage them;
- Had increased their social interaction as a result of the DPs;
- Had made conscious efforts to exercise more frequently; and
- Had decreased their use of medication.

While clients reported that the DPs were impacting on their lives generally at baseline, impacts reported at the middle measurement point were more specific. The most positive impacts were reported by clients who were well informed, had several contacts in the DP and a care plan. Clients reiterated their baseline comments stating that staff were accessible and helpful.

At this middle measurement point, satisfaction with follow-up varied. Some clients stated that their DP self-management program did not have formal follow-up, others reported that there was not enough follow-up while others were very satisfied with follow-up they had received. Regardless of the level of follow-up clients had received and their associated satisfaction, all expressed enthusiasm in attending additional courses either self-management related or health related (for example, tai chi).

Perceptions and experiences of care and relationships with HSPs

The empowerment that clients reported feeling as a result of the DPs was considered to be integral in improving their interactions with their HSPs. Clients who had been unhappy with their HSP at baseline, discussed that they

had either begun asking more questions during consultations or they had felt confident enough to change to a more satisfactory provider.

Barriers

As was the case at baseline, clients noted access to public health services (for example, waiting lists) and financial restrictions as barriers to their ability to self-manage their health. At middle, they also reported difficulties with transportation as a barrier.

4.4.1.1.3 Last measurement point

Overall satisfaction with the DP self-management program

In line with responses from the two previous measurement points, at the last data measurement point, clients reported satisfaction with the courses and the opportunities for social interaction they provided. It was mentioned that this social interaction was especially useful as it helped clients realise that there were others worse off than themselves and others who understood their experiences.

Perceptions and experiences with self-management orientation/education and training

Clients reported that the DPs assisted them in managing their lives and their conditions, both physically and psychologically. These positive impacts were similar to those reported at the middle measurement point and included increased exercise, better nutrition and improved medication management. For those that did not report direct improvements to their health, they reported other benefits such as:

- Increased confidence;
- Increased motivation;
- Decreased isolation; and
- Increased empowerment.

The majority of clients stated that they felt these impacts would be long term. However, a few mentioned that they did not know if they could continue the behaviours learned through the DPs (for example, goal setting) without continued support.

As well as satisfaction with the content and outcomes of the DPs, clients expressed satisfaction with course leaders who were described as compassionate, knowledgeable, and friendly. It was generally felt that the leaders had a high level of commitment to the DP self-management program and the clients. The DP staff were reported to be accessible when clients required their assistance.

Satisfaction with follow-up continued to vary as it did during the middle measurement point and reservations about the DP were due to dissatisfaction with the 'academic' nature of questionnaires and their length.

Perceptions and experiences of care and relationships with HSPs

As with baseline and middle measurement points, levels of satisfaction with HSP relationships and the degree of communication that occurred within these relationships varied. Some clients felt they had become more assertive and empowered in discussions and more organised in obtaining information from their HSP. Although it appeared that the majority of clients felt that their interactions with HSPs had improved, it was frequently stated that HSPs did not take an active role in health promotion.

Barriers

Other than some dissatisfaction with HSPs, clients again reported difficulty with transportation, waiting lists and costs associated with services as being major barriers to their ability to self-manage.

4.4.1.2 Carer

4.4.1.2.1 Baseline

Overall satisfaction with the self-management program

At baseline, carers reported mixed levels of satisfaction with the DPs. A level of satisfaction was reported by those who were able to see more providers regarding the person they care for and were able to interact with other carers as a result of involvement in the DP self-management program. Dissatisfaction was associated with lack of follow-up and support offered by the DP.

Perceptions and experiences of self-management orientation/education and training

There was variation in the degree to which carers felt informed about the DPs when they joined, ranging from those who felt confident and fully informed to those who were unaware of what the DP self-management program would involve.

The majority of carers reported that they had access to DP staff and overall, they reported satisfaction with their relationships with staff.

Carers reported that their caring role impacted on their lives physically, emotionally and financially and many reported feeling overwhelmed as a result. It was felt that it was too early in the DP self-management program to notice any impact on the life of the carer or client.

Perceptions and experiences of care and relationships with HSPs

Carers stated that they would like more advice on how to look after themselves. They reported that while HSPs and staff answered any questions they had regarding clients, it was commonly felt that the focus of interactions was constantly on the client without consideration of the needs of carers.

Barriers

As with clients, carers responded that access to transport, access to health services and associated costs were barriers to the successful management of client health.

4.4.1.2.2 Middle measurement point

Overall satisfaction with the DP self-management program

Satisfaction with the DP self-management program increased from baseline to middle for carers.

Perceptions and experiences of self-management orientation/education and training

Satisfaction was associated with the training and support the DPs offered to deal with frustration and the opportunities they provided for social interaction. Several carers from one DP felt that this training and support had promoted understanding and patience between clients and carers and clients were reported to be more willing to listen to the advice of carers as a result of the DPs. These carers felt that such improvements in relationships had resulted in their lives becoming more pleasant.

While carers from one DP reported many benefits from their involvement in the self-management program, others felt that the self-management program had only had a minimal impact on their lives and relationships, as they were receiving all the assistance they required from their HSPs. It was also felt that while the social interaction was enjoyed, more carers could have been involved to enhance the experience.

Carers were generally satisfied with their access to DP staff.

Perceptions and experiences of care and relationships with HSPs

The comment remained from baseline that interactions with staff and HSPs concentrated on the needs of the client, negating to address those of the carer.

Barriers

Travel to specialists, waiting lists and costs were again listed as major barriers to the successful management of client health.

4.4.1.2.3 Last measurement point

Overall satisfaction with the DP self-management program

As with the middle measurement point, the majority of carers across the DPs reported satisfaction with the support and skills offered by the DPs to assist them in managing their lives.

Perceptions and experiences of self-management orientation/education and training

They reported that they had learned how to manage their frustration and they had developed new coping skills which they felt had led to an improvement in their quality of life. Carers also stated that they felt more informed in their role in terms of medication management and their awareness of available services. Despite these improvements, many still reported that they felt burdened by their caring role.

In addition to the benefits carers reported in their own roles, they also noticed that their clients were benefiting from the DPs as they were becoming less isolated, more knowledgeable about their condition, more motivated to manage their health and less depressed. It is noteworthy that these benefits were generally psychological rather than physical.

Staff were reported as being accessible and it was felt that they provided useful and relevant information. Carers stated that DP staff responded to their needs as carers as well as the needs of their clients, which was not evident at the baseline and middle measurement points.

Perceptions and experiences of care and relationships with HSPs

Satisfaction with support from HSPs varied from carers who felt their HSPs were supportive, interested in the course and responsive to their questions to carers who felt their HSP was not supportive. Despite this variation, most felt satisfied with their relationship with their HSP and some felt that the relationship had improved as a result of involvement with the DP self-management program.

4.4.1.3 Health Service Providers

4.4.1.3.1 Baseline

Perceptions/experiences/satisfaction with the DP self-management program

HSPs generally reported feeling satisfied with the DP self-management program. They either reported that their clients were becoming more involved and proactive in their care and in communication regarding their care, or they were envisaging that this would occur. These experiences and expectations were based upon the enthusiasm and potential that clients were expressing at this early stage.

HSPs reported mixed satisfaction with the roles of the DP staff. While they felt that staff were good at motivating clients, confusion was expressed about the exact role the staff would play. Similarly, satisfaction varied regarding the roles of other HSPs in the DP self-management program. Some felt that communication networks between HSPs had increased as a result of the self-management program, while others responded that better networks were still required.

Impact of the DP self-management program on HSP work practice

While overall, the DP self-management program was viewed as useful and ultimately time saving (as it was anticipated that clients would become more efficient in self-management), HSPs expressed several reservations about the DPs. These reservations were associated with the emerging problems of increased workloads without additional supporting resources and the duplication of care coordination. HSPs stated that they were concerned about these issues as, if not resolved, they would lead to a lack of commitment by HSPs and, therefore, negatively impact on the DPs' potential for sustainability. It was felt that sustainability may also be hindered by the low profile of the DPs in the communities.

