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An Evaluation of the Diabetes Self-Management Education Programme

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Abbreviations

BMI	Body Mass Index
CMDHB	Counties Manukau District Health Board
DHB	District Health Board
DSME	Diabetes Self-Management-Education
ETHC	East Tamaki Health Care
THO	Total Healthcare Otara
GP	General Practitioner
GPHO	Primary Health Organisation Group
LBD	Lets Beat Diabetes
MCHT	Mangere Community Health Trust
PHO	Primary Health Organisation
SIA	Services to improve access
SME	Self-management-education
TKOH	Te Kupenga O Hoturoa

Short Summary

Background: Self-management education programmes seek to support patients to realise that they are their own principal caregivers, with health care professionals becoming consultants supporting patients in their new role. Self-management education is therefore a patient centred education plan where patients learn problem-solving skills and use action plans to find solutions to identified problems in the medical, social and emotional aspects of their illness.

Aims: To evaluate the Diabetes Self Management Education (DSME) programme implemented as part of a Counties Manukau District Health Board, district-wide approach in partnership with local PHOs. This evaluation aimed to monitor the programme outcomes and document the lessons learned throughout the process of implementation.

Methods: A mixed methods approach was used. The process evaluation involved a document analysis, focus groups with participants and interviews with facilitators and PHO managers, which were analyzed using qualitative data analysis techniques. The outcome monitoring involved the use of questionnaire to track attitudes and behaviours around diabetes self-management before and after programme implementation. Clinical outcomes such as HbA1c, BMI and blood pressure were also tracked before the programme began and three months after the programme ended. Monitoring data was analyzed quantitatively.

Results: This report explains in detail that the DSME programme implemented in Counties Manukau managed to:

- Show an improvement in participants' attitudes towards their own ability to manage their diabetes after participating in a DSME group, which was mostly sustained three months after the end of DSME participation.
- Show an improvement in participants' diet, physical activity and feet care after participating in a DSME group. There was not enough data to ascertain whether changes were sustained three months after the end of the intervention.
- Show an improvement in HbA1c levels three months after the end of DSME participation.

Recommendations

1. Secure stakeholder buy in for smoother implementation and evaluation process
2. Advocate for broader support for PHO-based DSME facilitators
3. Ensure additional support for Maori and Pacific facilitators based at CMDHB
4. Integrate culturally based activities in DSME
5. Consider the use and advertisement of translators for DSME
6. Integrate post-SME participant support as part of the programme
7. Implement an improved system of resource sharing among PHOs
8. Identify and develop an appropriate model for ongoing supervision of facilitators.
9. Identify a process through which ongoing evaluation of this programme can be carried out.
10. Coordinate and develop a communications plan to improve the link between managers, facilitators and practices.

Executive Summary

Aim

This evaluation is part of the overall Let's Beat Diabetes (LBD) evaluation led by the School of Population Health at the University of Auckland in collaboration with LBD. This focused study is designed to evaluate the DSME programme implemented in partnership with LBD and local PHOs. Specifically, the evaluation includes the monitoring of process and outcome data.

Objectives

The purpose of this evaluation was to document the lessons learned through the implementation of DSME in Counties Manukau, as well as monitor the expected patient outcomes, in order to facilitate the continued improvement of the programme.

Background

Patients in the community often do not adhere with the recommendations from health professionals. The failure of traditional modes of promoting healthy behaviours has led to a new paradigm emerging of the doctor-patient relationship in chronic disease management. Self-management education programmes seek to make patients realise that they are their own principal caregivers, with health care professionals becoming consultants supporting patients in their new role. Self-management education is therefore a patient centred education plan where patients learn problem-solving skills and use action plans to find solutions to identified problems in the medical, social and emotional aspects of their illness (Bodenheimer, Lorig, Holman, Grumbach, 2002).

As part of the solution of the growing diabetes epidemic and the new paradigm of chronic disease management, the 'Let's Beat Diabetes' (LBD) Self-Management Education (SME) primary healthcare programme was designed and promoted by the CMDHB in consultation with PHOs to help patients manage their diabetes. The programme was designed to improve the uptake of best practice after a patient receives a diagnosis for diabetes.

Methods

The evaluation utilised a mixed methods approach, combining quantitative and qualitative data collection. Specifically, the evaluation methods included:

- A documentary analysis of the meeting minutes supplied by DSME.
- Health attitude and behaviour questionnaires administered to participants pre DSME, immediately post DSME sessions, and 3 months after the completion of the DSME sessions.
- Participant physical health data including HbA1c, BMI, and blood pressure, pre DSME and 3 months after the completion of DSME sessions.
- Focus groups with participants.
- In-depth interviews with programme facilitators and managers.

Results: Participant Focus Group Data

The key findings from the participant focus groups are presented under key themes and included:

Participation

- The most common motivator for attending was the desire for more information which was linked to concerns about their personal health condition.
- Perceived barriers to attending the programme were cited, the most common being language. Often this was thought to lead to shame and isolation because of the lack of understanding. Another perceived barrier was cultural beliefs, particularly about the role of religion in managing diabetes.

Perceived Change

- An increase in knowledge and understanding about how to manage their diabetes was one of the most commonly reported changes.
- Participants also reported a greater sense of control over their condition and increases in their confidence to self-manage.

Barriers and Facilitators to Change

- Motivators for change most commonly came from the group of participants, where discussing personal experiences made people feel less isolated.
- Getting used to new eating habits, unsupportive and unhealthy environments such as church functions and financial constraints were reported barriers to change.
- In addition to this, participants pointed out that after the programme finishes there could be a drop in motivation.

Impact on Friends and Family

- Participants noted that there was a positive effect on friends and family.

Programme Delivery

- Participant's enjoyed the group interaction, felt the style of presentation was a good fit and that the location, time and length of sessions were appropriate.

Facilitator Interview Data

The key findings from the facilitator interviews are presented under key themes including:

Programme Referrals

- For many facilitators, getting referrals to the programme was challenging. Some of the barriers included the low profile of DSME within PHOs, time pressures on GPs, and not being able to promote DSME adequately.
- Enablers to referrals included not having to go through GPs to obtain referrals, GP and nurse familiarity with the DSME programme, and facilitators experience in working with practices and links with the community.

Programme Delivery

- Facilitator follow-up meetings, sharing information with other facilitators, the training and manuals, facilitator experience, use of translators and support from PHOs were all enablers to programme delivery.

- Barriers to delivery included lack of cultural information in the facilitator training, having to share limited resources, spending more time on DSME than their recognised allocation, and covering a large amount of content in a limited amount of time.

Perceptions of Programme Impacts

- One of the key impacts was the social connections formed through the programme, which impacted on changing behaviour.
- Facilitators also saw an increase in participant knowledge which helped them talk to their health professional in a more meaningful and engaged way.

Perceptions of Barriers and Enablers to Changes

- Enablers to change included the group acting as a source of motivation for the participants, empowerment, sense of belonging, support of church Ministers, and using resources such as a pedometers to increase awareness.
- Barriers included the nature of the target group being difficult to reach, low education levels, different social and cultural environments, language, transport and work commitments.

Facilitator Recommendations

- The introduction of follow-up meetings for the participants was seen as important to maintain support networks.
- Facilitators suggested having a computer-based lending system for the use of limited resources.
- Increasing the training around culturally appropriate foods was also suggested.
- Facilitators also wanted more time to get through the programme content.
- An increase in workforce capacity for the DSME programme was cited as crucial to the sustainability of the programme.

Managers Interview Data

Key findings from the in-depth interviews with the PHO managers and programme coordinator included:

Barriers and Enablers to Programme Development

- Enablers to the development of the DSME programme include having the support of programme champions, a match between the philosophy of DSME and the PHO, support from PHOs, the facilitators' commitment, passion and skills were key in supporting the development of the programme.
- Barriers included a mismatch between views of the DHB and other people, engagement of practices in the DSME programme, confusion about the relationship between LBD and SME.

Programme Sustainability

- There were strong feelings among the managers that the concept of SME needs to continue and that the programme is sustainable.
- Despite this, funding concerns were raised as well as issues around the individual strategic directions of PHOs which may not include SME.

- Demand for DSME was high and this was felt to reflect the need for the programme, but this demand may mean the programme is not sustainable under the current work force and resourcing.

Stakeholder Collaboration

- Enablers to stakeholder collaboration include the establishment of the Steering group in April 2007, PHOs working across traditional PHO boundaries, and strong relationships between the DHB and PHOs.
- Barriers to stakeholder collaboration include earlier issues with collaboration that lead to the disengagement of some PHOs, and confusion around the relationship between DSME and LBD.

Future Direction

- In terms of the future direction of DSME, managers talked about the need to manage the demand for the programme by being more selective in the people taking part and incorporating the concept of SME into wider primary care.
- A developing role for facilitators was also mentioned as well as using lay facilitators for follow-up meetings, to ease the load for the facilitators of the sessions. Ethnic specific DSME courses were also suggested.

Results: Participant questionnaire and physical health data

The findings from the participant questionnaires and physical health data indicated that:

Attitude

- The attitude scores of the participants markedly improved after attending the DSME programme, in particular participants' understanding of diabetes and its management improved the most.
- Participants' reported level of knowledge about diabetes to make choices that are right for them also greatly improved.
- Significant, sustained improvements were identified particularly for questions about health status, confidence in managing diabetes, knowledge about diabetes to make choices that are right for them, feeling good about living with diabetes and understanding diabetes and its management.

Behaviour

- Participant behavioural scores improved after attending the DSME programme, particularly for eating at least three meals a day, eating breakfast, eating the recommended servings of fruits and vegetables, doing moderate physical activity, and checking their feet.
- There was a significant decrease in the number of days participants reported consuming high fat foods.
- With the exception of the decrease in number of days participants consumed high fat foods, there was not enough data to ascertain whether behavioural changes were sustained three months after the end of the intervention.

Physical Health

- Physical indicators of the participants, which included HbA1c, BMI, waist circumference and blood pressure, show that over time, the only statistically significant improvement was a decrease in HbA1c.

Recommendations

The report concludes by discussing some of the limitations of the evaluation, as well as identifying a number of potential recommendations for programme development. These, along with the findings from the evaluation, will be discussed with the key stakeholders at a workshop to ensure feedback from all stakeholders is included into the final report.

Key recommendations include:

1. Secure stakeholder buy in for smoother implementation and evaluation process
2. Advocate for broader support for PHO-based DSME facilitators
3. Ensure additional support for Maori and Pacific facilitators based at CMDHB
4. Integrate culturally based activities in DSME
5. Consider the use and advertisement of translators for DSME
6. Integrate post-SME participant support as part of the programme
7. Implement an improved system of resource sharing among PHOs
8. Identify and develop an appropriate model for ongoing supervision of facilitators.
9. Identify a process through which ongoing evaluation of this programme can be carried out.
10. Coordinate and develop a communications plan to improve the link between managers, facilitators and practices.

1 Introduction

Patients in the community often do not adhere with the recommendations from health professionals. The failure of traditional modes of promoting healthy behaviours has led to a new paradigm emerging of the doctor-patient relationship in chronic disease management. Self-management education programmes seek to make patients realise that they are their own principal caregivers, with health care professionals becoming consultants supporting patients in their new role. Self-management education is therefore a patient centred education plan where patients learn problem-solving skills and use action plans to find solutions to identified problems in the medical, social and emotional aspects of their illness (Bodenheimer, et al, 2002).

As part of the solution of the growing diabetes epidemic and the new paradigm of chronic disease management, the 'Let's Beat Diabetes' (LBD) Self-Management Education (SME) primary healthcare programme was designed and promoted by the CMDHB to help patients manage their diabetes. The programme was designed to improve the uptake of best practice after a patient receives a diagnosis for diabetes.

The purpose of this evaluation was to document the lessons learned through the implementation of DSME in Counties Manukau, as well as monitor the expected patient outcomes, in order to facilitate the continued improvement of the programme. This evaluation is part of the overall LBD evaluation led by the University of Auckland School of Population Health (SoPH) in collaboration with LBD. This focussed study is designed to evaluate the DSME programme implemented in partnership with LBD, Procure Network Manukau, East Health, Total Healthcare Otara, and Mangere Community Health Trust. In line with the Centers for Disease Control and Prevention (1999) Framework, the evaluation will provide feedback to develop the DSME programme and share learnings with the overall LBD programme.

2 Alignment between LBD and HEHA

HEHA (Health Eating Health Action) reflects the Government's plans to improve nutrition, increase physical activity and reduce obesity throughout New Zealand (Ministry of Health, 2004). Improved Maori health and reducing inequalities in health is also a key focus of HEHA. LBD shares these HEHA aims and objectives and acts as a vehicle for supporting and implementing the HEHA strategy in Counties Manukau (CMDHB, 2006). The linkages between the two strategies are clear given the underlying risk factors for Type II diabetes. Subsequently, a number of LBD and LBD partner initiatives are designed to promote healthy nutrition and increase physical activity, as LBD is designed to protect those who are at risk of developing Type II diabetes, as well as supporting those who are currently diagnosed.

DSME is aligned to both LBD and HEHA in its outcomes and approach. Both represent a collaborative and coordinated, cross-sectoral approach to improve nutrition, increase physical activity, and reduce obesity; the former seeking to achieve its overarching objective of reducing the impact of Type II diabetes via education with

respect to nutrition and physical activity. This type of approach is identified as a desired outcome of the current HEHA and LBD strategies.

The LBD key performance indicators and the HEHA outcomes and actions framework can be used to identify alignments and overlap between the two strategies. DSME corresponds with the HEHA action 12 of ensuring that communities are actively involved and successful in influencing the availability and supporting the promotion of healthy food and physical activity within communities. HEHA action 12.1 of developing and expanding community action programmes for high need groups is a clear example of the links that exist between the LBD planned activities and their HEHA counterparts. Participants in the DSME programme are encouraged to be proactive within their communities; involving communities in this type of intervention process at this early stage may be vital to lessening the impact of Type II diabetes in Counties Manukau. HEHA action 13.2, which indicates the expansion of existing access to, and the development of new, community-based education programmes aimed at increasing knowledge and skills of community members about nutrition and physical activity, also overlaps considerably with the DSME programme. The DSME programme aligns with HEHA action 17 of improved availability and access by high-need groups to affordable and appropriate programmes for weight loss, including maintenance. The initiative also aligns with HEHA action 19.2 of strengthening and developing networks between primary health care and public health to promote nutrition and physical activity issues ensuring effective participation from high-need groups.

