Effective health behaviour change in long-term conditions

A review of New Zealand and international evidence

October 2012

Contents

Executive summary

In 2011, the New Zealand Guidelines Group (NZGG) was commissioned by the Ministry of Health to:

- perform a systematic review to identify the most effective evidence-based theories and programmes for bringing about health behaviour change in people with chronic health conditions
- document, via a series of case studies, New Zealand experience of implementing health behaviour change interventions.

The systematic review found that no one particular theory or programme had been proven to be consistently superior in bringing about health behaviour change across chronic conditions. It also noted that heterogeneity across reviewed studies probably serves to understate the effectiveness of behaviour change interventions in any systematic review.

Social Learning Theory was the most widely applied and effective health behaviour change theory; it improved several behaviours across patient groups with specific individual chronic conditions, and also in a mixed patient group. Motivational Interviewing was also an effective health behaviour change intervention for several chronic conditions. Cognitive Behavioural Theory/Therapy, the Transtheoretical Model, and Self-regulation also showed some success for particular chronic conditions.

Background

Chronic health conditions are increasingly prevalent as our population ages. The need for patients to self-manage these conditions through change in health behaviours is important both for their own quality of life and to reduce the financial impact of this health burden on the country as a whole.

In 2011, NZGG was commissioned by the Ministry of Health to assess the evidence for various health behaviour change interventions for people with long-term conditions, and to document recent New Zealand experience in implementing such interventions.

This brief paper summarises the results of the review and is intended to inform health practitioners, programme designers and decision makers in New Zealand, as the sector strengthens the support for people with long-term conditions to self-manage by changing health behaviours.

Health behaviour change for improved chronic disease self-management is here defined as: promoting the adoption of skills, behaviours and coping strategies to enable patients to actively participate in their health care and decision-making, and to maintain health and wellbeing.

English-language guidelines, systematic reviews and randomised controlled trials were included in the systematic review. The evidence was appraised for health behaviour change in people with diabetes, chronic obstructive pulmonary disease, asthma, stroke and hypertension, for specific target health behaviours/outcomes as follows:

• increased physical activity
• improved diet and managing weight
• decreased depression
• improving health-related quality of life[1]
• improving self-efficacy
• improving self-monitoring/clinical outcomes
• improving medication adherence
• decreasing health resource use
• managing blood pressure.

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[1] The term 'quality of life' as used in this report generally refers to the various measures of health-related quality of life used in the studies summarised in the systematic review.

The effect of specific interventions for health behaviour change on these outcomes was compared with the effects of 'usual care' (eg, more traditional care).

As well as the systematic review, NZGG prepared a series of five case studies, documenting New Zealand experience of implementing health behaviour change interventions.

The findings are presented in two parts:

Part One: The international literature
This section summarises findings of the systematic review.

Part Two: The New Zealand implementation experience
This section summarises findings from New Zealand case studies.
The case studies form a body of qualitative research that provides practical information on the implementation of different models of health behaviour change interventions in New Zealand. In some cases the New Zealand experience involved implementation of interventions described in the review, but this should not be viewed as evidence of support for that particular intervention; such judgments should be formed from the results of the systematic review, presented in Part One.

The full text of the systematic review and the full text of the case studies is available at www.health.govt.nz

NZGG has additionally produced a brief narrative summary of four recent government reports on health literacy. This is a distinct, and important, focus for the New Zealand health and disability sector. The results of that summary are not reproduced here. Readers should note that most current New Zealand work is descriptive (rather than focused on trialling well-controlled interventions to improve health literacy), but this is slowly changing. Some important New Zealand research is in train [Crengle et al[2]], the results of which will influence the knowledge of both health professionals and people with long-term conditions to enable behaviour change and self-management skills.

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[2] Crengle S, Intervening to Improve Health Literacy – A Project in Progress. Australasian Long-Term Health Conditions Conference. April 2011. Auckland New Zealand. http://assets.healthnavigator.org.nz/2011/04/Intervening-to-improve-health-literacy-a-project-in-progress-Sue-Crengle.pdf (accessed 13 December 2011).