4.4.1.3.2 Middle measurement point

Perceptions/experiences/satisfaction with the DP self-management program

At the middle measurement point, HSPs noted that the majority of clients were learning to manage themselves. Clients were described as less demanding and more organised which led to an improvement in the quality of their relationships with clients. Despite this, HSPs discussed the fact that some clients were resistant to the changes that the DP self-management program promoted at this stage in their lives. They expressed regret that it was usually those clients who could benefit the most who demonstrated the greatest resistance to change.

While satisfaction with DP staff varied at baseline, at the middle measurement point, HSPs stated that staff were highly valued and respected. In terms of their relationships with other HSPs, most felt that networks and communication had improved between professionals. It was noted, however, that the ability to maintain these improvements was largely dependent on a manageable workload and that an increase in resources could assist in this regard. HSPs reported that they felt there was a gap in communication and networking between themselves and those running the DPs.

It was discussed that a common strength of the DPs was their applicability to a wide variety of clients. In light of this broad applicability, some HSPs suggested that the DP self-management program or principles could be integrated into existing disease specific programs.

Impact of the DP self-management program on HSP work practice

Most HSPs reported that they felt their role was becoming one of a facilitator rather than an educator and they reported that they had noticed an increase in communication with clients beyond symptoms to include emotional needs. They also reported that the DP self-management program expanded their skills, knowledge and professional networks. They noted that during this period, they were only sensing a small change in roles as a result of the DP; however, changes were occurring in the right direction.

Reservations about care planning were voiced at this measurement point. These included:

- The views that care planning was too clinically focused rather than focusing on client's personal goals;
- The fact that it was too burdensome; and
- That it could not be sustained due to the funding model that would not cover costs to GPs.

HSPs stated that although the DP self-management program was burdensome at this stage, they understood that it had the potential to decrease their workload in the long term.

4.4.1.3.3 Last measurement point

Perceptions/experiences/satisfaction with the DP self-management program

At the last measurement point, HSPs reported that they had noticed positive impacts of involvement in the DP self-management program for their clients and themselves. Clients were reported as having utilised self-management techniques to become more empowered, independent, and confident, which assisted them in becoming more prepared for consultations. Clients were also thought to be more involved in exercise and more aware of nutrition, although it was generally felt that the greatest benefits to clients had been psychological rather than physiological, which is in line with the reports of carers. HSPs felt that the social interaction the DP self-management programs provided had been very valuable for clients.

Despite these positive impacts, it was generally felt that the end date for the DPs had come too soon to enable sustainability. In order to have prevented this, HSPs suggested that there should have been greater communication and integration between HSPs and more marketing/information to increase awareness about DPs.

Overall, HSPs stated that they endorsed the self-management approach and felt it was necessary for clients. Many added that they thought their role had broadened as a result and they were now taking a more holistic approach to

healthcare. Most stated that they would continue to promote self-management and the DP as it was a beneficial addition to existing services.

Impact of the DP self-management program on HSP work practice

In terms of benefits the DP self-management program offered in their own role, HSPs felt that the DP had highlighted the importance of listening to their clients. HSPs felt that they had become more focused on client concerns and better equipped to manage client expectations as a result of the DP self-management program. Some added that they had become more aware of other available services and that they had developed more productive partnerships with other HSPs. These improvements in their capacity in their own roles were described as rewarding.

There were mixed responses as to whether the DP self-management program had changed work practices. While most HSPs across the DPs felt that the self-management program had changed their perception of health care and some stated that they had been successful in integrating self-management principles into their everyday working, others stated that it had proven too difficult. This difficulty was attributed to the fact that it was too problematic to shift from the medical model of care delivery, that care planning remained too costly, that the DPs had required a greater time commitment than they had anticipated and HSP roles were still being duplicated by DP staff and other HSPs.

4.4.1.4 Community

4.4.1.4.1 Baseline

Perceptions and experiences of the DP self-management program in the context of the wider community

It was stated during the baseline focus groups for community that awareness in the community regarding the DPs had been raised via a variety of channels. It was generally felt that this had resulted in the community having a fair to good understanding of the DPs. Despite this knowledge, participants in the focus groups responded that the community had not been involved in the design, development or implementation of the DP self-management programs.

With regards to the quality and quantity of information that reached the community, participants were satisfied with its quality and appropriateness. It was expressed, however, that the DPs required a community wide approach to reach those they needed to rather than accessing the community solely through GPs.

It was generally felt that the DP self-management programs were beneficial for the community. Suggested improvements to the DPs included increased client participation, advertising more widely, targeting special needs groups, ensuring the quality of course leaders and developing an Australian version

of the Stanford CDSM course. Low levels of client participation were attributed to their fear, lack of time or lack of willingness to change. Despite these areas for improvement, participants felt that self-management programs should be maintained in the community. This initially was achieved through transitional funding, which aimed to further embed those sustainable elements of the DPs in the community.

4.4.1.4.2 Middle measurement point

Perceptions and experiences of the DP self-management program in the context of the wider community

At the middle measurement point, representatives from communities generally felt that information about the DPs was not effectively reaching the community. It was reported that the majority of information was obtained from course participants rather than from advertisements. It was felt, however, that the attitudes of some GPs were increasingly supportive of self-management which participants thought may influence community members. It was agreed that there was a need for increased information about the content, formats and locations of the DP self-management programs in a timely manner and it was suggested that a course participant act as a guest speaker to inform the community.

It was generally felt that the DPs provided participants with the confidence and skills to manage their health and decrease the amount of input from HSPs where appropriate. As a result of these benefits, focus group participants expressed enthusiasm about the possibility of further self-management education.

Suggested improvements to the DP self-management programs included tailoring them to different circumstances, for example a course for people immediately after diagnosis to a course for those who have had their condition for several years. It was also felt that disease-specific courses could be beneficial and that the length of the course could be extended with substantial follow-up included. To assist with sustainability, participants were of the opinion that this would only be a possibility if GPs became more involved. It was suggested that marketing should target GPs for this reason.

4.4.1.4.3 Last measurement point

Perceptions and experiences of the DP self-management program in the context of the wider community

As with the previous measurement point, participants of the focus groups at the last measurement point felt that the communities had not been adequately informed about the DPs. Those who felt that their communities had become well informed stated that it had taken several years for this level of awareness to be achieved and that it had mainly occurred through NGOs who were able to effectively pass information onto the community.

There were various opinions as to whether DP information had reached those it needed to. Some members of the community felt that the DP was successful in targeting the dissemination of information while others suggested that information should also be passed onto younger people to aid prevention. It was also felt that often, the people who were the most resistant and could benefit the most from the courses were not well enough informed.

Overall, it was felt that the DP participants were benefiting as the DPs were reported to be promoting good health and empowering people to manage their health.

Suggested improvements to the DPs included increasing the occurrence of GPs recommending the courses and promoting the sustainability of support groups. Barriers to participation in DPs included the timing of courses (for example, during the day), transportation, health problems and costs.

4.4.1.5 Summary of non-Indigenous Focus Groups

Table 32 lists the main themes to emerge from the non-Indigenous focus groups, highlighting progression in key themes across measurement points. These are categorised into those that refer to the positive impacts of the DP self-management program, and those that refer to the barriers and reservations about the DP self-management program. The table is divided by domains and includes information from baseline, middle and last measurement points.

Table 32 Summary of non-Indigenous focus group impacts and barriers

Domain	Progression of focus group themes across measurement points
Client	**Overall satisfaction with the DP self-management program** • Clients were satisfied with the DP self-management program at all three measurement points, however, at middle and last they reported satisfaction with the social interaction provided and very high satisfaction with the courses. **Perceptions and experiences with self-management orientation/education and training** • At the middle and last measurement points, clients reported more specific psychological and physical benefits of the DP self-management program (for example, more knowledgeable about conditions and their management, increased empowerment and increased exercise) than at baseline. At the last point they reported that they felt these would be long term. • Satisfaction with course leaders increased over time. At the last measurement point they were described as knowledgeable, friendly and committed. **Perceptions and experiences of care and relationships with HSPs** • At middle, clients felt that their interactions with HSPs had improved as a result of their increased empowerment from the course. **Barriers** • Lack of transportation, long waiting lists and costs associated with health services were listed as barriers at each measurement point.