3 Literature Overview

Issues of efficiency of SME programmes have led to considerations of group education rather than individualized education, whereby small groups of patients undergo an education process together (Tang, Funnel, Anderson 2006). Although literature directly comparing group and individual delivery methods is scarce, studies available invariably conclude that a group delivery method is at least as effective at producing positive outcomes as individual methods (Rickheim, Flader, Weaver, Kendall 2002).

In February 2005, a Cochrane systematic review was published. The review sought to identify the impact of group-based, patient centred training on clinical, lifestyle and psychosocial outcomes in people with Type 2 diabetes (Deakin, McShance, Cade, Williams 2005). The authors reviewed fourteen publications that described 11 randomised controlled trials and controlled trials involving 1532 participants. The review concluded that group-based training for self-management strategies in people with type 2 diabetes was effective in improving fasting blood glucose levels, glycated haemoglobin and diabetes knowledge. The self-management education was also effective in reducing systolic blood pressure, body weight and the need for diabetes medication. Further reviews have reached similar conclusions (Norris, Lau and Smith, 2002; Norris, Engelgau, Narayan 2001; Gary, Genkinger, Gauller, Peyrot, Brancati 2003; Renders, Valk, Griffin, Wagner, Van Eijk, Assendelf 2001; Lancey, Kimberly, Chyun, Grey 2000).

To date, no published studies have investigated the cultural appropriateness or effectiveness of group self-management education with Pacific Island or Maori populations in New Zealand. International studies tend to involve African-American or Latin-American populations or different ethnic minority groups found throughout Europe. One recent review article focused on diabetes interventions in socially disadvantaged populations (Glazier, Bajcar, Kennie, Willson 2006), a population disproportionately represented by Pacific Island and Maori in New Zealand. The article reviewed seventeen studies and identified barriers to effective diabetes interventions including, language difficulties, cultural beliefs, transportation, time off work, child care, low health literacy, and financial costs. The results of the study indicate that short-term group-based didactic teaching aimed at improving diabetes knowledge may be of limited value for disadvantaged populations. Successful interventions need to recognise cultural differences and levels of literacy so that diabetes programmes are relevant and accessible to their target population (Glazier et al, 2006).

4 Programme background

Documents supplied by the SME coordinator were analysed to create an overview of SME activity from 2005 through to November 2007. Documents supplied consisted almost exclusively of meeting minutes from the initial SME Workshops, later the SME Reference Group, and most recently the SME Steering Group. Update reports written for GPHO (Primary Health Organisation Group) and ProCare Network Manukau (ProCare) were also supplied by the SME coordinator. GPHO meeting minutes and interview transcripts from the evaluation were also used to provide greater detail where information was missing from the documents supplied. What follows is a brief summary of the major activities over the 2005-2007 period, but is by no means an exhaustive list of all efforts by all people involved in SME.

Discussion around the need for a self management education programme first began in 2005. Both CMDHB and ProCare independently, and without knowledge of each other's activities, began research around what an SME programme might look like in the Counties region. CMDHB develop an initial scoping paper for GPHO in September 2005 with an option of a centralized PHO delivery and funding model. A proposal was submitted to GPHO in December 2005. At this stage, ProCare became aware of CMDHB's SME plans and after discussion, abandoned their own somewhat different vision of SME in favour of a collaborative approach more closely aligned with that envisioned by CMDHB. The SME concept was endorsed by GPHO at the December 2005 meeting, with an amendment that SME begin by focusing specifically on diabetes. It appears that no other PHOs had significant experience in SME prior to engaging in the DSME programme as endorsed by GPHO. At this meeting GPHO committed SIA funds to employing DSME facilitators, and recommended that CMDHB fund the development of the DSME programme and tools, a central DHB based SME coordinator, and the training and ongoing support of group SME facilitators. GPHO did not endorse the appointment of CMDHB funded community based Maori and Pacific SME facilitators.

A detailed funding proposal was submitted to, and approved by, the Priority Initiatives Steering Group for a three staged implementation of SME services and funding of \$170,000.

In June 2006 the first Diabetes SME Workshop meeting was held. Attendees included representatives from TKOH (Te Kupenga O Hoturoa), MCHT (Mangere Community Health Trust), Ta Pasefika, Tamaki PHO (Primary Health Organisation), East Health, Diabetes Auckland, THO, ProCare, Waiora PHO, Waipareira Health, Diabetes Project Trust, Whitoria, CMDHB and the University of Auckland. Workshops were held monthly through to October 2007 and oversaw stage one – programme development – of the DSME programme. Important agenda items included drafting of DSME facilitator core competencies, development of facilitator training components, and discussion and finalisation of DSME principles, delivery model and referral pathways, amongst many other organisational and operational issues.

During this time, the recommendation of GPHO that community based Maori and Pacific facilitators should not be funded or appointed by CMDHB was overridden, and in October 2006 one Pacific and one Maori facilitator were employed. This action was justified by CMDHB to GPHO on the grounds that the appointment of Maori and Pacific facilitators under Maori and Pacific PHOs would limit the population reached.

Training of 17 facilitators was held during October 2006 and received largely positive feedback. The appointment of the CMDHB based SME coordinator also took place during October, as did the development of the DSME Manual and Facilitator Resource Kit. Facilitators were trained using a training curriculum adapted from The American Diabetes Association Teaching Outlines, during a training programme lasting for 11 days. The training included information about diabetes, risk behaviours, patient centred goal setting, and supporting lifestyle behaviour change. The training was designed with a strong focus on practice in order to give all of the participants an opportunity to gain confidence in delivering a patient education programme.

Following the DSME intensive training, facilitators were then expected to work with their PHO, primary care teams and communities in establishing and running group DSME. Once groups were formed, facilitators lead patients in a structured programme including topics related to diet, self care, physical activity and diabetes management. Each facilitator decided how they will distribute the content.

The first DSME group session commenced on January 24th 2007 and was run by THO. The group of 10 completed their last session on February 14th 2007. Feedback to the facilitator was overwhelmingly positive, with participants commenting particularly on the friendly atmosphere and group discussion that took place during the sessions.

In March 2007, the concept of a lead PHO was developed and introduced, and a PHO representative was elected as Chair of the DSME Steering Group, which had its first meeting in April 2007. The Steering Group took over from the previous Reference Group and was seen to place more power in the hands of the PHOs, with ProCare and THO sharing responsibilities as lead PHOs. As well as representatives from ProCare and THO, the Steering Group consisted of CMDHB staff, a self management facilitator representative and subject matter experts. A Maori representative was also

appointed in July 2007. Broadly, the role of the Steering Group was to guide DSME through the latter part of stage 2 – provide ongoing support of facilitators and oversee rollout of the programme – and stage 3 – the adaptation of DSME for generic SME and increase in patient throughput.

To this end, and in accordance with LBD KPIs, a communication strategy was drafted by a working group formed by the Steering Group. Work around the Whanau Support Project also took place during the second half of 2007.

In November 2007, a new Chair of the SME Steering Group was named. Interview transcripts document the intention of the Steering Group to begin work on stage 3 of SME – to expand DSME to a generic SME model – in 2008.

4.1 DSME Objectives and Programme Logic

4.1.1 Objectives of DSME

The following is an outline of the objectives of the DSME sessions.

By the end of the 12 hour SME sessions, participants are expected to:

1. Show improved attitudes towards their own ability to manage their diabetes
2. Have improved their diet, physical activity, glucose monitoring and feet care
3. Have reduced smoking

By the follow up period at three months, participants are expected to:

1. Maintain positive attitudes towards their own ability to manage their diabetes
2. Maintain improved diet, physical activity and self management behaviour
3. Have lowered their weight by at least 2kg
4. Have lowered their blood pressure by 5mm
5. Have lowered their HbA1c by 0.5%

4.1.2 Programme Logic

Figure 1 shows a representation of the programme logic. This diagram shows the primary stakeholders' common understanding of the pathways through which the programme will achieve its objectives. The programme logic has two main sections: process and outcome. The programme process includes inputs, activities and products, whereas the programme outcomes are the short-term, mid-term and long-term results which are expected to occur as a result of the implemented activities.

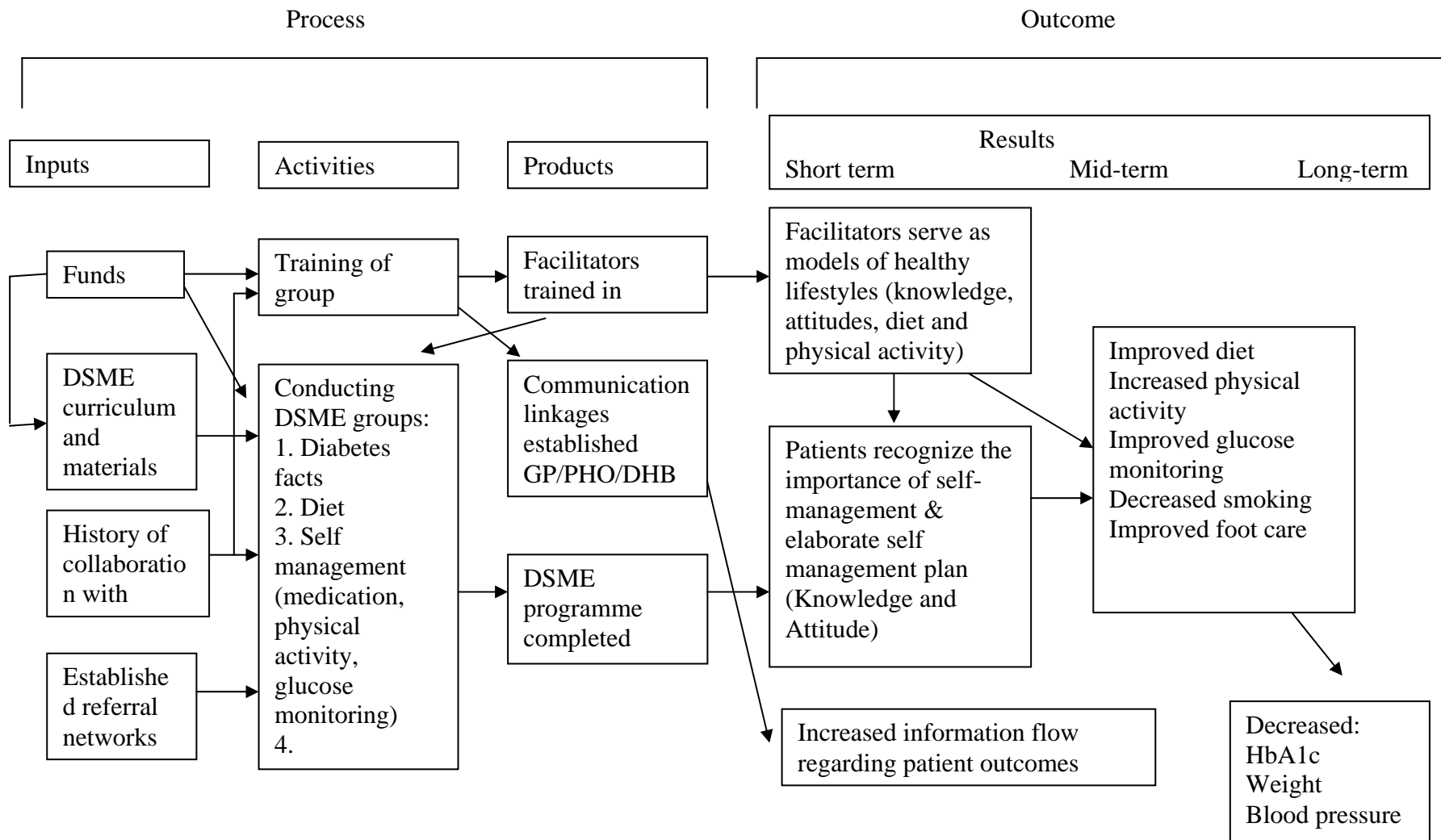
Programme inputs include the funding available to implement the SME initiative, and the existing material and curriculum. CMDHB has a history of collaboration with PHOs for a number of projects, which was expected to serve as an asset in establishing functional collaboration with all primary actors throughout the process.

Two main activities were planned as part of this programme; first to train facilitators in DSME through an 11 day workshop, and second to form and carry out DSME groups with patients referred by GPs. The first of these activities took place in 2006, and resulted in 17 people trained in DSME, although not all were meant to facilitate groups themselves. The second activity began in January 2007.

The two implemented activities were expected to lead to basic products which are trained facilitators, a group of patients who have completed group DSME, and communication linkages established between facilitators, GPs and programme coordinators in order to share data regarding patients.

With regards to expected programme outcomes, at the short term, facilitator training was expected to have increased facilitator knowledge, attitude and motivation to be a role model of healthy behaviour for group participants. The SME group experience, as well as the positive example set by facilitators was expected to also impact participants' knowledge and attitudes regarding diabetes self care. At mid term, participants were expected to change their behaviour related to diabetes self management, improving their diet, increasing their physical activity, improving glucose monitoring and self care as well as decrease smoking. At the long term, these behavioural changes were expected produce lower HbA1c levels, decreased weight and decreased blood pressure.

Figure 1 Programme Logic



5 Methods

A mixed methods approach was used in this evaluation, using a combination of existing data sources such as programme reports and meeting minutes, as well as additional quantitative and qualitative data collection.

5.1 Qualitative methods

5.1.1 Document Analysis

Documentary evidence of the programme including the training and resources given to facilitators, patients and GPs, as well as meeting minutes informed the context of this evaluation. The documents were coded to identify key themes and emerging ideas from the DSME programme.

5.1.2 In-Depth Interviews

In-depth interviews were conducted with key stakeholders, including DSME programme facilitators, managers and the CMDHB-based programme coordinator. Interviewees were contacted via email or telephone in order to explain the purpose of the interview and ascertain interest and availability to participate in the evaluation. Once interviewees agreed to meet with a member of the evaluation team, a participant information sheet and consent form was provided. Interviewees were recorded with participant consent, and interviews were transcribed for analysis (see Appendix A for interview schedules).