Part One: The international literature

Overview of systematic review findings

This content provides an overview of the findings detailed in the NZGG systematic review *RapidE Chronic Care: A systematic review of the literature on health behaviour change for chronic care* **(2011). Full text of the systematic review including references is available at www.health.govt.nz.**

- **See Appendix 1 for additional summary information from the systematic review organised according to specific long-term conditions.**

- **See Appendix 2 for information on specific health behaviour change theories and interventions.**

For the purposes of the NZGG systematic review, **a *health behaviour change theory*** was defined as a theory that attempts to find the rationale behind alterations in a person's behavioural pattern. The term ***health behaviour change intervention*** was defined as any theory, model or programme, developed on the basis of a single or multiple behavioural change *theories, with the aim of altering health behaviours.*

The best-known and most widely-used health behaviour change theories, interventions and programmes were identified in the literature. A total of 118 randomised trials and systematic reviews were appraised. These related to health behaviour change in diabetes for which there were 50 studies: COPD, 25 studies; asthma, 17 studies; mixed patient groups, 13 studies; hypertension, 10 studies; and stroke, three studies.

Health behaviour change theories and interventions were found effective at improving some of the selected target behaviours. Appendix 1 summarises the systematic review's findings for each health behaviour change theory or intervention, related to each condition.

No one particular theory or programme was found to be consistently superior in bringing about health behaviour change across the different conditions. In part this is because not all theories or models have been research-tested against all the desired outcomes, for all the conditions.

Social Learning Theory was the most widely-used and effective health behaviour change theory. Some target behaviours were improved in four of the target chronic conditions (diabetes, asthma, hypertension and non-disease specific). Social Learning Theory improved physical activity, decreased depression, and improved quality of life for people with these conditions. Cognitive Behavioural Theory/Therapy (for COPD and hypertension), the Transtheoretical Model (for hypertension and mixed patient groups) and Self-regulation (as reported in diabetes and asthma) were also effective health behaviour change theories.

Motivational Interviewing was the most effective health behaviour change intervention for improving some of the target behaviours in four of the target chronic conditions (diabetes, COPD, asthma, hypertension).

Some interventions with no explicit theoretical framework also achieved positive outcomes in some studies. This group of interventions demonstrated four positive outcomes in mixed patient groups and were similarly effective in patients with diabetes, COPD, and slightly less so in patients with asthma and patients who had had a stroke.

The reason that interventions without an explicit theoretical framework achieved positive impacts is likely to be that they in fact included components that were based on health behaviour change theories, but that these were either not explicitly included in the intervention or described in the included trials. Where these were implicitly based on effective health behaviour change theories, the results would likely demonstrate effectiveness.

The evidence search and appraisal did not identify any systematic reviews or trials specifically on effectiveness for indigenous peoples, although some populations with low literacy and some Hispanic populations were included in the studies.

Interpreting the systematic review

Interpreting the evidence identified in this systematic review is complicated by study heterogeneity. That is, even within a condition, and for a given intervention, the studies reviewed vary in their design, the inclusion criteria for individuals entering them, the severity of disease and other factors. Furthermore, clinical outcomes were not always well documented and some of the trials were prone to selection bias. This heterogeneity probably serves to understate the effectiveness of interventions in any systematic review.

When reading the results summary in Appendix 1, it must also be remembered that the numbers of trials or reviews included for each disease varies greatly. Therefore care should be taken not to interpret fewer reported studies in one disease (eg, stroke) with another (eg, diabetes), as a reflection of poorer or greater success.

Another reason for mixed results in the systematic review may be that improvements in usual care (eg, improvements over the last two decades such as better medication and monitoring techniques) were occurring at the same time as behaviour change interventions were being trialled. This would act to reduce the relative effectiveness of health behaviour change interventions over usual care.

Key components of health behaviour change interventions

Based on the evidence from this systematic review it is suggested that there are a number of essential components of effective health behaviour change interventions. These include:

- problem solving/goal setting/written action plans
- lifestyle (including diet and physical activity and smoking cessation)
- disease-specific information
- medication
- relaxation and stress management.

The review highlighted evidence that individuals with poorer control of their disease were more likely to gain greater benefit from an intervention, and that disease-specific information is an essential component of health behaviour change interventions.

Whether the leaders of the interventions were professionals or lay leaders, they had to undergo specific training. It is not appropriate for any health behaviour change intervention to be facilitated by an individual who has not received specific training in the intervention.