Domain	Progression of focus group themes across measurement points
Carer	**Overall satisfaction** • Satisfaction increased over time for carers and at the last measurement point they reported that the DP self-management programs had increased skills to manage their lives. **Perceptions and experiences of self-management orientation/education and training** • Carers reported satisfaction with their relationships with DP staff and over time, they felt they increasingly met their needs as well as those of their clients. • At baseline, carers felt that it was too early to notice an impact on their lives or their clients. Over time, they reported that they had learned to manage their frustrations and were more informed in their role. They also reported that clients were becoming less isolated and had increased their knowledge since joining the DP self-management program. Over time it was felt that the DP self-management program promoted understanding between carers and clients. • Carers continued to be burdened by caring role over time. **Perceptions and experiences of care and relationships with HSPs** • At baseline and middle, carers stated that they would like more advice on how to look after themselves. At last, some felt supported in this regard. **Barriers** • Transportation, access to health services and associated costs.
HSP	**Perceptions/experiences/satisfaction with the DP self-management program** • Over time, HSPs reported that clients were becoming more empowered and confident and they noticed psychological and physiological improvements. • Towards the end of the DP self-management program, HSPs stated that their roles had broadened and they had a more holistic approach to healthcare. **Impact on working life** • While at baseline, HSPs felt that the DPs increased workload without additional resources, towards the end, they felt the DPs had assisted in transforming their role into one of a facilitator and they felt their networks had improved with other HSPs. • Reservations expressed at baseline around care planning and duplication of care coordination remained throughout the DP self-management program.
Community	**Perceptions and experiences of the DP self-management program in the context of the wider community** • At each measurement point, community members generally felt that information about DPs was not effectively reaching the community. • Towards the conclusion of the DP self-management program, HSPs felt that clients were becoming more confident and were developing the skills to manage their health.

4.4.2 Change in health over time for the whole group

The analysis presented below reports how the quantitative measures for health status, health behaviour and service utilisation changed over the three successive measurement points of the evaluation, irrespective of disease status, demographic characteristics or type of intervention received. Some stratification within the measures was of interest in this analysis and these are described in the relevant Sections.

4.4.2.1 Overall Analysis

The measures for the whole group were considered at baseline, the middle and last measurement points. At each measurement point, frequency distributions, means, standard deviations, measures of skewness and kurtosis were inspected. Skewness between 1 and 2 was found and was deemed acceptable and no transformations were required.

As indicated in Section 4.1.3, a repeated measures analysis was undertaken in which only those clients who had complete data for all three measurement points (baseline, middle and last) were included in the analysis. This method involved analyses of both between whole group effects (i.e. differences between relevant stratified subsets of the whole group) and within group effects (i.e. differences between repeated measures across measurement points).

Post hoc pairwise tests[5] were undertaken to establish unique combinations of difference between and within groups.

As part of the analysis, effect size was determined to understand the size of the change across time, both at a whole of group level and at the sub-group level. Accepted threshold levels, were used to define smallest worthwhile effect (δ=0.2), medium effect (δ=0.5) and large (δ=0.8) effect sizes (30).

4.4.2.2 Rationale for the selection of variables used in the analysis

Following univariate screening procedures, a core set of variables were identified by inspection of their range of values at baseline, correlation with other variables, their utility as a measure and the type of domain measured. Seven health outcome variables and two service utilisation variables were chosen for further analysis of key outcomes over time.

4.4.2.3 Specific issues identified for the analysis

The core set of health outcome variables were chosen to represent a range of measurement domains and were the focus of examination of change over time. These were:

- General Health (SF-1);
- Health Distress;
- Coping with Symptoms;
- Self efficacy;
- Social Functioning.
- Satisfaction with Life;
- Psychological Distress (Kessler 10);
- Visits to GP;
- Times to Hospital; and

[5] Post hoc pairwise tests are used after comparisons have been made initially between more than two groups at once to establish which of the groups is different and at what level of significance. The post hoc pairwise tests correct the probability values for doing multiple pairwise comparisons and so, further inform the analysis when more than two groups are compared at once.

The meaning and purpose of these measures is described in Table 15 in the Methodology Section.

Preliminary exploratory analysis revealed the importance of baseline levels of each measure. Therefore a covariate was introduced in each analysis to adjust for the effect of baseline level of each outcome variable in the analysis (Analysis of Covariance – ANCOVA).

Accordingly, the analysis for each outcome variable is presented in two parts:

1. A description of the raw data across the three measurement points (baseline, middle and last); and

2. A description of the results of the ANCOVA, where the change has been adjusted for baseline levels of health.

4.4.2.4 General Health

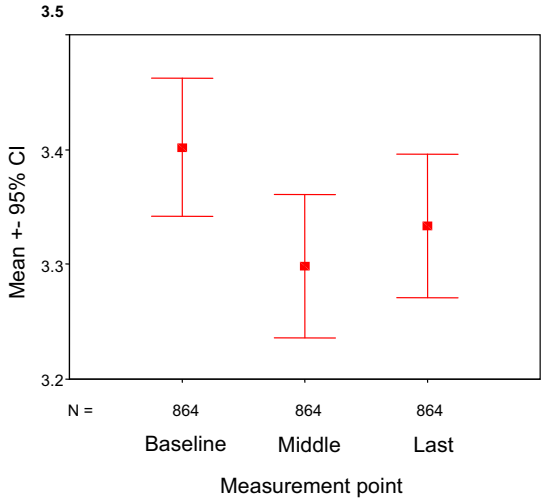
The General Health scale is a five point scale – Excellent, Very Good, Good, Fair and Poor – and is used to measure the Health status/Health-related Quality of Life. The baseline level was re-classified into a three level classification – Excellent to Very Good; Good; and Fair to Poor – for inclusion as a covariate in the analysis.

Overall, the unadjusted General Health score decreased over the evaluation period, with a reduction in score indicating improved General Health. From Table 33 (where n=864 with data for all three measurement points) and Figure 17, it appears that the majority of the decrease occurred between baseline and the middle measurement point.

Table 33 General Health: Raw Data

General Health	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	3.40	3.34	3.46
Middle	3.30	3.24	3.36
Last	3.33	3.27	3.40

Figure 17 General Health: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of General Health on change over time), are presented in Table 34 and Table 35.The analysis revealed that there was an overall significant change in General Health over time ($p<0.0005$) and that the baseline level of General Health does have a significant effect on change in General Health ($p<0.0005$). There was also a significant between groups (i.e. Excellent to Very Good; Good or Fair to Poor) effect for baseline level of General Health ($p<0.0005$). Post-hoc tests showed that whilst a significant change occurred between baseline and middle, this was not the case for between the middle and last data measurement points.

From baseline to the middle data measurement point, the largest effect size was observed for the sub-set of participants who reported that their General Health at baseline was 'Fair' to 'Poor' (the largest sub-group) at baseline. It also moved in the expected direction (i.e. improved) (effect size= -0.59, n=404).

Similarly, the largest effect size from the middle to the last measurement point occurred in the sub-set of participants who reported that their General Health at baseline was Fair to Poor (effect size = -0.52, n=405).

The full analysis of effect sizes associated with changes over time are shown in Appendix 27.

Table 34 General Health: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	General Health	75.53	1.97	<0.0005
	General Health with Baseline Level	97.44	1.97	<0.0005
Between groups	Baseline level of General Health	1501.0	1	<0.0005

Table 35 General Health: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance*	n	Estimate of effect size
		Lower Bound	Upper Bound			
Baseline to Middle	-.103	-0.165	-0.041	<0.0005	864	0.14
Middle to Last	0.035	-0.035	0.104	0.695		-
Baseline to Last	-0.068	-0.133	-0.004	0.033		-

* p<0.005 as significant

Conclusion

After adjusting for the effect of the baseline levels of General Health, the analysis indicated that:

- The level of General Health improved over time;
- The baseline level of General Health had a significant effect on the change in General Health over time, those with lower self reported General Health at baseline showed greater improvement over time; and
- The significant improvement occurred between baseline and the middle measurement point, not between the middle and last measurement points.