5.1.3 Focus Groups

Participants from selected DSME groups were asked to participate in focus groups at the end of their last DSME session. The focus groups identified the impact of the programme on participants' perceptions of their diabetes knowledge and self-care, using a guide with open ended questions (see Appendix B). Participants were informed by their DSME facilitators that they would be presented with an opportunity to participate in a focus group and the voluntary nature of the focus group was made clear. On the last day of the DSME sessions, members of the evaluation team were invited in order to explain the purpose of the evaluation, provide the participants with information sheets and consent forms, and finally to conduct the focus groups with those who accepted the invitation. One DSME group lead by the CMDHB based Pacific facilitator was held in Samoan, and thus the evaluation team deemed appropriate to run the focus group also in Samoan. The focus group guide was translated, and two research assistants fluent in Samoan were recruited to conduct the activity. Most focus groups were recorded with participants' consent, although on one occasion a participant expressed discomfort towards the use of the recorder and therefore extensive notes were taken during the evaluation and used in lieu of a transcription. Table 1 refers to the types of data collected as part of this evaluation.

Table 1 Different types of data collected as part of this evaluation

Type of data collection activity	Sample size
Participants in database*	193
Documents analyzed	17
Interviews with facilitators	7
Interviews with managers	5
Focus groups with participants	8
* Many participants had incomplete data.	

5.2 Quantitative methods

Quantitative programme data included both a health attitude and health behaviour questionnaires (see Appendix C and D) which were developed and adjusted by the evaluation team in conjunction with primary stakeholders. The Health Attitude Questionnaire was presented as a one page tool ($N=7$) with the following items to be responded to with a five point scale:

1. I think my health is...
2. Managing my diabetes is mainly my responsibility
3. I am motivated to care for my diabetes
4. I am confident that I can manage my diabetes
5. I know enough about diabetes to make choices that are right for me
6. Most of the time I feel good about living with diabetes
7. My understanding of diabetes and its management is...

Response options for questions one and seven ranged from excellent to poor. Response options across questions two to six ranged from strongly agree to strongly disagree. All items were scored on a 5-point Likert scale anchored with 1 (*strongly disagree or poor*) to 5 (*strongly agree or excellent*). As a result, participants with higher scores indicated more positive attitudes.

The Health Behaviour Questionnaire was also presented as a one page ($N=14$) tool with a question predicate asking: “In the last seven days, how many days did you...” followed by a list of specific questions related to the following four sections:

1. Diet ($n = 5$)
2. Physical Activity ($n = 2$)
3. Smoking ($n = 2$)
4. Testing, medication and foot care ($n = 5$)

Numbers displayed in the results section relate to the number of days each behaviour was carried out in the previous week. Clinical data such as HbA1c, BMI, waist circumference and blood pressure was collected via the GPs with patients’ consent.

A database was developed by the evaluation team in order to systematically record programme data. Microsoft Access was used as the platform for this database given that most PHOs had this software available in their standard software package. Data was mostly entered into the database by facilitators or other PHO staff. Although the database was developed at the beginning of the evaluation period, disagreement

among stakeholders with regards to the appropriateness of the database delayed its implementation by approximately six months. The repercussions of this delay are discussed in further sections.

5.3 Overview of data collection points

Referrals to the DSME programme were generally received by facilitators via GPs or practice nurses. With the referral, baseline clinical data was meant to have been shared, including clinical outcome measures of HbA1c, BMI, waist circumference and blood pressure. At the start of the DSME programme, facilitators were to ensure that all participants completed a health attitude and health behaviour assessment. These same assessments were to be repeated at the end of the last session of DSME. The evaluation team then requested participation in a focus group to discuss the groups' experiences with the programme. All facilitators were meant to ensure that participants were followed up at three months after the completion of the programme, where participants would complete the health attitude and health behaviour assessment questionnaires for a third time. In addition, participants were meant to be assessed by their GPs to obtain a second set of clinical measurements. Most PHOs' systems required facilitators to request the clinical outcome data from GP surgeries directly. Finally, interviews with key stakeholders were held during the second half of 2007 when most PHOs had had the opportunity to run several groups.

5.4 Analysis

Qualitative data were analysed to identify key themes emerging in the data. Thematic analysis identified any comments or sub themes relating to key categories, guided by theory and evaluation purpose (Miles & Huberman, 1994). The key themes for this evaluation were based on the interview schedule and included barriers and enablers to participating in the programme, lifestyle changes prompted by the programme, appropriateness of programme resources and strategies and recommendations for programme improvement.

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS version 15). Paired t-tests were conducted to compare data from the health attitude and health behaviour questionnaires through time. Results were considered statistically significant when they reached a p-value of less than 0.05. Comparisons were drawn between: (1) participants' health attitudes and health behaviours pre-DSME and post-DSME (generally involving a 4-6 week between measure administration); and (2) participants' health attitudes, health behaviours and clinical outcome measures pre-DSME and three months after the completion of DSME programme. The first comparison assessed changes that were likely to be resulting from the programme, and the second comparison assessed any changes sustained over time.

6 Results

As explained in Section 4, this evaluation was carried out using a mixed method approach. In this section qualitative data are presented first gathered through focus groups and interviews with participants, facilitators and managers of participating PHOs. Following this, quantitative data exploring participant outcome measures are presented.

6.1 Qualitative results: DSME participants

As primary recipients and beneficiaries of the DSME programme, participants' opinions and experiences throughout the programme were considered extremely important in ascertaining the value of this initiative. This section presents participants' opinions about DSME, looking particularly at motivators and barriers to attending the programme; motivators and barriers to change; the impact of the programme on their family and friends and programme delivery.

6.1.1 Participant attendance to the programme

6.1.1.1 Motivators for attending

Participants were asked what motivated them to attend a DSME group. The most common motivator was a desire for more information. Specifically, participants commented that information received from GPs was often inadequate, and that DSME provided a way of gaining the information they desired.

The doctors are next to hopeless in handling a condition like this. You go in, have a look at you, send you away and ask for your money. But they don't cover all detail so you've got to find it out yourself. And this is one avenue of finding out.

A desire for information was often linked to a concern for health and a desire to avoid worsening of their condition and/or complications. Many participants mentioned a family history of diabetes and specifically spoke of wanting to avoid complications they had seen in family members. New diagnosis, current complications, and co-morbidities were other motivations.

For me myself I wanted to come because I had a heart attack, I'm still very young, and I wanted to learn how to look after myself as well...so that I'm able to prevent and maintain and manage my diabetes. I was kind of like scared in to coming kind of thing.

You know for me, a lot of my family have actually died through diabetic related problems, loss of limbs and all that sort of stuff, and I didn't want to go there.

And that is the reason why I have chosen to participate in this programme, because of my concerns of having to deal with machines because my husband has been through it all and I really do not want to end up like that.

Many participants attended after being referred by health professionals. Some participants stated that they would not have attended without the persistent pressure of a health professional, described as “very consistent and very direct”.

Some participants were concerned with preventing diabetes in other family members, or within their community.

I want to participate so I can know exactly how can I prevent myself from the diabetes, and how can I get me help as well as my family because the thing now is not only me, but is prone to my kids as well and the coming generations.

In our culture it's very hard for some of our people to acknowledge that they have these types of thing. So I want to be able to help the elders in my family as well to learn about it, to manage it, and to maintain a better health regime kind of things.

The open and welcoming atmosphere created by facilitators was important in motivating participants to return to the group each week. One participant said “*you made us feel really welcome, and we want to come back next week, you make it fun*”.

6.1.1.2 Barriers to attending

Information about barriers to attendance was gathered from participants who were obviously present at the focus group discussion held during the last session of DSME. Therefore, this section represents the views of those participants who were in fact able to attend. Overwhelmingly the most common barrier cited was language. Language acted as a barrier through three mechanisms. Firstly, participants with limited English and without translators were unable to understand the content of the sessions so perceived little benefit in attending.

It's just as simple as a thing of our people just not understanding fully what the question is. Because you throw a question to one of our elders or one of us here, we hear it differently because we speak two different languages. And that's one of the biggest barriers that I see.

Secondly, an inability to understand and engage in the sessions may result in feelings of shame and isolation which act to prevent attendance.

The shame of coming here, they do not know what you're talking about and they're sitting here doing nothing.

Cultural and religious beliefs may act as a barrier to health services. One older Pacific couple commented that previously they had not realised that they could manage their diabetes, and that God was in control and praying was the only effective intervention.

We thought every sickness is treated by God. No matter how bad, when we pray God will come and wipe it off. That's the idea behind most of us. It's all kind of the things to do with faith. When you believe something, you do it.

6.1.2 Programme Impact on Participants

6.1.2.1 Reported Changes

The most common impact of the programme, reported by all participants attending focus groups, was an increase in their knowledge and understanding of how to manage their diabetes.

When I came here I thought I have type 1 diabetes but then I got to learn I have type 2 diabetes. There are heaps of things that I learned here.

We thought diabetes you stop eating sugar and that was it. But it's not, it's huge, there's so many different things. And it's opened our eyes to a lot of it, so we'll be fine now.

For many participants, an increase in knowledge and understanding led to a greater sense of control over their diabetes, and greater confidence in their abilities to self manage.

Better understanding and better control, I know it's up to me. GP's are there for help if needed, but you can look after yourself.

Now when I go shopping I feel confident, I know what I'm looking at [on food labels], it's awesome.

Many participants mentioned being more aware of their health behaviours and making small changes during daily activities, particularly reading food labels, and how this enabled them to make changes.

You do start looking at the backs of packages and you don't go back for seconds, you do change your lifestyle. So everyday now I do the 7 flights up and 7 flights down at work, and purely for health. But before that I went "There's no way I'm going to go up those stairs".

In my case, every time we go shopping we make a list of the things we learn that helps us to fight diabetes, and instead of buying the things we normally just buy we have to look and check all the labels and see if it's good for me or not. That's how we do our shopping now after we came to the course.

Motivators and enablers for change

The most common motivator mentioned was the group itself taking part in the DSME programme. Discussion of personal experiences and not feeling isolated, motivated participants to change.

And just everything about the group has motivated me a great deal, it's changed my life, I've found out who I am, oh gosh nothing to hold me down now. So that's what the group has done for me.

But coming to this course and listening to other people who have got the same situation I've realised that it's not something that you have to suffer by yourself with, talk to people that aren't obviously dying or anything and you just feel a bit more comfortable about the situation

For many participants, the sense of control gained through learning about managing their diabetes acted as both an enabler and a motivator for behaviour change. In addition to this, families were important in motivating and enabling behaviour change for many participants. A desire to live longer and be healthier for their families was cited as a motivator by some participants. Supportive families were important in enabling change, particularly around eating. Support from families was also an important motivator for some participants attending the group.

I talk with my family about diabetes, sometimes we discuss what we want to eat for dinner, usually add salads and vegetables like tomatoes and coleslaw

Barriers to change

Although the group interaction acted as a motivator for change for many participants, a drop in motivation following the completion of the group sessions, and ending of group interaction, was predicted. For this reason, many participants from multiple groups suggested a buddy system of follow up meetings to maintain group contact and associated motivation.

A buddy system would be good, for continued motivation after the end of the programme

...yeah we've finished the programme, but we're looking for a place to go to so if somebody can find a place that would be good for us, some where we could keep on meeting and find out more about diabetes and that sort of thing.

Getting used to eating different food was also cited as a barrier. Although some change is necessary, for many people the barrier of change was more likely to reflect a lack of cultural appropriateness of many of the food suggestions given in the group sessions. A stronger emphasis on how to cook culturally relevant food options in a healthier way was regarded as necessary by many participants

You're not putting in the foods that we Samoan people eat, the corned beef, and the povi masima and the pork... it would be nice if we have all our Samoan food.

I saw some palangi eat the chicken with the bread or stuff like that but us we cannot. You can eat the vegetarian food for about 3 days, you can feel weak. You can feel weak when sometimes my Mrs makes some stuff like bread sandwich, I come back I feel weak.

Unhealthy and unsupportive social environments also acted as barriers to change for some participants. In particular, church functions and unsupportive family were highlighted. Some participants commented that controlling portion size was one way of making positive changes when it was not possible to control food type.

In my house it's the family. They don't all eat what I eat and that's a bit difficult at times.

One participant identified financial constraints as a barrier against changing dietary habits.

I think, one of the barriers, low income. Low income you buy cheaper food, with fat and the stuff, that's the kind of food you are having to buy.

However, surprisingly, several other participants commented that making healthy changes reduced their food expenditure.

Usually I will spend \$80 on our groceries for meats and everything for the week but now I spend only \$50 as the recommended diets are quite economical for diabetics ... Now we cut out a lot of other foods and we eat more vegetables that are cheap.

6.1.2.2 Effect on family and friends

Participants commonly discussed changes occurring in their family's health knowledge and behaviours. This was often aided by family members attending the group sessions with participants. Accompanying, children and spouses reported gaining more awareness for themselves and not only for the diabetic patient. Also, many families reported that when the way food is prepared changes in the household, everyone benefits by the improved cooking, regardless of whether they are attending the program or not.

The kids don't realise it but they're eating healthy anyway, the way I cook it. Like mince, they love mince so I boil it first then drain everything out, then add all the veges and whatever else. And they don't know the difference. They just know they can put it on a sandwich the next day and there's no fat sitting on top.

On the other hand, some participants commented that their family members were not changing their behaviours, which was often a concern for participants.

I have a sister now who, she's on insulin, she's on metformin, she's classed as morbidly obese, she's only about 4' 11" I think, and she won't listen and I can't get through to her. I still ring her up, everything I learn you know, I'll ring her up and blast her with it.

6.1.3 Programme delivery

Overall, participants had overwhelmingly positive opinions of the programme and its delivery. In particular participants enjoyed the interaction with other group members and felt the style of presentation encouraged group interaction, aided them in deepening their understanding and motivating them to change. The location, time and length of sessions worked well for participants attending focus groups, however it should be noted that focus groups were conducted during the last session so were unlikely to include any participants who faced significant barriers attending. The resources used during group sessions were described positively by participants. Participants enjoyed being able to touch and see resources such as the rubber food, and felt that this aided their learning.

It was so clearly explained and so not only verbally but also for the eyes and the touch, you know, meaning that when it comes to the drinks and the food and all that it was all on the table so of course they all had to participate to put in to categories which got more sugar, which got more fat, and I thought to me as a supporter that was very good. Because very often people talk but it doesn't comprehend until the eyes, the touch, you know.

The use of pedometers was also reported to provide motivation for physical activity.

But since he got the new thing [pedometer] and all that he was good, he was walking, it was like a big toy to him, he says "See see, 300" and I said "You need to go more than that!" And this was all around the house. So that was one of the things they gave us that was very, very good.