Part Two: The New Zealand implementation experience

This section outlines New Zealand experience in implementing behaviour change interventions for people with long-term conditions. It presents key findings from five case studies sourced by NZGG to identify how local providers went about the business of altering or expanding from usual care to new health behaviour change interventions.
Full text of the five case studies is available at wwwhealth.govt.nz. A summary of each case highlighting critical features and successes, along with barriers and enablers to implementation is included in Appendix 3.

Many of the issues and challenges evident in the case studies – which hinge very largely on factors in the New Zealand sector-structural context – will be common to the implementation of any self-management intervention. Some of the case studies involved implementation of interventions described in the review. This should **not** be interpreted as evidence of effectiveness for that particular intervention; intervention effectiveness is addressed in Part One of this Review.

Key findings from case studies

Review of these case studies has identified the critical features for successful implementation and sustainability of health behaviour change programmes in New Zealand. Even though the interventions were in different settings, based on different theoretical bases, and with different governance models, there was consistency in the elements considered crucial. They are summarised below.

- A properly-resourced governance structure that includes broad representation of the funder, primary and secondary care providers, facilitators of the interventions, and the community from which participants will be drawn, is essential.

- Clinical champions who can publicise and support new programmes are crucially important, but champions alone cannot systematise new models of care unless they are supported by an effective governance structure, which itself is adequately resourced and supported operationally.

- In forming alliances between organisations to implement self-management programmes, it is important in the early phases to choose those partners with a clear strategic outlook and a visible commitment to change models of care, not partners who have little interest in altering from usual care.

- Early and extensive consultation with clinical leaders among the referrer community (eg, GPs and PHOs) is needed before the intervention commences so that they are able to support its implementation, understand and trust the programme, and refer individuals.

- It is crucial to pay attention to referral processes to assist GPs and other providers to refer patients without disrupting their workflow. Priority should be placed on integrating referral functionality into patient management software. In addition, communication back to referrers documenting how patients have achieved their self-management goals is a motivator for further referrals.

- Even though improved health behaviours may, of themselves be simple, coaching individuals in them is skilled work. Interventions cannot rely on volunteer labour. In all cases culturally-appropriate, well-selected, well-trained and well-supported facilitators are required. Ongoing training and support must be included for facilitators.

- Information for participants should be well designed and available in the participants' native languages wherever possible. The communities from which participants are being sought should be actively involved, at governance level and/or as champions of the programmes, and/or as leaders at the venues where the interventions are delivered.

- Interventions should be delivered in accessible and culturally-appropriate locations such as marae, or community halls.

Interpreting these results: a staged approach to selecting health behaviour change interventions

The picture painted by the international evidence is complex – no single intervention works for all conditions or behaviours/outcomes. The lessons in local implementation are that careful planning, programme support and programme management are required.

Box 1 sets out some example project steps to assist programme designers and implementers to maximise the chances of success in introducing health behaviour change interventions. These steps are not exhaustive, their order and emphasis can vary, and skilled programme implementers will address all of them as a matter of course.

The steps are not a formal project protocol or requirement, but these are given as a brief checklist for 'the basics'.

Box 1. A staged approach to selecting health behaviour interventions

Useful stages in selecting and implementing effective health behaviour change interventions for people with long-term chronic conditions may be as listed below.

1. Identify health behaviour change(s) required and condition(s) of interest
   (eg, increased physical activity in a person with diabetes).

2. Use the Tables in Appendix 1 to select the one to three most effective behaviour change interventions for your long-term condition(s) of interest.

3. If possible, discuss your selection with New Zealand experts in the specific intervention; identify what existing interventions, course materials and staff training resources may be available. There are experts living and working in New Zealand for some popular programmes (such as The Flinders Program™ and Stanford Model), and the College of Clinical Psychologists and the New Zealand Psychological Society can direct health professionals to experts in several of the other behaviour change theories and models described above.

4. Consider how current care models and pathways for patients can be adjusted to include delivery of the new intervention. This must include considering the training and resource requirements for each of these interventions.

5. Select final intervention(s).

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6. Identify resources and funding for training, staff time and organisational development including the support required for properly functional clinical and cross-sectoral governance, and for any materials development required for the target individuals with long-term conditions, and for the health providers who will be making referrals. Consider the ongoing requirements for all resources and funding so that all stakeholders have confidence in the sustainability of the programme from the outset.