4.4.2.5 Psychological Distress

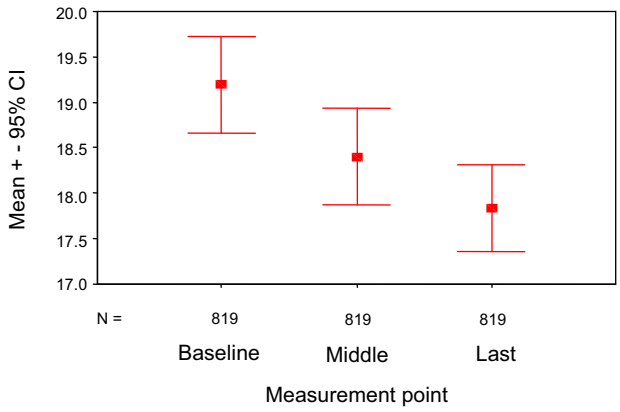
Psychological Distress was measured using the Kessler 10 scale. The baseline level of the Kessler 10 was categorised into four groups: 1) Score 10 to 15; 22; 2) Score 16 to 21; 3) Score 22 to 29; and 4) Score 30 to 50, for inclusion as a covariate in the analysis.

Overall, the unadjusted Kessler 10 score decreased over the evaluation period, with a reduction in score indicating decreased Psychological Distress. From Table 36 (where n=819 with data for all three measurement points) and Figure 18, it appears that the decrease occurred in reasonably equal proportions between each measurement point.

Table 36 Psychological Distress: Raw data

Psychological Distress	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	19.20	18.67	19.73
Middle	18.40	17.88	18.93
Last	17.84	17.36	18.32

Figure 18 Psychological Distress: Raw data



The results of the ANCOVA (which examined the effect of the baseline level of the Kessler 10), are presented in Table 37 and Table 66. The analysis revealed that there was an overall significant change in the Kessler 10 over time ($p<0.0005$) and that the baseline Kessler 10 did have a significant effect on change in Kessler 10 ($p<0.0005$). There was also a significant between groups effect for baseline level of Kessler 10 ($p<0.0005$). Post-hoc tests showed that whilst the greatest change occurred between baseline and middle points, further change occurred between the middle and last measurement points.

From baseline to the middle data measurement point, the largest effect sizes were observed for the sub-set of participants who reported higher Kessler 10 scores (22-29 and 30-50). They also moved in the expected (i.e. improved) direction (effect size = -0.36, n=149 and effect size = -0.69, n=104 respectively).

A similar effect size from the middle to the last measurement point occurred again for those who reported between 22-29 and 30-50 on the Kessler 10 at baseline (effect size = -0.41, n=147 and effect size = -0.95, n=104 respectively).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 37 Psychological Distress: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Psychological Distress	62.85	1.98	<0.0005
	Psychological Distress with Baseline Level	125.54	1.98	<0.0005
Between groups	Baseline level of Psychological Distress	1909.10	1	<0.0005

Table 38 Psychological Distress: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	-.795	-1.30	-0.29	<0.0005	819	0.17
Middle to Last	-.562	-1.02	-0.10	0.01		0.09
Baseline to Last	-1.357	-1.83	-0.88	<0.0005		0.23

Conclusion

After adjusting for the effect of the baseline levels of Kessler 10, the analysis indicated that:

- The level of Psychological Distress decreased over time;
- The baseline level of Psychological Distress had a significant effect on the change in Psychological Distress over time; and
- The greatest change occurred between the baseline and middle measurement points, but further change occurred between the middle and last measurement points.

4.4.2.6 Satisfaction with Life

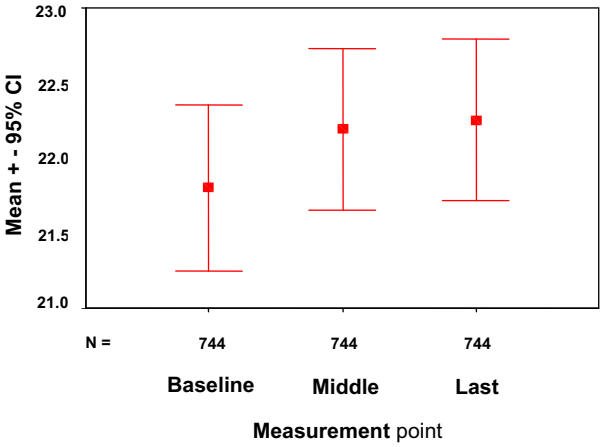
The Satisfaction with Life scale measures overall wellbeing. The baseline level of the Satisfaction with Life was categorised into three groups: 1) High (Score 26-35); 2) Medium (Score 15-25) and 3) Low (Score <15), for inclusion as a covariate in the analysis.

Overall, the unadjusted Satisfaction with Life score increased over the evaluation period, with an increased score indicating improved overall wellbeing. From Table 39 (where n=744 with data for all three measurement points) and Figure 19, it appears that the majority of the increase occurred between baseline and the middle measurement point.

Table 39 Satisfaction with Life: Raw Data

Satisfaction with Life	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	21.80	21.25	22.36
Middle	22.19	21.65	22.73
Last	22.25	21.71	22.79

Figure 19 Satisfaction with Life: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of Satisfaction with Life), are presented in Table 40 and Table 41. The analysis revealed that there was an overall significant change in Satisfaction with Life over time ($p<0.0005$) and that the baseline level of Satisfaction with Life did have a significant effect on change in overall wellbeing ($p<0.0005$). There was also a significant between groups effect for baseline level of Satisfaction with Life ($p<0.0005$). The post-hoc tests showed that the greatest change occurred between baseline and middle points, but it was not statistically significant when adjusted for multiple comparisons.

From baseline to the middle data measurement point, the largest effect sizes were observed for the sub-set of participants who reported higher Satisfaction with Life scores (22-29 and 30-50) at baseline. They also moved in the expected (i.e. improved) direction (effect size = -0.36, n=149 and effect size = -0.69, n=104 respectively).

A similar effect size from the middle to the last measurement point occurred again for those who reported higher Satisfaction with Life scores (22-29 and 30-50) at baseline (effect size = 0.67, n=173 and effect size = 0.70, n=156 respectively).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 40 Satisfaction with Life: Results of Analysis of Covariance

Effect	Variable	F	df	P
Within groups	Satisfaction with Life	79.90	2	<0.0005
	Satisfaction with Life with Baseline Level	111.63	2	<0.0005
Between groups	Baseline level of Satisfaction with Life	2082.88	1	<0.0005

Table 41 Satisfaction with Life: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	.391	-0.07	0.86	Ns	744	-
Middle to Last	.06	-0.44	0.56	Ns		-
Baseline to Last	.452	-0.06	0.96	Ns		-

Note: All 95% CI's include the value zero

Conclusion

After adjusting for the effect of the baseline levels of Satisfaction with Life the analysis indicated that:

- The level of Satisfaction with Life increased over time;
- The baseline level of Satisfaction with Life had a significant effect on the change in Satisfaction with Life over time; and
- The greatest change occurred between the baseline and middle measurement points, but was not statistically significant when adjusted for multiple comparisons.

4.4.2.7 Health Distress

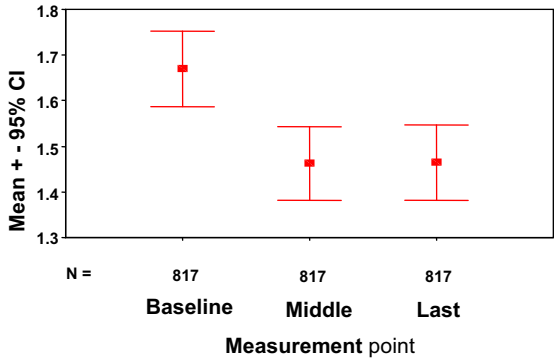
The Health Distress scale measures distress caused by the symptoms of any given health condition(s). The baseline level of the Health Distress scale is categorised into four groups: 1) 0 to <1; 2) 1 to <2; 3) 2 to <3 and 4) 3 to highest, for inclusion as a covariate.