Participants from one group in particular appreciated the large number of information sheets and pamphlets that were distributed at each session and felt that they helped to reinforce messages received during the sessions. Participants identified the group sessions as important for accessing and comprehending the resources.

But not only are they telling us here but we're getting lots of hand outs on what they've talked about to take away and to read and make it sink in a bit when we get home.

These are things that we could have asked our doctor if we'd known what to ask. But here you get told what to ask, or you're shown all the different subjects and topics that are pertinent to having diabetes.

The style of presentation, friendliness and approachability of the facilitators was continually highlighted by participants as a positive of the DSME group sessions. Participants contrasted the depth of information and easy going conversational style of the group to the limited and negatively framed discussions with GPs. Participants felt more comfortable discussing issues within the group than with their GPs.

And because I think the other thing that is very important is [the facilitator], she's got the personality, she's got the attitude which is quite good, she's very friendly. I for one, if she wasn't I wouldn't have come.

The increased time compared with GP visits was important for participants and allowed in depth discussion of questions and experiences. This was seen as a major positive and participants often contrasted this against the limitations of GP consultations.

We could ask a lot of questions which we cannot do with the GP in 15 minutes. Very interactive.

It is true. Doctors only give you the drugs but they don't give you an explanation of it and its use – then I get them from the pharmacists and I drink yet I still am clueless of its benefit to me.

In contrast, some participants viewed the group sessions as complementary to their GP visits, reinforcing the same messages and deepening their understanding.

It's reinforced what my doctor is telling me, and by being able to ask one to one all the questions you think "What if this happened" or "How do you do things? What should you eat?" and basic guidelines.

The use of simple language was highlighted by some groups as important in aiding their understanding. Facilitators have been able to adjust their language to suit their groups' needs.

It's not a lot of medical words that people say and you don't even know what it means but you be polite and go "Oh yes, oh yes" and go away and think "Did I really learn anything?" So this is a way everyone's understood his style.

Well actually we've had nobody else like [facilitator]. He talked our language. We get other professionals coming in and using all these big words and we've got to go "Hang on a minute" you know? But with [facilitator], we never ever said that because he spoke our language.

Role modelling was an important factor in one group. Participants of one group commented that the actions of the facilitator were a motivating factor. In other groups, facilitators setting goals were also seen as positive by participants. Participants of groups where the facilitators themselves identified as diabetics commented that this was of great benefit to their learning, as they felt the facilitator was able to relate to their experiences and convey messages in terms they could understand.

Now, when I see [the facilitator] running around and walking about hastily, I long to be fit and healthy looking like her. And that is the reason why I have chosen to participate in this programme

But it's just getting it from somebody that's had diabetes, and has got diabetes, we've never had that. It's just somebody from our community that usually comes and talks to us. So with [facilitator] it's totally different.

Guest speakers, supermarket visits and practical demonstrations such as how to use meters were all cited as particular highlights.

6.2 Qualitative Results: DSME facilitators

This section presents facilitators' opinions and experiences with DSME. Of the 17 people trained as DSME facilitators, only 7 remained actively involved at the time of interviews. As a result, the facilitators interviewed all displayed high levels of motivation and a genuine commitment to SME as an important part of the effective management of diabetes. The attitude and excitement of many is reflected in this quote.

I didn't know what a self management facilitator was, what's this self management stuff? So when I read some of the stuff ... I said why the heck haven't we been doing this 10 years ago? This is crazy! This is obvious you know.

This motivation was an important factor in facilitators overcoming barriers and ensuring positive experiences and outcomes for participants.

6.2.1 Programme Delivery

6.2.1.1 Referrals

Enablers for Referrals

Referral rates tended to be related to process factors operating within PHOs. One group of facilitators were able to refer patients directly to DSME without the prior approval of GPs. This enabled the facilitators to seek out and refer suitable patients and bypass the necessity to develop buy in amongst GPs.

We didn't have to go to GPs to get patients because our system is different. We directly involve with patients without having to go through the GPs, that's the system. In the system we can approach a patient who has diabetes and call them.

However, for the majority of facilitators, engaging GPs and practice nurses (PNs) was necessary to receive referrals. For many this was difficult at first, but as GPs and PNs became more familiar with the DSME programme, they became more likely to refer new patients. Familiarity often came from patient feedback to GPs about DSME, as well as by sitting in on DSME sessions in one case.

I think when I had my workshop with them, they came and sat in on it, their managers and that and they were quite happy with what they saw, so they've carried it on.

Programme champions within practices have also been important in some cases. Identifying and engaging programme champions has generally been enabled by previous professional relationships between facilitators and practice staff.

For many facilitators, face-to-face contact with those responsible for referring was cited as important in increasing referral rates. As well as educating the practice staff about DSME, this may also increase familiarity with the programme which was also seen as important.

One way of attaining face to face contact was through continuing education sessions run periodically with clinical staff. Facilitators reported mixed outcomes in terms of referrals resulting directly from presenting at these sessions, but all saw this as an important part of promoting DSME to clinicians.

Their monthly meetings, they come along and have guest speakers and it's about upskilling, keeping them upskilled in what's the latest whatever... practice nurses and GPs attend a cell group usually once a month. And so going along to cell groups and doing presentations there is a good way.

Experience working with practices was another factor that enabled some facilitators to engage clinicians and obtain more referrals. This came from knowing the staff, as well as from knowing which staff to focus promotion activities towards.

I work with practices so I know which people are more receptive and who's more likely to refer patients anyway, so I sort of know whether it's a practice where you tackle the doctor or a practice where you tackle the nurse... That's the advantage I have to coming in to doing this because I already have that relationship coming in to practices.

For one facilitator, links with the community were important in meeting and attracting potential participants.

Like I go visit him at his unit and then the next thing his neighbours are going "Oh, what are you doing here?" And the next thing we organised a whole group from that community...so it's just snow balled on like that.

Many participants also self refer to the programme after hearing positive feedback from family members or friends. In one case, a local newspaper article about DSME generated a large amount of interest and a number of self referrals.

Barriers to Referrals

Getting referrals to DSME groups was a major problem for some facilitators. Generally, a lack of referrals was due to low profile of DSME within a PHO, and time

pressures on GPs preventing facilitators promoting DSME adequately and GPs being able to take the time to familiarise themselves with, and consider using DSME.

It's getting the support because they're each run from their individual PHO. So for me it's getting the support from my PHO and getting the support of the doctors to refer, and nurses, in the individual practices to refer patients.

Time pressure on GPs and nurses was cited by many as the main reason for a lack of buy in and low referral rates. It was the facilitator's perception that GPs and nurses were not necessarily against SME, but rather had insufficient time to consider its value to their patients and consider utilising the DSME programme.

But I realised two of the GPs, again it's probably not that they weren't interested but they're almost two of the busiest practices in South Auckland, so they're just churning through the patients. So they're not having a lot of time a) to promote it, and b) yeah to really do anything different than perhaps point the patient to the poster on the wall.

Although time pressure was seen as a major explanation of low referral rates, GPs knowledge of and attitudes towards SME were also perceived by some facilitators to be barriers. One facilitator reported that GPs were refusing to refer patients that would likely benefit from DSME without consulting the patients themselves.

I was a bit concerned that the GP had made the decision for the patient, that he wasn't going to refer them because the patient probably wasn't going to go. But he wasn't giving the patient the opportunity to decide for themselves whether they wanted to go or not.

One facilitator commented that GPs often raised potential barriers to patient attendance but failed to consider solutions. This facilitator perceived this as a lack of buy in. It was also noted that GPs could not be expected to have as strong a commitment to DSME as facilitators given that not every GP had been involved in its development and that an understanding and interest in SME as a concept may be rare.

I presented to them at the GP meeting... one of them said "Oh we've tried this before and it won't work" "We tried to get groups" or "Our patients don't like to come out in the evening" or "Our patients are working so you won't get them during the day"... so we were kind of confronted with barriers. Yeah GPs obviously do know their patients really well but I'd anticipated I was going to get "Hey this is a really good idea and we can support you with this".

Facilitators also reported finding it difficult to arrange times to speak with practice staff about DSME. Usually this was due a lack of GP and nurse time, or the necessity to compete with other groups demanding practice time.

It took like 2 months to get a time with the [name] practice because they've got a huge practice and they've got speakers booked in to their monthly meeting...So you've got to wait for a spot to become available and you can get in and yeah. So yes that was a bit difficult.

In the case of one facilitator, difficulty in arranging a time was due to reception staff having either no knowledge, or a negative view of SME. Even when facilitators were able to get sufficient access to practice staff to promote DSME, this was often not enough to ensure referrals.

6.2.1.2 Delivery

Enablers to Delivery

Many facilitators commented on the facilitator follow up meetings that have been organised by CMDHB. Relationships among facilitators had developed during the training, so facilitators appreciated being able to meet again and discuss issues that they have faced within DSME. Although the meetings were appreciated, many facilitators felt that they were too formal, and suggested organising meetings with the sole purpose of catching up and discussing DSME informally.

As far as the whole group, yeah we've had two or three meetings together with [CMDHB], but they tend to be more, you know "We want to give you this information" kind of meetings... More just hearing how everybody else is getting on that's doing it, that's more valuable really than anything else.

Facilitators mainly drew support from fellow facilitators that they had made contact with during training, or other colleagues within their own organisations. Most appreciated having someone to talk to about issues they were facing rather than help with any specific content or organisational problems. An unintended benefit of sharing resources was that facilitators kept in touch often and were able to discuss their experience with DSME whilst collecting resources, many commented that this was valuable and important to them, as some reported feeling somewhat isolated as the only SME facilitator within their PHO.

And then having the other facilitators to call on or just talk to if you need to, we can ring each other about getting the resources and end up having a big conversation about what's going on. So that's been good.

One facilitator reported visiting and sitting in on another group as a way of picking up skills and learning about how other groups are run.

I went out and sat in on their group. Their group is good...They're actually an awesome example to watch how to facilitate and to learn from. Because they both work well together and they really capture the interest of the group, get everyone involved.

All facilitators reported that the training was thorough and useful, and prepared them well for their role as SME facilitators. The manuals were also reported to be a useful tool.

I actually felt quite well prepared. Because to me the training was quite thorough and then there was support afterwards. ... the structure and what we

were going to say to the groups, yeah I had a lot of information from those manuals, and had it covered.

Most facilitators were able to draw on previous experience usually within health, but ranging as wide as experience in teaching and presenting to church groups. Previous knowledge and experience were seen as sources of confidence for many facilitators.

I think my previous roles, that I've had, I already had the training. Because I was already facilitating groups. So I had a lot of the skills that they wanted as a facilitator when I went for the job at ProCare.

I also took clinics at the centres so I exactly knew what people wanted where they're lacking and how they need education... So it's all married very well with each other so that has given me a lot of confidence...

An important enabler of the DSME programme was the freedom given to facilitators to draw on their experience and tailor session content and presentation style to each group. Although content remained the same, facilitators were able to adjust their presentation style to suit their audience. For example, many simplified concepts that participants did not understand or researched food options that participants requested. Another group spent time singing and dancing to engage participants as a way of coming together as a group.

PHOs were also a source of support for many facilitators, usually taking the form of supportive managers or accessible colleagues. For some, assistance has not been required so far, but knowing that people are available if needed is described as reassuring for them.

Yeah because I'm part of the Health Promotion team, we've got a very strong health promotion team there...who's very supportive of our roles. And so, not that I really asked for any help, but they're there.

PHOs have also been able to cooperate allowing facilitators to work together across PHO boundaries. This type of organisational flexibility was seen as an enabler by facilitators. Facilitators working in teams commented that this provided a supportive environment that was enjoyable to work within. Because facilitators come from varied backgrounds, they often have complimentary skill sets that improve the delivery of sessions when working in teams.

Almost all facilitators interviewed commented that the sense of satisfaction gained from running DSME sessions is an important motivator for them. In particular, seeing changes in participants behaviours, and the appreciation shown by participants, made the role of the SME facilitators deeply rewarding.

Every time we run a group its like you're on a high, on a buzz, because the patients are on a buzz and they're coming back and saying "wow this is wonderful" and "Why isn't everyone getting this information?" ...so that keeps you going, it absolutely does. And seeing people making changes, you know, they're coming back and saying "we're doing this differently" or "we're eating this differently" or "we're buying this differently" you know

they've started doing whatever exercise, or yeah. That's really rewarding. You actually feel like it's making a difference out there.

For one facilitator, the use of a translator allowed participants with little English to engage in the group sessions meaningfully. Other participants were not reported to be distracted by the translator talking during the sessions, and in focus groups raised it as a positive as they felt it allowed all members of their group to become closer.

I know that that group, they were group, they just did enjoy having, there was no thought of "Oh what a bloody nuisance having [translator] translating" there was just absolutely not. But that's Counties Manukau really, most people are open to those other cultures.

Barriers to Delivery

Although the facilitator training was reportedly highly useful, many facilitators commented that the training did not provide adequate information about other cultures, in particular Pacific cultures. Many facilitators felt unable to discuss healthy food choices that were culturally relevant to some groups, and that this impinged on their ability to effectively facilitate DSME. Others had some knowledge of Pacific food but felt that the resources were not useful when discussing this type of food. One facilitator commented that, rather than a lack of knowledge, having to present to many participants from different cultural backgrounds was difficult, and that presenting to a group where all participants shared a common cultural background was more effective.

I feel I don't cater for [the Pacific] population. I mean it's ok, they like me and I get on with them but I don't have the language and that cultural understanding... the Pacific Island [people] are very respectful so they say yes they understand but I don't know that they really do.

Like if it's Samoan and Tongan yes there are barriers to it because I wouldn't know exactly what they eat. And if they eat something unhealthy I wouldn't know how they could make it, make a few changes.

Despite this, all facilitators agreed that this became less of an issue as they gained experience working with different groups.

The most commonly mentioned barrier was the sharing of resources, specifically the rubber food. Facilitators reported spending large amounts of time locating, and travelling to collect resources that were shared between them. This was a particular problem for many for whom DSME was only a small part of their job responsibilities. As well as being an inconvenience, it was felt that the time taken to locate and collect resources could be better used on other tasks.

Before there was only one and so all of us was sharing there one box of food, and so it was just dynamite, who had it, and you know who could get it next and you know. And the good labels as well, there was only 1 set of that and so whoever had the food labels the next person who was running the programme

the next day you had to make sure you could get it to them and that was a real pain.