7. Consult with health care providers and community; set up at the beginning a programme governance panel that includes representatives of the funders, health care providers, patient representatives, people from the diverse communities including different ethnicities, and 'champions' who will help promote the programme through their networks in the community. Involve primary care from
the outset.

8. Design a referral process that is easy for referrers. Electronic referrals are likely to be most convenient for referrers.

9. Ensure all facilitators of the programme are trained, supported, paid and ideally of the same ethnicity as the participants.

10. Use accessible venues in which people feel comfortable, and provide courses and materials in the languages of the participants.

11. Consider how you will measure and document improvements or setbacks for individuals participating in the programme, and for the intervention and your programme as a whole. Most well-defined behaviour change interventions use specific measures and systems for tracking consumers' achievement of their goals.

12. For measuring programme success, it is crucial to measure both processes of care and intermediate outcomes, as well as final outcomes for consumers. Information on processes and intermediate outcomes can help you to understand why your programme may struggle initially to create success for people with long-term conditions, and to improve it.

13. Once you have introduced the programme, maintain good communication with referrers, through feedback showing successful outcomes for the patients they have referred.

14. Continue to build trust in the programme with all stakeholders, and provide ongoing mentoring and support for programme facilitators.

Appendix 1: Summary results from the systematic review

This appendix provides summary information from *RapidE Chronic Care: A systematic review of the literature on health behaviour change for chronic care* (2011) organised according to specific long-term conditions. Full text of the systematic review including references is available at www.health.govt.nz

1. Diabetes

There were more studies conducted on health behaviour change in diabetes than in any other condition. More interventions of different types have been trialled for diabetes than for the other chronic conditions, which has led to identification of more successful interventions (as well as those that were no more effective than controls).

Effective interventions

By referring to Table 1, it can be seen that many models were successful in changing some health behaviours in people with diabetes. The only behaviour that was not changed by any of the interventions reviewed was the reduction of health resource use (including non-routine visits to a health professional, emergency room attendance and hospitalisation).

- Behaviours most often changed: increasing physical activity and improving self-efficacy.

See Chapter 4 pages 27–46 of the systematic review for further details.

2. Chronic obstructive pulmonary disease

Effective interventions

For pulmonary disease, the 25 studies found four types of interventions that were successful in bringing about health behaviour change (see Table 2). Cognitive Behavioural therapy, Chronic Care Model and Motivational Interviewing were each effective in three areas, and interventions with no explicit theoretical framework were effective in four areas.

- Behaviours most often changed: physical activity and medication adherence.

Further evidence required

There was no published evidence identified regarding the effectiveness of health behaviour interventions to improve diet, manage weight or blood pressure in people

with COPD. More research is needed to determine the effectiveness of alternative models, especially Social Learning Theory, that have been shown to be effective in other long-term conditions.

See Chapter 5 pages 47–62 of the systematic review for further details.

3. Asthma

Effective interventions

The 17 studies in asthma identified four types of health behaviour change interventions that effected successful outcomes (see Table 3). These were Social Learning Theory, Self-regulation, Motivational Interviewing and interventions with no explicit theoretical framework.

- Behaviours most often changed: medication adherence, improved quality of life, reducing health resource use.

Further evidence required

No published evidence was identified in this systematic review for the effectiveness of health behaviour interventions for improving diet and managing weight, improving depression or managing blood pressure in people with asthma.

See Chapter 6 pages 63–75 of the systematic review for further details.

4. Hypertension

Effective interventions

In the 10 studies in people with hypertension, successful management of blood pressure was achieved through Social Learning Theory, Cognitive Behavioural Theory, Chronic Care Model, Motivational Interviewing and interventions with no explicit theoretical framework (see Table 4). Social Learning Theory and Cognitive Behavioural Theory were effective at improving the greatest number of outcomes, and Social Learning Theory improved all the outcomes reported on. Use of a Transtheoretical Model successfully improved medication adherence.

- Behaviours most often changed: management of blood pressure, increased physical activity, improving medication adherence.

Further evidence required

There were no published health behaviour change intervention studies identified in relation to addressing depression in people with hypertension.

See Chapter 7 pages 76–86 of the systematic review for further details.