Overall, the unadjusted Health Distress scale decreased over the evaluation period, with a reduction in score indicating a reduction in distress related to any given health condition(s). From Table 42 (where n=817 with data for all three measurement points) and Figure 20, it appears that the majority of the decrease occurred between the baseline and the middle measurement points.

Table 42 Health Distress: Raw data

Health Distress	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	1.67	1.59	1.75
Middle	1.46	1.38	1.54
Last	1.47	1.38	1.55

Figure 20 Health distress: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of Health Distress), are presented in Table 43 and Table 44. The analysis revealed that there was an overall significant change in Health Distress over time ($p<0.0005$) and that the baseline level did have a significant effect on a change in Health Distress ($p<0.0005$). There was also a significant between groups effect for baseline level of Health Distress ($p<0.0005$). The post-hoc tests showed that significant change occurred between the baseline and middle points, but not between the middle and last measurement points.

From baseline to the middle data measurement point, the largest effect sizes were observed for the sub-set of participants who reported higher Health Distress scores (2 to <3 and 3 to highest) at baseline. They also moved in the expected direction (effect size = -0.42, n=191 and effect size = -0.81, n=145 respectively).

A similar effect size from the middle to the last measurement point occurred again for those who reported higher Health Distress scores (2 to <3 and 3 to highest) at baseline (effect size = -0.38, n=187 and effect size = -0.86, n=142 respectively).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 43 Health Distress: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Health Distress	70.85	2	<0.0005
	Health Distress with Baseline Level	135.58	2	<0.0005
Between groups	Baseline level of Health Distress	1531.0	1	<0.0005

Table 44 Health Distress: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	-.207	-0.29	-0.13	<0.0005	817	0.23
Middle to Last	.002	-0.08	0.09	Ns		-
Baseline to Last	-.205	-0.29	-0.12	<0.0005		0.23

Conclusion

After adjusting for the effect of the baseline levels of Health Distress, the analysis indicated that:

- The level of Health Distress decreased over time;
- The baseline level of Health Distress had a significant effect on the change in Health Distress over time; and
- The significant change occurred between the baseline and middle measurement points, but not between the middle and last measurement points.

4.4.2.8 Coping with Symptoms

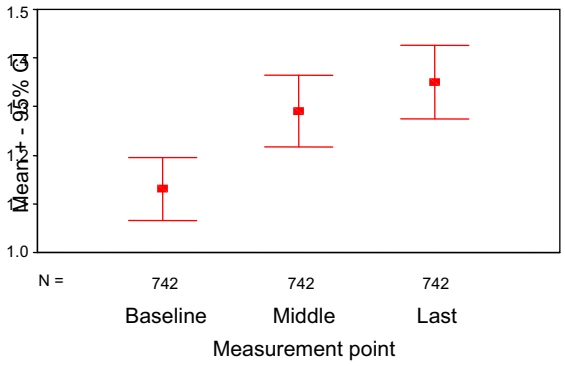
The Coping with Symptoms scale is measured on a five point scale and measures the control of symptoms. The baseline level of the Coping with Symptoms scale was categorised into three groups: 1) 0 to <1; 2) 1 to <2; 3) 2 to <3; and 4) 3 to highest, for inclusions as a covariate in this analysis.

Overall, the unadjusted Coping with Symptoms scale increased over the evaluation period, with an increased score indicating improved Coping with Symptoms. Table 45 (where n=742 with data for all three measurement points) and Figure 21, indicate that the majority of the increase occurred between the baseline and the middle measurement point, with some further increase from the middle to the last measurement point.

Table 45 Table of Raw Data

Coping with Symptoms	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	1.13	1.07	1.20
Middle	1.29	1.22	1.36
Last	1.35	1.28	1.43

Figure 21 Coping with Symptoms: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of Coping with Symptoms), are presented in Table 46 and Table 47. The analysis revealed that there was an overall significant change in Coping with Symptoms over time ($p<0.0005$) and that the baseline Coping with Symptoms did have a significant effect on change in overall wellbeing ($p<0.0005$). There was also a significant between groups effect for baseline level of Coping with Symptoms ($p<0.0005$). The post-hoc tests showed the significant change occurred between baseline and the middle measurement point, but not between the middle and last measurement points ($p=0.54$).

From baseline to the middle data measurement point, the largest effect size was observed for the sub-set of participants who reported higher Coping with Symptoms scores (0 to <1). It also moved in the expected (i.e. improved) direction (effect size = 0.65, n=307). A similar effect size from the middle to the last measurement point again occurred for those who reported higher Coping with Symptoms scores (0 to <1) at baseline (effect size = 0.68, n=306).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 46 Coping with Symptoms: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Coping with Symptoms	79.03	2	<0.0005
	Coping with Symptoms with Baseline Level	58.61	2	<0.0005
Between groups	Baseline level of Coping with Symptoms	1102.7	1	<0.0005

Table 47 Coping with Symptoms: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	.169	0.09	0.25	<0.0005	657	0.20
Middle to Last	.047	-0.03	0.13	Ns		-
Baseline to Last	.217	0.14	0.30	<0.0005		0.26

Conclusion

After adjusting for the effect of the baseline levels of Coping with Symptoms, the analysis indicated that:

- The level of Coping with Symptoms improved over time;
- The baseline level of Coping with Symptoms had a significant effect on the change in Coping with Symptoms over time; and
- The significant change occurred between the baseline and middle measurement points.

4.4.2.9 Social Functioning

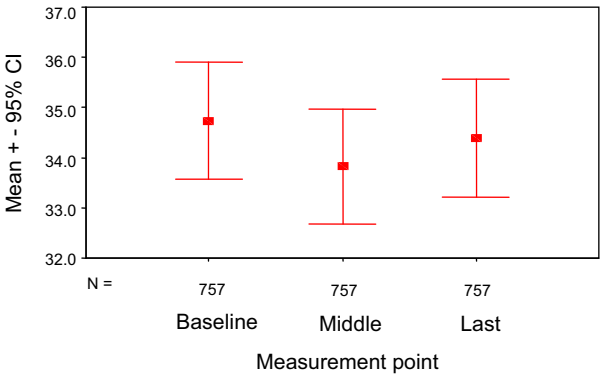
The Social Functioning scale measures the degree to which social functioning is adversely affected by health condition(s). The baseline level of the Social Functioning scale was categorised into three groups: 1) 0 to 24; 2) 25 to 49; and 3) 50 or more, for inclusion as a covariate in this analysis.

Overall, the unadjusted Social Functioning scale decreased over the evaluation period, with a reduction in score indicating there was a decrease in the degree to which social functioning was intruded upon by any given health condition(s). From Table 48 (where n=757 with data for all three measurement points) and Figure 22, it appears that the majority of the decrease occurred between baseline and the middle measurement point.

Table 48 Social Functioning: Raw Data

Social Functioning	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	34.74	33.58	35.90
Middle	33.82	32.67	34.98
Last	34.39	33.21	35.57

Figure 22 Social Functioning: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of Social Functioning), are presented in Table 49 and Table 50. The analysis revealed that there was an overall significant change in Social Functioning over time ($p<0.0005$) and that the baseline level did have a significant effect on change in Social Functioning ($p<0.0005$). There was also a significant between groups effect for baseline level of Social Functioning ($p<0.0005$). The post-hoc tests showed that significant change occurred between the baseline and middle measurement points, but this was not statistically significant when adjusted for multiple comparisons.