Because if you've got to drive half an hour to Counties at Lambie Drive and the drive half an hour back. I mean that's an hour gone just to pick up food models or whatever, that's after I spent half an hour trying to find where they are.

Many facilitators commented on the lack of any system to track the resources, and that such a system would have made the sharing of resources far easier. It was reported by facilitators that this suggestion had been made repeatedly to CMDHB but no action taken. One facilitator resorted to buying a set for her own use.

Facilitators consistently reported spending more time on DSME than their recognised allocation. Tasks involved in the organisation of groups, including contacting participants, buying food, locating and collecting shared resources, setting up the room, and promoting DSME to practices were seen as the main reasons for the large amount of time required, rather than the facilitation of groups themselves. Some felt that an increase in participant numbers would be impossible to cope with unless a greater allocation of their time was made to DSME.

Because it does involve a lot of work even though you think it's just 3 hours in the evening, but it's after hours, you've worked the whole day and then you can't file the reports, you make copies, you grab all the food and the posters, you run around and do things and you know? It's not as easy as it looks... it's not just 3 hours it's more than that.

Although facilitators reported long, often evening hours, many appeared to have a belief in DSME that motivated them to put in this extra effort. However one facilitator noted that if DSME continues to grow, greater and more accurate acknowledgement of the time taken by DSME and appropriate remuneration would be required to maintain facilitator enthusiasm.

[If demand increases] I think the PHO or whoever wants this to be sustainable has to identify that as additional work and probably remunerate accordingly, because otherwise you lose interest. Because the thrill of doing it after some time comes off, it becomes your job.

Facilitators also commented on the large amount of content within the DSME programme. Many felt that future changes should allow time for group discussion and questions around content, as currently discussion time puts pressure on time limits and often results in sessions running over time, content being skipped, or discussion having to be stopped. It should be noted that one PHO has chosen to implement a shortened version of the course involving four sessions instead of six sessions.

We are struggling to cover everything in four weeks. Some groups we can because some are more absorbing than other groups. Some groups they tend to ask more questions and we find it more difficult to cover everything.

Facilitators reported that their ability to present DSME sessions was often sensitive to issues such as staff leave time. In one case this prevented the use of a translator, but did not affect session delivery; in another, the delivery of sessions was threatened by a shortage of trained facilitators.

Finding a venue was difficult for some facilitators. An absence of funding for venue hire was also raised by one facilitator.

But the problem will be if I want, because I've said I want this to be in their communities, so you know if I want to do one in the other areas it's finding a venue.

PHO support varied but was generally high at the time of interviews. However one facilitator predicted issues with management would arise if SME began to demand any more time, and that this would threaten the sustainability of the programme within this PHO.

The issue of having to “sell” DSME to PHOs and health professionals within PHOs was also highlighted as a barrier to programme delivery. One facilitator in particular commented on the lack of support and engagement from their PHO, attributing it to a lack of involvement of PHOs by Counties.

I would have also had some way of, like I say, engaging my own PHO right from the beginning... I've just felt like the rest of the PHO has been disjointed, I've done this training and then I had to go back and sell it to them. Whereas if there was, I don't know if they were invited to one session in the training or something then it might have been “Ok yup, this is how we're all going to do it” and then just easier to run.

The PHO funding formula was also seen as a barrier by one facilitator working within a reportedly low need PHO.

6.2.2 Programme Impact

6.2.2.1 Impact on Participants

One of the major impacts discussed by facilitators was the social connections made within each group. This was reflected by the group members who frequently cited being able to share their experiences with other diabetics as one of the major positives of the programme. Facilitators reported that the social connections increased participants' engagement in the programme and was a motivating factor for them coming to the sessions.

I was surprised that they kept coming every week, like I thought we'd drop off our numbers over the weeks and we haven't, people seem to keep coming back so they do do the whole course and then are sad when it finishes, you know they want to keep doing really. And I think it's having that, part of that is they've got to know other people with the same condition and it's a little bit of support, you know?

Facilitators perceived a positive knowledge change in many participants, increasing their ability to discuss their diabetes with health professionals in meaningful ways.

Also they're more empowered to discuss their own management of their diabetes with their practice nurse and GP which of course is what we're really trying to put across.

As well as knowledge change, facilitators perceived a positive attitude in most participants. This was shown through participants engagement with the programme, information seeking behaviours and a general shift in the participants self management attitude.

The changes that I've seen with a lot of them, or almost all of them are their self manage attitude, like the wives were saying " this is the first time my family saw my husband got up early in the morning take all his medication on the table, put on the kettle, make his toast, sit on the table have his breakfast and take his medication and check his blood sugar. He never did that before."

Changes have not been universal and facilitators reported that a minority of participants are not engaging with the programme or making changes. Despite this, facilitators perceive that positive changes are occurring in the majority of participants.

6.2.2.2 Enablers to Change

Facilitators reported that the group acted as a source of motivation for many participants. Less motivated participants were encouraged and motivated by the presence of more highly motivated participants. Facilitators also felt that the social side of group interaction was a major motivator for attendance.

Because yeah, if you have someone that's motivated, a couple of people that are really motivated and ready for change in the group then they stimulate and motivate the rest of the group. So you know that second group were like that, they had three probably that were all really ripe and ready for change, and they led the rest of the group.

Many facilitators alluded to a sense of empowerment being generated within participants. Facilitators perceived that knowledge change led to a sense of control and empowerment that was reinforced when participants began to see changes in their clinical outcomes.

I think that really empowers the people in my first group, it's seeing the difference from the knowledge they have learned from the training and seeing the difference in the blood sugars and the way they feel and they're able to manage things themselves.

Involving participants in discussions, and giving them a sense of belonging and 'place' was an important motivator for attendance and increased participant

engagement. Often, this style of presentation was contrasted against the rushed nature of general practice visits.

They just sang away, laugh away, and it's there space, it's there time, and that's why they said "[Facilitator], no, the GP practice is more of a doctors place, the nurses place, we can't talk, we can't laugh out loud there.

For the Pacific language groups where the facilitator worked closely with the church, buy in from the Minister was essential for both the opportunity to present, and for attendance rates at the groups.

So what the minister says, a lot of our people listen and they go and attend the functions or activities. So with this one the support of the minister and his wife is very important, imperative for this programme to continue.

Transport barriers were able to be mitigated by providing transport services to participants in some groups. This was essential in allowing participant with transport barriers to attend group. Effective cooperation between facilitators and community health coordinators who provided this service was an important enabler.

I'm lucky because I've got the community health coordinators and so they help in transporting patients...In Clendon there's a lot without transport. A lot of that community don't have transport. They may have access to transport after working hours but not during the day.

6.2.2.3 Barriers to change

Facilitators frequently commented on the difficult-to-reach nature of the target population, and named this as a major "barrier" for change. Many facilitators recognised stressful life circumstances, economic and family pressures as important determinants of participants' ability to change.

And I thought oh man, this group's really not getting it. And when I spoke to [supervisor] about it she was saying don't worry about it, it's because these people are hard to reach populations and they've just got so many other stressors in their lives that for them to be ready to change and actually take control and be a good self carer of their own health, they've just so much else on, whether they can pay the bills and have somewhere to live and feed the family and have a job. It's just too hard.

Low education levels. Social and cultural environments were also identified as a barrier to participants learning, increasing the difficulty of implementing lifestyle changes that DSME encourages. Language was also identified as a practical barrier to participants understanding session content.

Then we had problems with translation, because some patients did not understand exactly what we were telling, mainly Tonga, Samoan and so on like that. We had some Indian's who could not understand English, so that was a problem for them.

Transport and work commitments were identified as barriers to attendance. As anticipated, these barriers were more significant than participant focus groups revealed.

I've had several referrals and they've been referred by the PN or GP and the patient works so, I'm only running courses during the day so as soon as they say "Oh I'm working" they can't come.

One facilitator reported that having different session times for different groups allowed more participants to attend. This was supported by another participant who commented that it was not possible to find one time that would suit all referred patients.

6.2.2.4 Impact on Facilitators

All facilitators interviewed also felt that facilitating DSME sessions has also led to improvements in their own health behaviours and knowledge. For many, a feeling of obligation motivated them to make changes.

... you feel like you have to live what you're preaching really, in a way. So I think actually taking the groups makes you do it more.

I didn't want to feel like I was a hypocrite so I really felt that I had to walk the talk. You know I didn't want to say one thing and do the opposite.

Others have made changes through goal setting with the group. These facilitators also felt that their goal setting was useful in motivating the participants, an idea that was supported by participant comments during focus groups.

I'm trying to get the group to set goals and make changes and each week we come back and say how did you get on and of course, and so each week I've said I'm going to do this, and then of course they are first to say to me "How did you get on? What did you do?" and so I have to front up every week and say how many times I've walked the dog or how far I've walked or what.

6.2.3 Recommendations for the programme

Facilitators reflected the suggestion of participants that follow up meetings be arranged for participants. These meetings would allow participants to maintain support networks and discuss any problems they are having.

I think if they continue with meeting together monthly and having that support, hopefully that stimulates them to talk about their issues and talk about their problems with each other and if they're having problems with things that they talk about it, and that will help them resolve them and they can move forward.

Likewise, facilitators would also appreciate periodic meetings to share experiences and discuss problems they are having with their groups. Facilitators would prefer these to be informal and conversation based, rather than information presentation or lecture sessions.

If these people who were in the original programme can get together for half a day or maybe one day say on a regular basis every three months or every two months or whatever is feasible, it would be a good thing. Because it will be, would be sharing experiences among the people who are having different kinds of populations, different kinds of backgrounds, different kind of experience and all that.

As a solution for the ongoing issue of locating shared resources, many facilitators suggested creating an organised check in/check out system. One facilitator mentioned specifically that a computer based system would be ideal.

So there's no signing them in or out as to where they've done, or no computer thing of where or who's got what, which I would have thought is pretty simple to organise and we've all suggested it but doesn't seem to happen.

Facilitators commented that more training about food, and particularly food that is relevant to different cultures, should be given.

I think it should relate to food itself which we're trying to develop as we go further. But we still need a bit of training on that front... So if we were trained a bit more on that front and also different cultures, different food and things like that.

A suggestion was also made that after a few sessions, someone with facilitating experience could come and observe a group session and provide feedback for facilitators on what they are doing well and how they could improve.

I would have been happy to see somebody who has already done that kind of a thing to have come and have a look what we are doing. A facilitator or somebody who trained us, if it was possible to come and have a look at what we are doing first hand, then they probably would have picked up many things

Many facilitators felt rushed to get through all of the content in the allowed time. A suggestion was made that greater time should be allocated. Not all facilitators agreed with this, with some suggesting that the population served prefer shorter programmes and may not attend if sessions were longer. Other facilitators reported experience that groups did not mind staying longer if the sessions ran over time, and were disappointed at the last session that no more sessions would be held.

A lack of time was a problem throughout DSME. Facilitators felt that they were over worked, and putting more hours in to DSME than what they were paid for. A suggestion was made to make SME facilitation a full time job, or at least to have someone help with administrative tasks. Many of the administrative tasks discussed were related to the evaluation database. The delayed implementation of the database created a backlog of data entry that was difficult to overcome.

Most facilitators agreed that more facilitators needed to be trained, both to replace those that leave the programme, as well as to allow for expansion. Many facilitators reported being over stretched and that they would be unable to cope with an increase in demand.

Specifically, a suggestion was made for another Pacific facilitator to be trained and to work either as a co-facilitator or independently, with facilitators referring participants who they thought would be better served by a facilitator of their own culture. It was recognised by some that “Pacific” may not be specific enough, and that facilitators from all major Pacific ethnicities would be ideal.

One facilitator commented that a Pacific specific manual was required, reflecting the feelings of many that they were unable to adequately respond to the needs of some Pacific participants.

6.3 Qualitative results: Managers

PHO managers were interviewed in order to gather an organizational perspective on the PHOs’ engagement, participation and support for DSME. Managers provided their perspectives on the development of DSME within their organizations, the sustainability of the programme, the level of stakeholder collaboration and the current status of the programme within their organization.

6.3.1 Organisational development of DSME

PHO managers were asked how DSME fit within the organization and what factors enabled the implementation of the programme, and which factors acted as barriers.

6.3.1.1 Enablers

Programme champions at various levels of management have been important in driving the SME concept forward.

I’ve got a very skilled person on the PHO board who has had a lot of input around the country in to self management, and she just knows that this is the direction to go, she just has the vision...there are some champions there that have driven and will continue to drive this

One manager commented that SME fits well within the philosophy of their PHO. This provides support that may be important in enabling non-clinically based programmes to survive.

But at the end of the day you don’t get fixated with what the doctor’s doing, the patient is the important part. It doesn’t matter who delivers the service to the patient. You can’t assume the doctor is the best

The support from this PHO was an important factor in encouraging referrals. Many facilitators reported having to “sell” DSME to clinicians as a major barrier and strain

on their time. Having the PHO take charge of educating clinicians and selling SME was an enabling factor in this PHO.

I didn't get the facilitators to sell it to the doctors, we had a CME that sold it to the doctors and we have the case managers that sold it to the doctors.

The passion, commitment and abilities of facilitators were reported as critically important in the success of the DSME sessions.

I think what we've got now is a really strong group of people who are as I say very passionate, very committed and who are very comfortable in their role and I think that's been, that's huge, that really is huge.... [they are] a great group of people... and by demonstrating that it can be done, have proven to some of the doubters within their own organisations that this is a way of working and of appearing to work effectively.

The flexibility shown by both CMDHB and PHOs was commended. PHOs were allowed the space to develop their own programme based on the model that CMDHB proposed.

But I don't think CMDHB was black and white about it, they were lenient enough to say "you devise it for your population" and I think that's the biggest plus for this SME thing is that they weren't prescriptive about "has to be done this way"

6.3.1.2 Barriers

One member of the SME steering group commented that the group has different views to the CMDHB belief that all programmes should be implemented across all PHOs. It was noted that priorities differ across PHOs and that they should be free to determine their own needs, priorities and strategies. This manager felt that including PHOs for whom SME was not a priority threatened the sustainability of the DSME programme.

The Counties approach whenever you put out a programme is that every PHO must be doing it...I actually think it's just like anything in life, you get the willing parties to do it...and the others will come on board when they're ready...I mean we've got PHOs out there who are, one who doesn't want to participate. I said, "Why should they participate? They're actually bankrupt. That's their key issue, they don't even know if they're going to be around".