5. Stroke

Effective interventions

There were only three studies identified on behaviour change in survivors of stroke (see Table 5). The Stanford Model, and an intervention with no explicit theoretical framework, both effected change in two areas.

- Behaviours changed: physical activity, improved quality of life and increased self-efficacy.

Further evidence required

No evidence was identified for interventions addressing health behaviour change in diet and weight management, or self-monitoring/clinical outcomes, medication adherence, health service resource use or managing blood pressure in stroke survivors. It is possible that interventions aimed at stroke survivors are more likely to be physical rehabilitation interventions, which may explain the lack of evidence for other target behaviours.

See Chapter 8 pages 87–93 of the systematic review for further details.

6. Mixed patient groups with chronic conditions

Effective interventions

Of the 13 different studies of health behaviour change in mixed patient groups with long-term diseases, Social Learning Theory and interventions with no explicit theoretical framework both brought about the most positive changes (see Table 6). The only other model identified with a successful outcome was the Transtheoretical Model.

- Behaviours most often changed: increased physical activity, improving quality of life and improving self-efficacy.

Further evidence required

Evidence was sought to determine whether generic interventions are sufficient to be able to manage effectively any chronic condition. This is important because older people are more likely to develop multiple chronic conditions and it would be therefore be useful to have a generic health behaviour change programme that achieved successful outcomes for their multiple conditions. There was insufficient evidence to identify such an intervention. Evidence from longer-term follow-up and with further clinical evidence is needed.

See Chapter 9 pages 94–103 of the systematic review for further details.

Appendix 2: Summary tables

Table 1 Summary of health behaviour change interventions for people with type 2 diabetes

	Increased physical activity	Improving Diet and weight management	Decreased depression	Improved quality of life	Increased self-efficacy	Clinical outcomes/self-monitoring (including glycaemic control)	Medication adherence	Decreased health resource use	Managing blood pressure
Social Learning Theory (Self-efficacy)	+	+	+	+	+	?	NR	NR	?
Self-regulation	+	+	NR	=	+	?	=	NR	NR
Empowerment Theory	?	?	+	=	=	?	NR	=	+
Motivational Interviewing	+	=	NR	+	+	?	+	NR	NR
Stanford Chronic Disease Self-Management Programme	=	?	?	=	+	?	NR	=	=
Chronic Care Model	+	?	NR	=	+	=	NR	NR	?
5As Counselling	NR	NR	NR	NR	=	+	NR	NR	NR
No explicit theoretical framework	+	?	NR	=	+	?	=	?	+

KEY: NR not reported; + evidence suggests a benefit for self-management intervention compared with control; ? mixed evidence, unable to make a conclusion; = evidence suggests no benefit of intervention over control

Table 2 Health behaviour change interventions for people with chronic obstructive pulmonary disease

	Increased physical activity	Decreased depression	Improved quality of life	Increased self-efficacy	Self-monitoring/ clinical outcomes	Medication adherence	Decreased health resource use
Cognitive Behavioural Therapy/Theory	+	+	+	NR	NR	NR	=
Motivational Interviewing	+	=	+	=	=	+	?
Chronic Care Model	+	NR	?	NR	=	+	+
No explicit theoretical framework	+	?	?	=	+	+	+

KEY: NR not reported; + evidence suggests a benefit for self-management intervention compared with control; ? mixed evidence, unable to make a conclusion; = evidence suggests no benefit of intervention over control

Table 3 Health behaviour change interventions for people with asthma

	Increased physical activity	Improved quality of life	Increased self-efficacy	Self-monitoring/clinical outcomes	Medication adherence	Decreased health resource use
Social Learning Theory (Self-efficacy)	NR	+	+	?	+	NR
Self-regulation	NR	=	=	NR	+	+
Motivational Interviewing	NR	+	NR	+	+	+
Flinders Program	?	=	=	=	NR	NR
No explicit theoretical framework	+	=	=	?	+	?