From the baseline to the middle data measurement point, the largest effect size was observed for the sub-set of participants who reported a higher Social Functioning score (50 or more), that is greater adverse effect of health condition on Social Functioning. It also moved in the expected (i.e. improved) direction (effect size = -0.55, n=153). A similar effect size from the middle to the last measurement point occurred again for those who reported a higher Social Functioning score (50 or more) at baseline (effect size = -0.54, n=153).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 49 Social Functioning: Results of Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Social Functioning	56.74	2	<0.0005
	Social Functioning with Baseline Level	71.02	2	<0.0005
Between groups	Baseline level of Social Functioning	1288.51	1	<0.0005

Table 50 Social Functioning: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	-.914	-1.98	0.15	Ns	757	-
Middle to Last	.565	-0.50	1.63	Ns		-
Baseline to Last	-.349	0.78	-1.48	Ns		-

Conclusion

After adjusting for the effect of the baseline levels of Social Functioning, the analysis indicated that:

- The level of intrusiveness of health condition on client Social Functioning decreased over time;
- The baseline level of intrusiveness of health on Social Functioning had a significant effect on the change in Social Functioning over time; and
- Whilst change occurred between the baseline and middle measurement points, it was not statistically significant when adjusted for multiple comparisons.

4.4.2.10 Self Efficacy

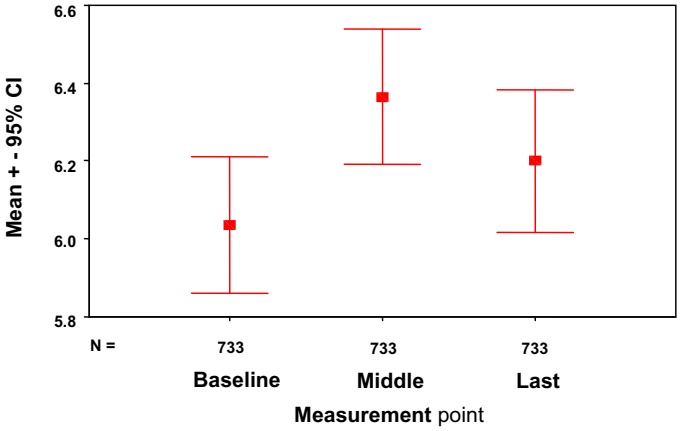
The Self Efficacy scale measures the confidence associated with managing health condition(s). The baseline level of Self Efficacy was categorised into three groups: 1) 0 to <5; 2) 5 to 7.5; and 3) 7.6 or more, for inclusion as a covariate in this analysis.

Overall, the unadjusted Self Efficacy scale increased over the evaluation period, with an increased score indicating improved self efficacy. From Table 51 (where n=733 with data for all three measurement points) and Figure 23, it appears that the majority of the increase occurred between the baseline and the middle measurement point, with some further increase from the middle to the last measurement point.

Table 51 Self Efficacy: Raw Data

Self Efficacy	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	6.03	5.86	6.21
Middle	6.36	6.19	6.54
Last	6.20	6.02	6.38

Figure 23 Self Efficacy: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of Self Efficacy), are presented in Table 52 and Table 53. The analysis revealed that there was an overall significant change in Self Efficacy over time ($p<0.0005$) and that the baseline Self Efficacy did have a significant effect on change in overall wellbeing ($p<0.0005$). There was also a significant between groups effect for baseline level of Self Efficacy with Symptoms ($p<0.0005$). The post-hoc tests confirmed that most of the change occurred between the baseline and middle measurement points and is statistically significant when adjusted for multiple comparisons.

From the baseline to the middle data measurement point, the largest effect size was observed for the sub-set of participants who reported a lower Self Efficacy score (0 to <5). It also moved in the expected (i.e. improved) direction (effect size = 0.73, n=255). A similar effect size from the middle to the last measurement point again occurred for those who reported a lower Self Efficacy score (0 to <5) at baseline (effect size = 0.68, n=255).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 52 Self Efficacy: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Self Efficacy	96.21	1.96	<0.0005
	Self Efficacy with Baseline Level	91.62	1.96	<0.0005
Between groups	Baseline level of Self Efficacy	1174.67	1	<0.0005

Table 53 Self Efficacy: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	.330	0.15	0.51	P<0.0005	733	0.15
Middle to Last	-.165	-0.03	0.36	Ns		-
Baseline to Last	.165	-0.37	0.04	Ns		-

Conclusion

After adjusting for the effect of the baseline levels of Self Efficacy, the analysis indicated that:

- The level of Self Efficacy increased over time;
- The baseline level of Self Efficacy had a significant effect on the change in Self Efficacy over time; and
- Most of the change occurred between the baseline and middle measurement points and was statistically significant when adjusted for multiple comparisons.

4.4.2.11 Visits to GP

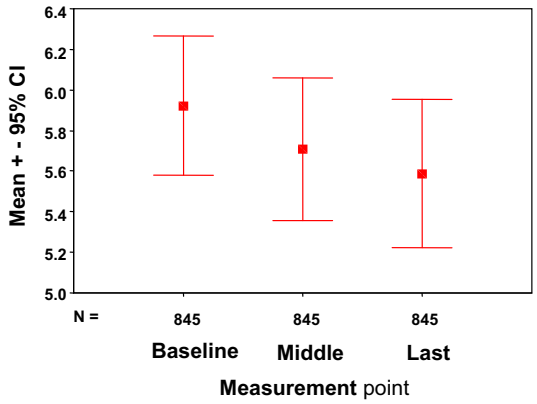
The Visits to GP scale measured the number of visits made to the GP in the past six months. The baseline level was categorised into three groups: 1) 0 to 3 visits; 2) 4 to 7 visits; and 3) 8 or more visits, inclusion as a covariate in this analysis.

Overall, the unadjusted Visits to GP scale decreased over the evaluation period, with a reduction in score indicating a reduced number of visits to the GP. From Table 54 (where n=733 with data for all three measurement points) and Figure 24, it appears that the majority of the decrease occurred steadily throughout the evaluation period.

Table 54 Visits to GP: Raw Data

Visits to GP	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	5.92	5.58	6.27
Middle	5.71	5.36	6.06
Last	5.59	5.22	5.95

Figure 24 Visits to GP: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of Visits to GP), are presented in Table 55 and Table 56. The analysis revealed that there was an overall significant change in Visits to GP over time ($p<0.0005$) and that the baseline level did have a significant effect on change in the number of Visits to GP ($p<0.0005$). There was also a significant between groups effect for baseline level of Visits to GP ($p<0.0005$). The post-hoc tests showed that whilst most change occurred between the baseline and middle measurement points, this was not statistically significant when adjusted for multiple comparisons.

From the baseline to the middle data measurement point, the largest effect size was observed for the sub-set of participants who recorded a higher number of Visits to GP (8 or more). It also moved in the expected (i.e. improved) direction (effect size = -0.35, n=222). A similar effect from the middle to the last measurement point occurred again for those who recorded a higher number of Visits to GP (8 or more) at baseline (effect size = -0.44, n=221).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 55 Visits to GP: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Visits to GP	40.96	1.92	<0.0005
	Visits to GP with Baseline Level	54.43	1.92	<0.0005
Between groups	Baseline level of Visits to GP	571.90	1	<0.0005

Table 56 Visits to GP: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	-.215	-0.63	0.20	Ns	845	-
Middle to Last	-.121	-0.60	0.36	Ns		-
Baseline to Last	-.336	-0.83	0.16	Ns		-

Conclusion

After adjusting for the effect of the baseline levels of Visits to GP, the analysis indicated that:

- The level of Visits to GP decreased over time;
- The baseline level of Visits to GP had a significant effect on the change in Visits to GP over time; and
- Most of the change occurred between the baseline and middle measurement points, but was not statistically significant after adjustment for multiple comparisons.

4.4.2.12 Times in Hospital

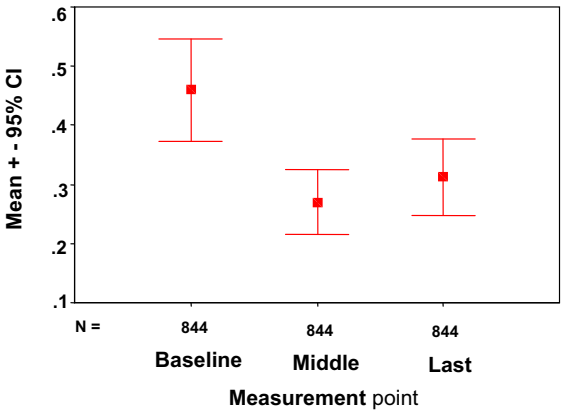
The Times in Hospital scale measured the number of times spent in hospital for one night or more in the past six months. The baseline level was categorised into three groups: 1) None at all; 2) Once; and 3) More than once, for inclusion as a covariate in the analysis.