Many managers commented on the difficulty of measuring the impact of SME and how the outcomes of SME did not necessarily relate well to traditional KPIs which emphasise numbers of patients rather than outcomes. It was felt by many an inability to meet KPIs formed in this way is a potential threat to sustainability. It was also felt that "number counting" KPIs do not adequately capture the impact of an intervention, and so may not accurately reflect its worth.

The whole way primary care is set up around KPIs and reporting is actually investing short term for short term gains. Anything that's long term that you can't show results everyone says well how would we tell the Ministry?

With medical practice because KPIs are black and white, it's easy to measure, but when you're working with the community not very many black and white outcomes. Behaviour change is very hard, and that's what we're looking at doing really.

One manager commented that placing the SME coordinator within CMDHB restricted their ability to influence the programme by creating a DHB/PHO tension. It was felt that many would perceive the SME coordinator as the face of the DHB, reducing their likelihood of open cooperation, and invoking historic tensions between the DHB and primary care. It was also noted however that no other organisation existed in which to place an SME coordinator that could oversee all PHOs equally.

I personally think they're better placed in primary care, not in the primary care arm of the DHB but in primary care. I think it makes it very difficult for them to be sitting in the DHB doing work in primary care.

Concerns were also expressed that practices were not adequately engaged. Although DSME is now described as a PHO led initiative, a disconnect between PHO managers and clinicians means that engaging PHOs does not necessarily lead to engaged clinicians. This was seen as an inevitable consequence of the current health system structure.

Confusion around the relationship between LBD and SME were also raised. It was reported that PHOs are not engaged with LBD and do not see SME as an LBD programme. This has created misunderstanding and tension in a number of areas including the evaluation, and communications plan.

That's the problem that the PHOs have as well. Because they don't feel engaged with LBD...the PHOs do not see this as an LBD programme, they see it as theirs, a primary care programme. And that's one of the sources of the misunderstanding.

It was also noted that managers and funders have yet to embrace the concept of SME as a whole of primary care activity, and fail to realise the level of funding, support and prioritisation that effective SME requires.

I suppose one of the ramifications is that managers and funders don't, perhaps have yet to realise that this does require more intensive funding and support and prioritisation within the whole strategic plans.

6.3.2 Sustainability

There was a general feeling that the SME concept is a valuable concept that needs to be carried on into the future. From this point of view, there is a feeling of confidence that DSME is sustainable and will continue to be funded.

I think we...they would be hard pressed with the feedback that they've got back and the fact that their key objective is sustainability, they'd be hard pressed to wipe this.

However, there is a strong recognition that the programme is dependent on SIA funding, and that attracting this funding is crucial to the programmes continuation. There is a concern expressed by one manager that if funding is cut the full potential of SME will not be seen. This manager noted that much of the funding so far has been spent on gaining traction, and that funding from this point forward will produce more visible outcomes for patients and the community.

I think as I said we need to revisit for the next SIA project the resources. That's a very important part of it...Sustainability is going to be an issue, once SIA gets allocated and we get priorities.

We've done quite a lot of health promotion work along a similar line before, and it's like \$20 000 gets put in to a community and it actually just starts to get traction and it's like "oh there's no more funding for next year".

Concerns were also raised that some smaller PHOs may not be able to meet the amount of funding required of DSME. It was noted that sustainability is sensitive to the strategic directions of each PHO, and that sustainability may vary between PHOs. A referral system was called for by a PHO that was unable to support a facilitator. This referral system is now in place and may be used to increase the sustainability of SME activities across Counties Manukau by allowing patients within one PHO to access SME services from another, eliminating the need for all PHOs to actively fund and offer SME services. Issues of access relating to geography and transport may however need to be considered.

And then they came to the conclusion after that that they really were too small and it wasn't sustainable for them to have their own facilitator although they are committed. So they wanted to see some very transparent inter PHO referral processes. So we've done that, we've got that referral process

Demand for DSME was noted to be high and was seen as a factor supporting the need for some form of SME programme. However, it was also noted that this high demand may reduce the sustainability of SME by reducing PHOs ability to resource such a large programme. It was therefore concluded by one manager that targeting SME towards specific groups is needed to reduce demand whilst maintaining services for those with the greatest need.

The programme is taking off exponentially in some areas and so we've got the dilemma around demand out numbering the amount of time and resource we have to fill that demand...I don't think there's a threat of cutting the programme at the moment. What there is, there's a...it puts more pressure on us to find better, more effective ways of reaching people.

6.3.3 Stakeholder Collaboration

6.3.3.1 Enablers

The establishment of the Steering Group in April 2007 was seen as pivotal in shifting perceptions that DSME was CMDHB led. The steering group was perceived as a factor allowing PHOs to actively lead DSME.

Because we were very clear that it was a PHO lead process and so we had to remove a lot of the angst that this is a DHB doing this without consulting us. So the establishment of the steering group removed a lot of that.

Having the two lead PHOs sitting in the steering group was very beneficial, it allowed them to talk about how things were going and collaborate in a way that they usually wouldn't when running independent programmes.

DSME is perceived by many managers to be a “shining example” of a PHO lead project. PHOs have reportedly worked collaboratively to deliver services across PHO boundaries to extent not seen in the past. This was seen as an important way of making the best use of the diverse range of skills and expertise available in each PHO.

And I think we have managed to encourage the concept [between PHOs] of sharing and working together and really collaborating a lot more than perhaps has been evident in the past. Previously there has perhaps been a bit more patch protection by PHOs.

A strong relationship between CMDHB and management of one of the lead PHOs was also reported as an essential enabler to the project's success. This opinion was echoed by the programme coordinator, who emphasised the importance to her role of having strong, positive relationships with stakeholders.

A lot of what I do is very dependent on good relationships, and I think that's key is that having good relationships because I don't have any management authority so if I want to see something happen or something change then I have to do it by persuasion.

6.3.3.2 Barriers

Many of the managers interviewed believed that a collaborative approach between PHOs and CMDHB was the appropriate way to develop and implement a regional SME programme. However many felt that particularly during the earlier stages of development, a collaborative relationship did not exist, with CMDHB having greater power over decision making and largely directed the programme rather than working collaboratively with PHOs.

There possibly was [a tense relationship to begin with] in that some things had sort of been more told “this is what you will do” rather than “how do you want to do it”. And particularly when an organisation was so much further

down the track in developing their plan and implementation and so forth, yeah.

This lack of collaboration led to some PHOs reportedly disengaging. One example discussed during interviews was the appointment of Maori and Pacific facilitators without full buy in from Maori and Pacific PHOs. At this point PHOs questioned their level of partnership in the programme.

Confusion exists around the relationship of DSME to LBD. In particular, confusion stems from LBD appearing to claim ownership of what is often described as a PHO led programme.

LBD are calling it their programme. So they've got this thing going on they present our self management programme, and I just kind of think I think that's what we're doing as well but it's working so let's not worry about the politics of it.

6.3.4 Status of DSME

Most managers reported that DSME has taken off more quickly than expected, and that this has led to concerns around the ability of PHOs to cope with the demand. This reflects some facilitator's comments that they are overstretched already.

It's taken off a little bit more quickly than we had anticipated...Just numbers wise, and I mean we're more in to looking at how are we going to control this rather than how we're going to develop it.

Some question the rapid uptake of DSME, noting that many participants may not have a great need for the programme, and that hard to reach groups with greater need may be being inadvertently bypassed. This is particularly likely to happen if facilitators are overstretched responding to existing demand, and are unable to focus attention on attracting high needs participants.

You getting lots of people in and whanau in and all that sort of thing, And when I say are they the right people they say "Oh well at least we're getting out numbers". And that's my worry, they're not the hard to reach really tricky ones that we want to get in there.

These concerns appear to be supported by the comments of one manager, that their PHO has not taken off as quickly as others, but that they are strongly targeting hard to reach patients.

It's taken us much longer to actually get things running as well as we would like... But we have really prioritised high needs populations and invariably that takes 80% of the effort to reach 20% and we knew that if we just wanted to get numbers we could have rolled this out much quicker and much sooner for a lot less effort but then we wouldn't have reached the right population.

In response to the unexpectedly rapid uptake of DSME, and to issues of equity, some managers expressed a view that DSME needs to become more selective in which patients are able to attend. An existing screening tool was seen as one way of doing this. Requiring patients to meet predefined criteria was seen as a way of better targeting DSME to those most in need.

None of them want to be in a position where you turn anyone away. But in fact the reality for the best bang for your buck as far as I'm concerned is people are going to have to be turned away, there's going to have to be a criteria. ... to me the screening tool is where we need to go because it actually sets up an eligibility criteria and captures those that we actually think will get the most out of this programme.

One manager expressed an initial concern that the course was too long, and that this may have unacceptably large resourcing implications. This is in line with some facilitators views that a shorter programme would be more acceptable to some population groups, but opposes most facilitators comments that more time would be preferable, and in their experience acceptable by participants.

Feedback gained by managers, primarily through facilitators, has reportedly been excellent. Managers were aware of the positive response participants have been having.

Feedback from the patients has been excellent, so they've enjoyed it, they want to do more. I think the wrap up session is the one that seems to just go on and on and on because they don't want to leave, they feel it's the final one.

Although managers commented that the attitudes and skills of facilitators were a major positive of the programme, concerns remain around the ability of some facilitators to answer complex questions and for resulting patient safety.

But the professional supervision I really worry about...At the facilitators workshops that I've been at I look and I think some of these people are getting a little out of their depth with the types of questions they're being asked and I also know that the temptation to offer advice which may not be the right advice could get them in to trouble.

With regards to programme outcomes, managers recognized that results would be more likely observable in the long term and not the short term.

6.3.5 Future Direction

There is also a general view amongst many managers that “self management” as a concept should be adopted far wider throughout primary care, and should not be restricted solely to SME sessions. SME, in its current form, is seen as one part of a broader strategy to reorient health services toward empowering patients and enabling them to better care for themselves.

It needs to be fully integrated right across the health system, community based education sessions are just one small part of that. So it also needs some kind of training for health professionals, health providers, because most of them don't even understand the concept. They do some self management support, but it's opportunistic and it's not well integrated or understood within primary care

Concerns about the professional development of SME facilitators were expressed. The need to provide development opportunities through creating a development framework within PHOs was identified.

But the intention is that there will be some ongoing systems in place for facilitators within the PHOs, so the PHOs have got a framework that they can apply in terms of the ongoing development of those people in those roles. Because it's a very different role, it's not a nursing role, it's not a community health worker role, it's not a...it's a new role. So it's maintaining the integrity of that role and ensure that the individuals in those roles continue to develop

The use of lay facilitators was also discussed by some. Views were mixed with some identifying the positive experiences of using lay leaders as part of facilitator teams overseas, and others expressing concern for the validity of content and patient safety when using lay leaders. One manager suggested using lay leaders to facilitate the follow up meetings that have been suggested by many participants and facilitators.

A need to run ethnic specific DSME groups was identified to cater for patients for whom language and cultural barriers act to prevent attendance and change. Plans to create links with community health coordinators who may be able to run these groups were mentioned.

We've actually reached the stage now where we need to have ethnic specific diabetes SME groups. In Mangere we're working with just one GP and they gave us a list of 130 patients with diabetes... but a lot of them really only speaking Samoan or Tongan, so we're looking at working with the community health coordinators as to how we can provide a Samoan led group.

6.3.6 Evaluation

Many difficulties and challenges concerning the evaluation were raised during management interviews. In particular, there was a general view that the benefits of DSME may be difficult to capture using current measurements. Many managers commented that the impact of DSME is broader than physical outcomes, and that people must take in to account social and other intangible outcomes. Impacts on the family and friends of participants are also not being measured and so the impact of DSME may extend further than what captured through the evaluation.

If you stopped 3 people in the family from eating badly and getting diabetes, how are you going to measure that?

And that's what I think will be really important is if there aren't strong positive findings, that people don't then grab that and say it's a waste of time

because anecdotally when you talk to the facilitators and you go along to the groups, participants love it.

Concerns were expressed that the database and the evaluation in general were not developed to serve the purposes of PHOs. Specifically, managers expressed frustration that the database was not integrated as part of existing patient management software, and that doing so would improve the usability of the database.

One manager also felt frustration that a lot of data is collected but does not appear to be used, or that it is only used for the evaluation but has no apparent or immediate benefit for patients.

And so that information sitting there is useless information, it may be good for you and your evaluation, as far as that patients concerned it's useless information.

These frustrations may explain the difficulty that the evaluation team faced in trying to collect data from facilitators. One manager commented that another factor limiting the success of the evaluation was the lack of a common vision across stakeholder groups of what was required and expected of the evaluation, or an understanding of the context of the evaluation being within Let's Beat Diabetes.

Part of the problems in the beginning of the year around that evaluation were that there wasn't a common vision around the evaluation... that was one of the main reasons why we had a disconnect at that point.

Concerns were also raised that opportunities for learning were lost by the delay between the start of DSME sessions and the readiness of evaluation tools.

6.4 Quantitative Results

6.4.1 Sample Description

A total of 193 people were recorded as participants in a DSME programme, held through four different PHOs and two ethnically specific facilitators based at CMDHB. Participants' age ranged from 21 to 87 years, with a mean age of 57.6 years (SD=12.6). Table 2 shows participant characteristics. Two thirds of the participants were female, and the two most commonly represented ethnicities were Pacific Islander and Maori (40% and 37% respectively).

Table 2 Sample description

	%	N
PHO		
East Tamaki Health Care	19.2	193
Procure	16.6	
East Health	18.1	
Mangere Community Health Trust	2.1	
DHB – Pacific DSME	18.1	
DHB – Maori DSME	25.9	
Sex		
Male	33.7	163
Female	66.3	
Age		
Under 45	16.1	186
46-55	25.8	
56-65	31.7	
66 and above	26.3	
Ethnicity		
NZ/European	5.6	178
Maori	37.1	
Pacific	40.4	
European	6.7	
Indian	5.6	
Other	4.5	

Table 3 shows a comparison of the attitude scores across time. Paired T-test was conducted to compare scores taken before the beginning of the DSME group and scores taken after the last DSME session. For this reason, only participants who had completed questionnaires at both those time intervals were included in the analysis ($n = 65$). On average, before the DSME group participants reported their health (Q1) to be between fair and good ($M = 2.8$). Participants agreed that managing their diabetes was mainly their responsibility ($M = 4.5$), they agreed that they were motivated (Q3) and confident to care for and manage (Q4) their diabetes ($M = 4.3$ and 4.1).

respectively). Participants were mostly ambivalent about whether they had enough knowledge (Q5) and understanding about diabetes and its management (Q7) to make choices that were right for them ($M = 3.7$ and 2.9 respectively), as well as feeling ambivalent about whether they felt good about living with diabetes (Q6: $M = 3.5$).

With the exception of Question 2 and 6, all attitude questions showed a significantly improved mark after the DSME group. The greatest improvement was seen in participants' reported understanding of diabetes and its management, followed by participants' reported level of knowledge about diabetes to make choices that were right for them. Questions that did not show significant improvement were related to participants' perception that managing their diabetes was mainly their responsibility, as well as feeling good about living with diabetes.

Table 3 Attitude score across pre- and post-DSME

	Pre-DSME (n=65)	Post-DSME (n=65)
	Mean (SD)	
Q1. I think my health is...	2.82 (0.83)	3.40 (0.84)***
Q2. Managing my diabetes is my responsibility	4.52 (0.53)	4.66 (0.64)
Q3. I am motivated to care for my diabetes	4.29 (0.67)	4.62 (0.49)***
Q4. I am confident I can manage my diabetes	4.05 (0.73)	4.36 (0.57)***
Q5. I know enough about diabetes...	3.66 (0.91)	4.54 (0.50)***
Q6. I feel good about living with diabetes	3.48 (1.13)	3.77 (1.07)
Q7. My understanding of diabetes is...	2.85 (0.99)	4.12 (0.82)***
* p value $\leq .05$ ** p value $\leq .01$ *** p value $\leq .001$		

Comparing the attitude scores pre-DSME with those obtained three months after completion of DSME, we notice that significant improvements on all questions, with the exception of Q2 and Q3 (see Table 4).

Table 4 Attitude score across pre-DSME and 3-month follow up

	Pre-DSME (n=28)	3-month Follow-up (n=28)
	Mean (SD)	
Q1. I think my health is...	2.82 (0.95)	3.75 (0.84)***
Q2. Managing my diabetes is my responsibility	4.52 (0.58)	4.56 (0.51)
Q3. I am motivated to care for my diabetes	4.32 (0.72)	4.54 (0.79)
Q4. I am confident I can manage my diabetes	4.08 (0.89)	4.65 (0.49)**
Q5. I know enough about diabetes...	3.88 (0.91)	4.62 (0.50)***
Q6. I feel good about living with diabetes	3.77 (0.91)	4.31 (0.62)**
Q7. My understanding of diabetes is...	3.56 (1.05)	4.22 (0.64)***
* p value \leq .05 ** p value \leq .01 *** p value \leq .001		

Table 5 shows a comparison of pre and post programme behavioural scores. Participants were asked how many days a week they did a series of behaviours. On average, before the DSME sessions participants were eating at least three meals on five out of seven days in a week (Q1). They were eating breakfast on six days in a week (Q2). Participants reported eating at least two servings of fruit (Q3) and three servings of vegetables (Q4) between four and five days in a week; whereas they reported eating high fat foods (Q5) around 2.6 times per week. With regards to exercise, participants reported doing at least thirty minutes of moderate physical activity around 4.7 times per week (Q6), but only doing a planned exercise session around 3 times per week (Q7). Among those who smoked, participants reported having an average of 29 cigarettes in the previous week (Q9). Among those who were advised to test their blood glucose levels, participants reported testing themselves on slightly more than three day in the last week (Q11), whereas among those who had a prescribed medicine for diabetes (Q13), they reported taking their medication over 6 days a week. Participants reported checking their feet (Q14) on about three days in the previous week.

Comparisons between the pre-DSME behavioural score and the post-DSME behavioural score show that there was a significant increase in the number of days participants reported eating at least three meals a day, eating breakfast, eating the recommended servings of fruits and vegetables, doing moderate physical activity, and checking their feet. Conversely there was a significant decrease in the number of days participants reported consuming high fat foods.

Table 5 Behaviour score across pre-DSME and post-DSME

Average number of days doing each of the following:	Pre-DSME	Post-DSME	N
	Mean (SD)		
Q1. Eating at least three meals a day	5.39 (2.06)	6.10 (1.37)***	71
Q2. Eating breakfast	5.90 (1.91)	6.37 (1.38)**	71
Q3. Eating at least two servings of fruit	4.94 (2.30)	5.83 (1.45)**	69
Q4. Eating at least three servings of vegetables	5.26 (1.92)	5.76 (1.37)*	70
Q5. Eating high fat foods	2.57 (1.92)	1.54 (1.47)***	68
Q6. Doing at least 30 minutes of moderate activity	4.65 (2.30)	5.25 (1.90)**	71
Q7. Doing planned exercise sessions	3.03 (2.38)	3.52 (2.53)	66
Q9. How many cigarettes have you smoked	29.21 (33.53)	22.00 (26.24)	14
Q11. Testing blood glucose	3.61 (2.45)	4.18 (1.89)	49
Q13. Taking recommended diabetes medicine	6.56 (1.48)	6.64 (1.28)	55
Q14. Checking your feet	3.42 (3.09)	4.36 (2.63)**	66
* p value $\leq .05$ ** p value $\leq .01$ *** p value $\leq .001$			

When comparing the pre-DSME scores with the three month follow up behavioural scores (see Table 6), we notice that the only sustained change was the decrease in the number of days participants reported eating high fat foods.

Table 6 Behaviour score across pre-DSME and 3-month follow-up

Average number of days doing each of the following:	Pre-DSME	3-month Follow-up	N
	Mean (SD)		
Q1. Eating at least three meals a day	5.71 (1.54)	6.00 (1.59)	28
Q2. Eating breakfast	5.61 (2.10)	6.29 (1.49)	28
Q3. Eating at least two servings of fruit	4.61 (2.28)	5.25 (1.60)	28
Q4. Eating at least three servings of vegetables	4.93 (1.90)	5.61 (1.62)	28
Q5. Eating high fat foods	3.11 (2.18)	1.54 (1.00)***	28
Q6. Doing at least 30 minutes of moderate activity	5.00 (2.43)	5.68 (1.89)	28
Q7. Doing planned exercise sessions	2.75 (2.62)	3.43 (2.19)	28
Q9. How many cigarettes have you smoked	32.60 (23.43)	31.60 (49.87)	5
Q11. Testing blood glucose	2.86 (2.32)	2.86 (2.54)	14
Q13. Taking recommended diabetes medicine	6.00 (1.96)	6.20 (2.15)	15
Q14. Checking your feet	2.19 (2.86)	3.04 (2.36)	27
* p value \leq .05			
** p value \leq .01			
*** p value \leq .001			

Table 7 present a comparison of the physical indicators compared across time. Participants before commencing a DSME course had on average an HbA1c score of 8.4, with a minimum of 5.8 and a maximum of 12.6. Participants had a BMI ranging from 23 to 58 and averaging 31.8. Waist circumference was least commonly collected, but ranged from 84 centimetres to 140 centimetres, with an average of 101.6 centimetres. Patients' blood pressure ranged from 100 over 60 to 180 over 110, and averaged 131 over 79. Comparing the pre-DSME scores with those obtained at the three month follow up assessment we see that the only physical indicator that shows a statistically significant improvement is HbA1c.

Table 7 Physical indicators across time (pre-DSME and 3-month follow-up)

	Pre-DSME	3-month Follow-up	N
	Mean (SD)		
HbA1c	8.36 (1.79)	7.98 (1.96)*	48
BMI	31.75 (8.08)	31.74 (8.05)	40
Waist circumference	101.60 (16.92)	101.20 (22.56)	10
Blood Pressure - Systolic	131.29 (17.03)	127.51 (18.94)	51
Blood Pressure - Diastolic	78.80 (10.84)	76.24 (11.17)	51
* p value \leq .05 ** p value \leq .01 *** p value \leq .001			

Unfortunately, the extent to which programme data were incomplete presented a barrier to conducting any further analyses by ethnicity and by PHO. When the data set is divided, all significant effects are lost.

7 Discussion and Recommendations

7.1 Summary of key findings

Overall, this evaluation report presents findings from a process evaluation and outcomes monitoring of the Diabetes Self-Management Education Programme implemented in Counties Manukau. The findings from the participant outcomes should be considered in conjunction with the findings from the process and implementation evaluation. Key points presented in section 6 are summarized below.

7.1.1 Process and Implementation

7.1.1.1 DSME Participants

Participants opinions were gathered around the motivators and barriers to attending the programme; motivators and barriers to change; the impact of the programme on their family and friends and programme delivery.

The most common motivator for attending the programme was the desire for more information which was linked to concerns about their personal health condition. Other motivators included pressure from health professionals to attend the programme, wanting to help people in their community to prevent diabetes, and having a welcoming atmosphere created by the facilitators. Perceived barriers to attending the programme were cited, the most common being language. Often this was thought to lead to shame and isolation because of the lack of understanding. Another perceived barrier was cultural beliefs, particularly about the role of religion in managing diabetes.

One of the most commonly reported changes in the participants was their increase in knowledge and understanding about how to manage their diabetes. This led to a greater sense of control over their condition and increased their confidence to self-manage. Other changes included an increase in skills, such as reading labels, which enabled change in eating behaviour to occur.

Motivators for change most commonly came from the group of participants, where discussing personal experiences made people feel less isolated. Supportive families were also cited as a motivator for change. Some of the barriers to change reported by participants included getting used to new eating habits, unsupportive and unhealthy environments such as church functions and financial constraints. In addition to this, participants pointed out that after the programme finishes there could be a drop in motivation.

Participants noted that there was a positive effect on friends and family where they were benefiting from the knowledge and skills gained from the programme, such as healthy eating.

In terms of programme delivery, most of the comments made by participants were positive. Participants enjoyed the group interaction, and felt the style of presentation was appealing. In addition to this, the resources made available including rubber food, pamphlets and information sheets further assisted the learning process of the participants, although some groups requested ethnically specific rubber food.

7.1.1.2 DSME Facilitators

DSME facilitators were interviewed and were asked questions about enablers and barriers for referrals; enablers and barriers to the actual delivery of the programme; the impact of the programme on the participants; enablers and barriers to change for the participants; the impact on the facilitators; and recommendations for the programme.

Enablers to people being referred to the programme included not having to go through GPs for the referral, GP and nurse familiarity with the DSME programme, and facilitators' experience in working with practices and links with the community. For many facilitators, getting referrals to the programme was a major problem. Some of the barriers included the low profile of DSME within PHOs, time pressures on GPs, and not being able to promote DSME adequately.

In terms of programme delivery, there were a number of enablers including facilitator follow-up meetings, sharing information with other facilitators, the training and manuals provided to the facilitators, previous experience of facilitators, use of translators and support from PHOs. In addition to this, most facilitators had a deep sense of satisfaction gained from running the sessions, which continued to motivate them. Some of the barriers to delivery included lack of cultural information in the facilitator training, having to share limited resources across facilitators, spending more time on DSME than their recognised allocation, and a large amount of content needing to be covered in a limited amount of time. In addition to this, facilitators mentioned having to "sell" DSME to PHOs and health professionals as a barrier.

The perceived impact of the programme on the participants was discussed by facilitators. One of the key impacts was the social connections formed through the programme, which impacted on changing behaviour. Facilitators also saw an increase in participant knowledge which helped them talk to their health professional in a more meaningful and engaged way.

Enablers to change included the group acting as a source of motivation for the participants, empowerment, sense of belonging, support of church Ministers, and using resources such as pedometers to increase awareness. Some of the most commonly cited barriers to participant change included the nature of the target group being difficult to reach, low education levels, different social and cultural environments, language, transport and work commitments.

The DSME programme also impacted on the facilitators themselves. They felt that the programme had led to improvements in their own health behaviours.

Facilitators had a number of recommendations for the future development of the DSME programme. The introduction of follow-up meetings for the participants was seen as important to maintain support networks. Facilitators suggested having a computer-based lending system for the use of limited resources. Increasing the training around culturally appropriate foods was also suggested. Facilitators also wanted more time to get through the programme content. An increase in workforce capacity for the DSME programme was cited as crucial to the sustainability of the programme.

7.1.1.3 Managers

Managers from various organisations were interviewed about the DSME programme and made comments around enablers and barriers to the organisational development of DSME, the sustainability of the programme, enablers and barriers to stakeholder collaboration, the current status of DSME, and the future direction of the programme.

Enablers to the development of the DSME programme include having the support of programme champions, a match between the philosophy of DSME and the PHO, support from PHOs, the facilitators commitment, passion and skills were key in supporting the development of the programme. Some of the barriers included a mismatch between views of the DHB and other people, difficulties actually measuring the impact of DSME, engagement of practices in the DSME programme, confusion about the relationship between LBD and SME.

With regards to sustainability, there were strong feelings among the managers that the concept of SME needs to carry on and that the programme is sustainable and will continue to be funded. Funding concerns were raised as well as issues around the individual strategic directions of PHOs which may not include SME. Demand for DSME was high and this was felt to reflect the need for the programme, but this demand may mean the programme is not sustainable under the current work force and resourcing.

Enablers to stakeholder collaboration include the establishment of the Steering group in April 2007, PHOs working across traditional PHO boundaries, and strong relationships between the DHB and PHOs. Barriers to stakeholder collaboration include earlier issues with collaboration that lead to the disengagement of some PHOs, and confusion around the relationship between DSME and LBD.

Managers felt that DSME has taken off very quickly which may lead to issues of inability to meet the demand. Managers noted that while facilitators are key in the delivery of the programme and are excellent at what they do, there is some concern around their ability to answer clinical questions.

In terms of the future direction of DSME, managers talked about the need to manage the demand for the programme by being more selective in the people taking part and incorporating the concept of SME into wider primary care. A developing role for facilitators was also mentioned as well as using lay facilitators for follow-up meetings, to ease the load for the facilitators of the sessions. Ethnic specific DSME courses were also suggested.

7.1.2 Quantitative results

The attitude scores of the participants markedly improved after attending the DSME programme, in particular participants' understanding of diabetes and its management improved the most. Participants' reported level of knowledge about diabetes to make choices that are right for them also greatly improved. Significant, sustained improvements were identified particularly for questions about health status, confidence in managing diabetes, knowledge about diabetes to make choices that are right for them, feeling good about living with diabetes and understanding diabetes and its management.