Overall, the unadjusted Times in Hospital scale decreased over the evaluation period, with a reduction indicating a reduced number of hospital admissions. From Table 57 and Figure 25, it appears that the majority of the decrease occurred steadily throughout the evaluation period.

Table 57 Times in Hospital: Raw Data (n=844 with data for all three measurement points)

Hospital	Mean	95% Confidence Interval	
		Lower Bound	Upper Bound
Baseline	.46	.37	.55
Middle	.27	.22	.32
Last	.31	.25	.38

Figure 25 Times in Hospital: Raw Data



The results of the ANCOVA (which examined the effect of the baseline level of times in hospital), are presented in Table 58 and

Table 59. The analysis revealed that there was an overall significant change in Times in Hospital over time ($p<0.0005$) and that the baseline level did have a significant effect on change in the number of Times in Hospital ($p<0.0005$). There was also a significant between groups effect for baseline level of Times in Hospital ($p<0.0005$). Post-hoc tests showed that the significant reduction occurred between the baseline and middle measurement points.

For the change from the baseline to the middle data measurement point, the largest effect size was observed for the sub-set of participants who reported a higher number of Times in Hospital ('once' and 'more than once'). They also moved in the expected (i.e. improved) direction (effect size = -0.9, n=118 and effect size = -0.79, n=83 respectively). A similar effect size from the middle to the last measurement point occurred again for those who reported a higher number of Times in Hospital (Once and More than once) at baseline (effect size = -0.92, n=119 and effect size = -0.86, n=81 respectively).

The full analysis of effect sizes associated with changes over time is shown in Appendix 27.

Table 58 Times in Hospital: Analysis of Covariance

Effect	Variable	F	df	p
Within groups	Times in Hospital	181.18	1.93	<0.0005
	Times in Hospital with Baseline Level	276.18	1.93	<0.0005
Between groups	Baseline level of Times in Hospital	563.08	1	<0.0005

Table 59 Times in Hospital: Post-hoc Pairwise Comparisons from Analysis of Covariance

Adjusted Data Pairwise Comparisons	Mean Difference	95% Confidence Interval		Significance	n	Estimate of effect size
		Lower	Upper			
Baseline to Middle	-.190	-0.28	-0.10	<0.0005		0.18
Middle to Last	-.043	-0.04	0.13	Ns	844	-
Baseline to Last	-.147	-0.25	-0.05	0.001		0.14

Conclusion

After adjusting for the effect of the baseline levels of Times in Hospital, the analysis indicated that:

- The level of Times in Hospital decreased over time;
- The baseline level of Times in Hospital had a significant effect on the change in Times in Hospital over time; and
- The significant reduction occurred between the baseline and middle measurement points. There was also an increase between the middle and last measurement points but this was not significant.

4.4.2.13 Summary of Results – Whole Group

This analysis provided an overall indication of changes in health behaviour, health status and service utilisation for all DP participants, irrespective of disease status, demographic characteristics or type of intervention received. This analysis was adjusted for baseline levels of health status and service utilisation, since it was clearly demonstrated through a review of difference scores stratified by baseline level, that for most variables, baseline level significantly influenced the subsequent observed change.

Overall

The overall findings are as follows:

- The trend for all the measures over the life of DP self-management program was for an improvement.
- The majority of this change occurred between the baseline and middle measurement points.
- The change was usually sustained between the middle and last points.

Effect size

For the whole group, small but consistent effect sizes of or approaching 0.2, indicating improvement, were observed for the following variables:

- Health Distress;
- Coping with Symptoms;
- Times in Hospital; and
- Psychological Distress.

These effects were driven by the 'worst' scorers for each measure (i.e. the ones, who at baseline had furthest to move). When the effect sizes were reviewed for individual strata, there were a number of measures which showed an effect size of or greater than 0.5:

- General Health (Fair to Poor);
- Psychological Distress (Score >22);
- Satisfaction with Life (Score 6-7);
- Health Distress (Score 3-4);
- Coping with Symptoms (3-4);
- Social Functioning (50 or more);
- Self Efficacy (Score 7.6 to high); and
- Hospital (once or more).

Interpretation

One interpretation of these results is that the DP self-management program mainly benefited those at the more severe end of the spectrum. However, it is also worthwhile considering whether the most appropriate measurement tools were chosen. They may not have been sensitive enough to detect subtle change for those at the better end of the scale.

Nevertheless significant change was consistently observed across the length of the DP self-management program and a review of the DP program-led factors which could have influenced this change is discussed in Section 4.5.

4.4.3 Health outcomes compared with population norms

Before the specific influencers of health are considered further, it would be useful, given the context of those in poorer health seemingly do better to consider how the self reported health of the SHCI cohort compares to the Australia normative data.

The rationale for selecting the SF-1 and the Kessler 10 to measure General Health and Psychological Distress respectively, was so that the responses of the sample could be compared to the responses of the Australian population as a whole as reported in the National Health Survey 2001. Such a comparison allows us to understand the initial and final levels of our sample.

4.4.3.1 General Health

The General Health (SF-1) scale is a sub-scale of the SF-36 and is used to measure the Health status/Health-related Quality of Life. This is a one item, self report measure that allows people to rate their General Health from 1 (excellent) to 5 (poor).

Table 60 shows that the majority of DP clients were in the age categories 55 years and above. At baseline, the majority of clients reported their general health to be either 'good' or 'fair' and this trend continued for the last measurement point. The national population data (as reported in the National Health Survey, 2001) suggest that when compared to the general population in similar age bands, self reports of clients of the DPs were slightly poorer initially and at the last measurement point.

The tendency for the clients of the DPs to report poorer general health was not surprising given that they were participating in a CCSM program. This finding reflects that, in all likelihood, they were experiencing greater health problems than the average for the wider population.

4.4.3.2 Psychological Distress

The Kessler 10 self report 10 item measure was used to assess participants' levels of psychological distress. Scores from the Kessler 10 can range from 10-50 where a higher score indicates a higher level of psychological distress.

Table 60 shows that the majority of the general population of both sexes and across all age categories reported their psychological distress to be 'low' (as reported by the National Health Survey 2001). This was also the case for the SHCI male and female participants at baseline; however, a greater proportion of males compared with females reported this low level of distress.

At the last measurement point, male SHCI participants aged 55 years and older continued to report their psychological distress as 'low' and female participants of these age groups were also more likely to report their psychological distress as 'low'. The proportions of males and females reporting low levels of psychological distress had increased from baseline to the last measurement point (i.e. there was a tendency to improve regardless of sex). However, at this last measurement point, the proportion of males reporting a low level of distress was still greater than that for females.

Table 60 SHCI participant General Health compared with national data

SF-1 General Health	SHCI Baseline							SHCI Last							NHS 2001							
	Age Group							Age Group							Age Group							
	15-24	25-34	35-44	45-54	55-64	65-74	75+	15-24	25-34	35-44	45-54	55-64	65-74	75+	15-24	25-34	35-44	45-54	55-64	65-74	75+	Total (a)
Self assessed health status	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	%	%	%	%	%	%	%	%
MALES																						
Excellent	0 (0.0)	1 (16.7)	0 (0.0)	0 (0.0)	4 (2.0)	6 (2.9)	3 (1.9)	0 (0.0)	1 (50.0)	0 (0.0)	0 (0.0)	4 (3.5)	7 (5.5)	4 (4.9)	28.6	23.8	17.2	15.9	14.3	11.1	9.7	19.3
Very Good	0 (0.0)	0 (0.0)	2 (33.3)	14 (26.4)	25 (12.5)	31 (15.1)	14 (8.9)	0 (0.0)	0 (0.0)	1 (100.0)	6 (23.1)	23 (20.4)	22 (17.2)	11 (13.4)	38.3	36.2	34.9	31.8	27.2	22.1	18.1	34.7
Good	0 (0.0)	2 (33.3)	2 (33.3)	18 (34.0)	69 (34.5)	82 (40.0)	66 (42.0)	0 (0.0)	0 (0.0)	0 (0.0)	6 (23.1)	41 (36.3)	52 (40.6)	37 (45.1)	24.9	29.4	34.0	33.8	31.5	32.2	28.4	28.6
Fair	0 (0.0)	0 (0.0)	1 (16.7)	11 (20.8)	75 (37.5)	68 (33.2)	60 (38.2)	0 (0.0)	1 (50.0)	0 (0.0)	9 (34.6)	36 (31.9)	38 (29.7)	20 (24.4)	6.9	8.6	10.8	13.0	19.5	23.3	28.3	12.9
Poor	0 (0.0)	3 (50.0)	1 (16.7)	10 (18.9)	27 (13.5)	18 (8.8)	14 (8.9)	0 (0.0)	0 (0.0)	0 (0.0)	5 (19.2)	9 (8.0)	9 (7.0)	10 (12.2)	1.3	2.1	3.1	5.5	7.6	11.3	15.5	4.5
Total	0 (0.0)	6 (100.0)	6 (100.0)	53 (100.0)	200 (100.0)	205 (100.0)	157 (100.0)	0 (0.0)	2 (100.0)	1 (100.0)	6 (19.2	113 (100.0)	128 (100.0)	82 (100.0)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
FEMALES																						
Excellent	0 (0.0)	0 (0.0)	1 (3.6)	4 (2.6)	5 (1.6)	9 (2.2)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	7 (3.5)	3 (1.2)	3 (1.5)	22.1	24.3	21.5	17.8	16.4	13.4	7.4	19.2
Very Good	0 (0.0)	0 (0.0)	1 (3.6)	16 (10.3)	45 (14.1)	56 (13.9)	34 (10.6)	0 (0.0)	0 (0.0)	3 (20.0)	12 (15.8)	35 (17.3)	46 (18.0)	22 (10.7)	39.8	37.4	38.3	32.9	28.0	22.6	22.3	33.8
Good	1 (50.0)	0 (0.0)	8 (28.6)	65 (41.9)	98 (30.7)	150 (37.2)	113 (35.3)	1 (100.0)	0 (0.0)	9 (60.0)	36 (47.4)	72 (35.6)	98 (38.3)	61 (29.8)	27.8	27.2	27.8	29.1	30.8	35.6	31.0	29.1
Fair	0 (0.0)	2 (50.0)	11 (39.3)	42 (27.1)	129 (40.4)	141 (35.0)	132 (41.3)	0 (0.0)	0 (0.0)	2 (13.3)	20 (26.3)	70 (34.7)	89 (34.8)	88 (42.9)	8.4	8.7	10.1	15.1	17.5	20.7	26.1	13.2
Poor	1 (50.0)	2 (50.0)	7 (25.0)	28 (18.1)	42 (13.2)	47 (11.7)	40 (12.5)	0 (0.0)	0 (0.0)	1 (6.7)	7 (9.2)	18 (8.9)	20 (7.8)	31 (15.1)	2.0	2.5	2.4	5.1	7.2	7.7	13.2	4.6
Total	2 (100.0)	4 (100.0)	28 (100.0)	155 (100.0)	319 (100.0)	403 (100.0)	320 (100.0)	1 (100.0)	0 (0.0)	15 (100.0)	76 (100.0)	202 (100.0)	256 (100.0)	205 (100.0)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Age standardised percentages

Table 61 SHCI participant Psychological Distress compared with national data

K10 Psychological Distress	SHCI Baseline							SHCI Last							NHS 2001							
	Age Group							Age Group							Age Group							
	15-24	25-34	35-44	45-54	55-64	65-74	75+	15-24	25-34	35-44	45-54	55-64	65-74	75+	18-24	25-34	35-44	45-54	55-64	65-74	75+	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	'000	'000	'000	'000	'000	'000	'000	'000
MALES																						
Low (10-15)	0 (0.0)	2 (50.0)	3 (50.0)	14 (28.0)	83 (42.3)	108 (53.2)	73 (47.4)	0 (0.0)	1 (50.0)	1 (100.0)	12 (46.2)	58 (52.3)	85 (66.4)	48 (60.0)	550.1	872.7	1005.8	905.0	665.0	484.6	296.9	4780.1
Moderate (16-21)	0 (0.0)	0 (0.0)	1(16.7)	13 (26.0)	53 (27.0)	46 (22.7)	44 (28.6)	0 (0.0)	0 (0.0)	0 (0.0)	4 (15.4)	26 (23.4)	19 (14.8)	23 (28.8)	262.5	360.4	282.2	265.6	143.0	88.2	77.2	1479.0
High (22-29)	0 (0.0)	0 (0.0)	1(16.7)	12 (24.0)	40 (20.4)	30 (14.8)	29 (18.8)	0 (0.0)	0 (0.0)	0 (0.0)	8 (30.8)	19 (17.1)	13 (10.2)	5 (6.3)	74.0	116.4	112.5	79.1	61.9	35.8	18.4	498.2
Very High (30-50)	0 (0.0)	2 (50.0)	1(16.7)	11 (22.0)	20 (10.2)	19 (9.4)	8 (5.2)	0 (0.0)	1 (50.0)	0 (0.0)	2 (7.7)	8 (7.2)	11 (8.6)	4 (5.0)	24.9	29.2	35.5	47.7	32.3	*12.0	*7.5	189.1
Total	0 (0.0)	4 (100.0)	6 (100.0)	50 (100.0)	196 (100.0)	203 (100.0)	154 (100.0)	0 (0.0)	2 (100.0)	1 (100.0)	26 (100.0)	111 (100.0)	128 (100.0)	80 (100.0)	911.4	1378.8	1436.0	1297.3	902.1	620.6	400.1	6946.4
FEMALES																						
Low (10-15)	0 (0.0)	1 (25.0)	3 (11.1)	29 (19.0)	95 (30.3)	149 (38.0)	113 (36.6)	0 (0.0)	0 (0.0)	4 (26.7)	23 (29.1)	84 (42.0)	118 (47.0)	85 (42.3)	403.7	775.8	882.3	814.8	601.3	472.2	396.1	4346.3
Moderate (16-21)	1 (50.0)	0 (0.0)	8 (29.6)	48 (31.4)	100 (31.8)	126 (32.1)	109 (35.3)	0 (0.0)	0 (0.0)	5 (33.3)	33 (41.8)	62 (31.0)	68 (27.1)	59 (29.4)	276.7	424.9	372.3	299.0	181.1	122.1	110.6	1786.9
High (22-29)	0 (0.0)	2 (50.0)	5 (18.5)	42 (27.5)	61 (19.4)	69 (17.6)	53 (17.2)	0 (0.0)	0 (0.0)	4 (26.7)	16 (20.3)	32 (16.0)	44 (17.5)	37 (18.4)	145.6	159.3	167.1	131.3	83.5	46.5	52.2	785.5
Very High (30-50)	1 (50.0)	1 (25.0)	11 (40.7)	34 (22.2)	58 (18.5)	48 (12.2)	34 (11.0)	1 (100.0)	0 (0.0)	2 (13.3)	7 (8.9)	22 (11.0)	21 (8.4)	20 (10.0)	46.9	65.2	62.5	73.1	31.9	22.7	17.3	319.5
Total	2 (100.0)	4 (100.0)	27 (100.0)	153 (100.0)	314 (100.0)	392 (100.0)	309 (100.0)	1 (100.0)	0 (0.0)	15 (100.0)	79 (100.0)	200 (100.0)	251 (100.0)	201 (100.0)	872.9	1425.1	1484.6	1318.2	897.9	663.5	576.1	7238.3

* Estimate has a relative standard error of between 25% and 50% and should be used with caution