Participant behavioural scores improved after attending the DSME programme, particularly for eating at least three meals a day, eating breakfast, eating the recommended servings of fruits and vegetables, doing moderate physical activity, and checking their feet. There was a significant decrease in the number of days participants reported consuming high fat foods. Over time, the only sustained change was the decrease in the number of days participants reported eating high fat foods.

Physical indicators of the participants, which included HbA1c, BMI and waist circumference, show that over time, the only statistically significant improvement was a decrease in HbA1c.

7.2 Did the programme work as expected?

Section 3.1 above outlines the objectives that this programme set out to achieve. The results presented through this report illustrate that the programme, through its implemented activities, managed the following:

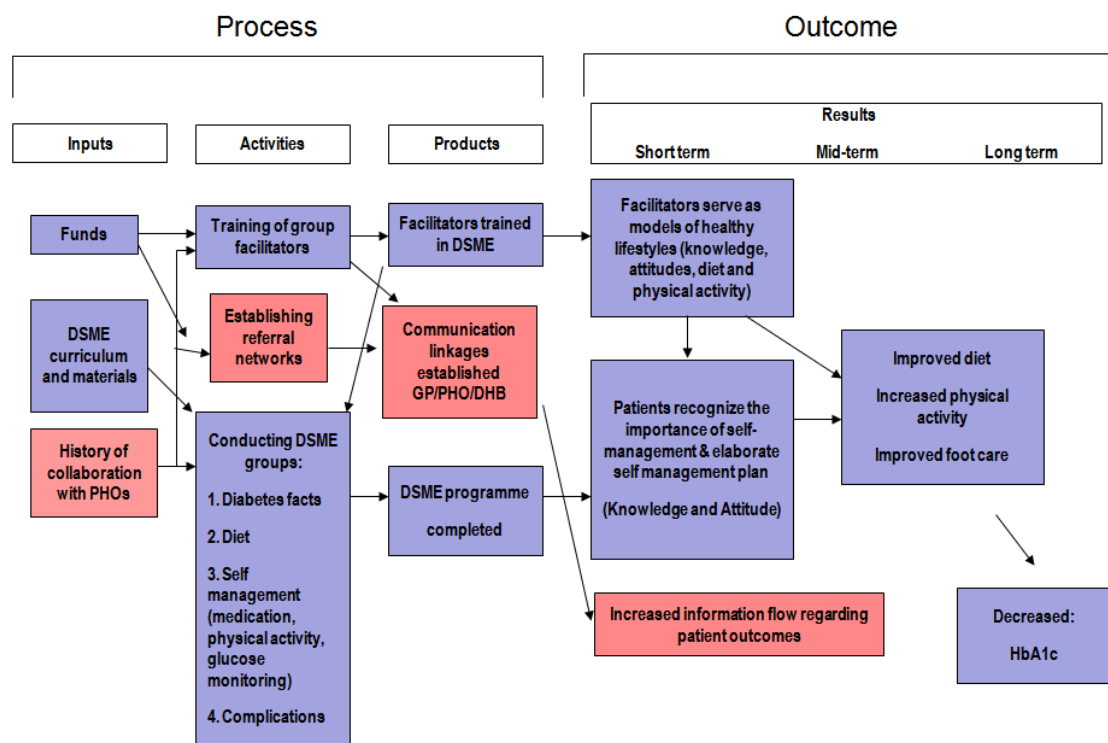
- To show an improvement in participants' attitudes towards their own ability to manage their diabetes after participating in a DSME group, which was mostly sustained three months after the end of DSME participation.
- To show an improvement in participants' diet, physical activity and feet care after participating in a DSME group. There was not enough data to ascertain whether this change was sustained three months after the end of the intervention.
- To show an improvement in HbA1c levels three months after the end of DSME participation.

Figure 2 represents the programme logic developed in conjunction with programme stakeholders initially described in section 4 of this report. This programme logic was discussed and revised during two evaluation workshops held with facilitators and the SME Steering Group. Figure 2 below shows the revised programme logic. The boxes in purple represent pathways through which the programme worked as expected, whereas the pink boxes represent barriers that did not allow the programme to be implemented as expected.

Evaluation workshop participants agreed with the evaluation team that although a history of collaboration did exist between DHB and PHOs, this history was not always positive. Therefore, what was initially taken as an input for the project, at times turned out to be a barrier. Stakeholders participating in the evaluation

workshops agreed that more consensus building around this project, involving the DHB and several layers of management within each PHO would have been advised. Also, initially programme stakeholders had indicated that established referral networks would be an input towards the programme. In fact, referral networks did not seem to be established, and establishing these networks constituted a major activity, particularly during the initial months of the facilitators' engagement with the programme. Similarly, communication linkages within PHOs and across PHOs were not properly established. This meant for most of the facilitators that obtaining clinical data from GP surgeries was an insurmountable challenge. On the other hand, despite the difficulties just mentioned the programme was successful in training a group of highly motivated facilitators and implementing group DSME sessions. Evidence was found that facilitators served as models of healthy lifestyles and inspired patients to recognize the importance of self-management. This in turn facilitated attitude and behavioural changes immediately after the programme, as well as a decrease in HbA1c at three months after the initiation of the programme.

Figure 2 Revised Programme Logic



In conclusion, the Diabetes Self-Management Education Programme implemented as part of the Counties Manukau Let's Beat Diabetes Programme, showed definite signs of success in engaging patients with diabetes in managing their condition.

7.3 Programme recommendations

Although the data presented through this evaluation show positive results, the opportunity to learn from the implementation process must not be dismissed. In that light, the following recommendations are presented.

7.3.1 Process recommendations

1. Securing stakeholder buy in: Interview data suggested that the initial process of ensuring stakeholder buy in, not only for programme development and implementation, but also during the development and implementation of the evaluation, was difficult. The initial confusion surrounding the evaluation resulted in a significant delay in introducing a database to collect monitoring data, which in turn produced a huge backlog of data that facilitators were at times unable to resolve and ultimately compromised the quality of the data. In addition, within PHOs not all levels of management felt they were appropriately involved in the development and monitoring the implementation with their PHOs. A process whereby all PHOs can identify the appropriate channels of communication with their organizations must be facilitated.
2. Ensuring broader support for DSME facilitators: With only one exception, all facilitators had difficulty in gathering clinical follow up data, as well as behavioural questionnaire follow up data. Collection of both of these types of data required a considerable amount of time: first to request via telephone all clinical data available to the GP, and where the data was not present, remind participants to visit their GPs for assessment; and secondly to organize a follow up meeting with participants to provide them with follow up questionnaires. Facilitators were often unable to commit the time to carry out both of these activities, and therefore the level of completeness of the evaluation data suffered considerably. A second area where facilitators could be more broadly supported is in managing referral systems.
3. Ensuring additional support for Maori and Pacific facilitators based at CMDHB: For both the Maori and the Pacific facilitators, being based at CMDHB presented a set of advantages and also some disadvantages, one of which was having very limited possibilities of obtaining monitoring data from participants' GPs. Political contentions at the beginning of the DSME programme development phase resulted in significant difficulties in engaging with Pacific and Maori PHOs. In order for CMDHB based Maori and Pacific groups to succeed in demonstrating its effects on participants, processes will need to be put in place to ensure better collaboration with respective PHOs.

7.3.2 Programme recommendations

1. Wherever possible and appropriate, integrate faith based and culturally based activities such as use of ethnic food preparation and ethnically targeted resources (i.e. rubber food).
2. Consider the use and advertisement of translators when DSME groups in other languages are not available. Use of translators was seen as positive by both facilitators and participants.
3. Integrate post-SME participant support as part of the programme. This could entail recruiting and training of lay community leaders from among the participants.
4. Implement an improved system of resource sharing, including a check-in / check-out process.

5. Identify and develop an appropriate model for ongoing supervision of facilitators.
6. Identify a process by which evaluation practices will become part of the ongoing assessment of this programme. This might involve the use of a centralized database for collecting patient outcomes. Additional considerations for this to occur include considering providing the facilitators with administrative support.
7. Coordinate and develop a communications plan to improve the link between managers, facilitators and practices. This may also improve the availability of outcome monitoring data.

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Appendices

Appendix A: In-depth interview schedules

Appendix B: Focus Group schedule

Appendix C: Health attitude questionnaire

Appendix D: Health behaviour questionnaire

Appendix A: In-depth Interview Schedules

In-depth Interview Guide: Facilitators

Training and Support

1. How well prepared did you feel to carry out the DSME groups? What were the good and not so good aspects of the self management training you received?
2. Did you feel supported to carry out the activities as DSME facilitator? Why or why not?
3. What other support would you need in order to ensure you successfully carry out your activities?
4. What has kept you engaged with the programme?

Personal Practice

5. Do you think you have changed (beliefs, attitudes and behaviours) as a result of participating in DSME? What changes have occurred?
6. Provide an example of things you learned that you are now using yourself?

Collaboration with stakeholders

7. Did you approach GPs to invite them to refer to the DSME programme? How easy or difficult has it been to engage GPs in the programme?
8. Have you perceived any barriers for participants to come to DSME sessions?
9. How are participants responding to DSME?

Barriers and enablers to implementation

10. What are some of the barriers you have encountered in implementing the programme? Have you been able to overcome these barriers? Do you think these barriers threaten the future implementation of the programme?
11. What factors enabled you to carry out the programme?
12. What are some future suggestions for training and for the programme?
13. Anything you feel that we missed?

In-depth Interview Guide: Providers (GPs)

How were you asked to participate? What concerns did you have about the SME programme initially?

What prevented or encouraged you to support the programme?

How many people have you referred to the programme?

How satisfied are you with the DSME programme?

How has it affected your practice?

Is the programme meeting the needs of your practice?

How easy will it be to continue participating / supporting the programme?

What effects are you seeing in your patients?

Do you have any suggestions for future training and for the programme?

In-depth Interview Guide: Providers (PHO Managers)

How was this practice / PHO initially asked to participate in the DSME programme?
What concerns or opportunities did you see initially about participating in this programme?

How satisfied are you with the DSME programme?

How easy or difficult has it been to communicate and coordinate with other stakeholders?

Is the programme meeting the needs of this practice / PHO?

How easy will it be to continue participating / supporting the programme?

Do you have any suggestions for future training and for the programme?

Appendix B: Focus Group schedule

Focus Group Guide: Participants

1. How did you end up as participants in this programme?
2. What reasons did you have for deciding to participate in the programme?
3. Describe some of your experiences with the programme.
4. What changes have occurred in your beliefs about diabetes and diabetes-related behaviours?
5. How has this programme affected your lifestyle? (prompts: diet, self-management, exercise) Can you give some examples?
6. What are some of the barriers (difficulties) in doing the lifestyle changes suggested to you by the programme?
7. What are some of the things that helped you to make the changes suggested by the programme?
8. Have you noticed any changes in your family and immediate community since you started attending the programme? Please explain.
 - a. How easy or difficult is it to get the rest of your family engaged and excited about the changes this programme prompts you to make?
9. What kept you motivated to continue participating, and to follow the advice given?
10. How useful were the programme resources?
11. Do you have any suggestions for the programme?

Appendix C: Health Attitude Questionnaire

Pre Programme Health and Attitude Questionnaire

*Hello / Kia Ora / Namaste / Talofa lava / Maloelele / Kiaorana / Fakalofa lahi atu /
Ni sa bulavinaka / Taloha ni / 你好*

Please take the ONE box that best describes you.

1. I think that my health is:

Excellent Very Good Good Fair Poor

2. Managing my diabetes is mainly my responsibility.

Strongly agree Agree Neither agree
Disagree
nor disagree Disagree Strongly

3. I am motivated to care for my diabetes.

Strongly agree Agree Neither agree
Disagree
nor disagree Disagree Strongly

4. I am confident that I can manage my diabetes.

Strongly agree Agree Neither agree
Disagree
nor disagree Disagree Strongly

5. I know enough about diabetes to make choices that are right for me.

Strongly agree Agree Neither agree
Disagree
nor disagree Disagree Strongly

6. Most of the time I feel good about living with diabetes.

Strongly agree Agree Neither agree
Disagree
nor disagree Disagree Strongly

7. My understanding of diabetes and its management is:

Excellent Very Good Good Fair Poor

Comments: _____

*Thank you for taking the time to answer these questions.
Kia Ora / Shukriya / 謝謝*

Appendix D: Health Behaviour Questionnaire

Programme Health Behaviour Questionnaire

*Hello / Kia Ora / Namaste / Talofa lava / Maloelelei / Kiaorana / Fakalofa lahi atu /
Ni sa bulavinaka / Taloha ni / 你好*

The questions below ask about your diabetes self care activities during the last week. If you were sick during the last week, please think back to the week before you weren't sick so we can see what you would usually do.

<p><u>Diet</u> - In the last 7 days:</p> <p>1. How many days did you eat at least 3 meals a day?</p> <p>2. How many days have you eaten breakfast?</p> <p>3. How many days did you eat at least 2 servings of fruit?</p> <p>4. How many days did you eat at least 3 servings of vegetables or salad? (1 serving = ½ cup)</p> <p>5. How many days did you eat high fat foods such as fried food or full fat dairy products?</p>	<p>Please answer here</p> <p>_____ days</p> <p>_____ days</p> <p>_____ days</p> <p>_____ days</p> <p>_____ days</p>
<p><u>Physical Activity</u>- In the last 7 days:</p> <p>6. How many days did you do at least 30 minutes of moderate activity such as gardening or house work?</p> <p>7. How many days did you do a planned exercise session that was not part of what you usually do at home or work, such as walking, swimming or Green Prescription activities?</p>	<p>_____ days</p> <p>_____ days</p>
<p><u>Smoking</u> - In the last 7 days:</p> <p>8. Have you smoked a cigarette (even one puff)?</p> <p>9. If yes, how many have you smoked?</p>	<p>Yes No</p> <p>_____</p>

<u>Testing, medication and foot care:</u>	
10. Have you been told to test (finger prick) your own blood glucose by your health care team?	Yes No
11. How many of the last 7 days did you test your blood glucose the number of times recommended by your health care team?	_____ days
12. Has your doctor prescribed pills or insulin for your diabetes?	Yes No
13. How many times in the last 7 days did you take your recommended Diabetes medicines?	_____ days
14. How many of the last 7 days did you check your feet?	_____ days

*Thank you for participating, we value your comments.
Kia Ora / Shukriya / 謝謝*