KEY: NR not reported; + evidence suggests a benefit for self-management intervention compared with control; ? mixed evidence, unable to make a conclusion; = evidence suggests no benefit of intervention over control

Table 4 Health behaviour change interventions for people with hypertension

	Increased physical activity	Improved diet and managing weight	Improved quality of life	Increased self-efficacy	Medication adherence	Decreased health resource use	Managing blood pressure
Social Learning Theory + Stages of Change	+	NR	NR	+	NR	NR	+
Transtheoretical Model	NR	NR	NR	NR	+	=	=
Cognitive Behavioural Therapy/Theory	+	=	+	NR	NR	NR	+
Motivational Interviewing	=	+	NR	NR	NR	NR	+
Chronic Care Model	=	=	=	NR	+	NR	+
No explicit theoretical framework	NR	NR	NR	NR	NR	NR	+

KEY: NR not reported; + evidence suggests a benefit for self-management intervention compared with control; ? mixed evidence, unable to make a conclusion; = evidence suggests no benefit of intervention over control

Table 5 Health behaviour change interventions for people who have had a stroke

	Increased physical activity	Improved depression	Improved quality of life	Increased self-efficacy
Stanford Model	+	=	=	+
No explicit theoretical framework	+	NR	+	NR

KEY: NR not reported; + evidence suggests a benefit for self-management intervention compared with control; ? mixed evidence, unable to make a conclusion; = evidence suggests no benefit of intervention over control

Table 6 Mixed patient groups with chronic conditions

	Increased physical activity	Improving diet and managing weight	Decreased depression	Improved quality of life	Increased self-efficacy	Self-monitoring/ clinical outcomes	Medication adherence	Decreased health resource use
Ecological Theory		=	NR	NR	NR	NR	NR	NR
Social Learning Theory and Transtheoretical Model	NR	NR	NR	NR	+	NR	NR	NR
Social Learning Theory	+	NR	+	+	+	=	NR	=
Stanford Model (Chronic Disease Self-Management Programme)	?	=	=	==	?	=	=	=
No explicit theoretical framework	+	NR	NR	+	+	NR	NR	+

KEY: NR not reported; + evidence suggests a benefit for self-management intervention compared with control; ? mixed evidence, unable to make a conclusion; = evidence suggests no benefit of intervention over control

Appendix 2: Health behaviour change theories and interventions

This appendix provides brief descriptions of health behaviour change theories and interventions discussed in this Review (in alphabetical order). The content of this appendix is extracted from the NZGG systematic review *RapidE Chronic Care: A systematic review of the literature on health behaviour change for chronic care* 2011 (pages 19-26). The full text of the systematic review including references is available at www.health.govt.nz.

The **Chronic Care Model** developed by Wagner and colleagues at the MacColl Institute identifies the essential elements of a healthcare system that encourage high-quality care. These elements are the community, the health system, self-management support, delivery system design, decision support and clinical information systems. The Wagner Chronic Care Model acknowledges the central role of the patient in their care that involves a responsibility for their own health. It involves an integrated approach, with development of care plans and support, providing a framework for change.

Cognitive Behavioural therapy is a highly-structured psychotherapeutic method used to alter distorted attitudes and problem behaviour by identifying and replacing negative inaccurate thoughts, and changing psychological or physical rewards for positive behaviours. It was first described by Beck in the 1960s. Cognitive behavioural therapy can take place on a one-to-one basis or with a group. The duration of the interventions can range from 6 weeks to 6 months, and sessions usually last 30 to 60 minutes with a trained therapist.

Ecological Theory developed originally by Brofenbrenner in the 1970s, proposes that an individual's development is influenced by environmental factors such as the setting where the person lives or works. Cultural contexts and external social influences are emphasised in this theory.

Empowerment models are grounded in recognition of an individual's autonomy. The role of the health professional is to enable the individual through knowledge and confidence to make informed choices. People with health conditions are viewed as being experts living with their condition. Individuals are encouraged to participate in the learning process and to discuss their feelings towards living with the condition and the way it impacts on their everyday lives. The individual is encouraged to have autonomy by working in alliance with the health professional to identify successful strategies.

The **Flinders Program**^{TM} developed at Flinders University, South Australia, is based on Cognitive Behavioural Theory and Motivational Interviewing principles employed to support positive behaviour change. It uses generic tools and processes that enable clinicians and patients to conduct a structured process of collaborative assessment of self-management skills and behaviours, identification of problems and goal setting leading to individualised care-plans. It is a structured and personalised intervention, with the level of contact dependent upon individual requirements.

Motivational Interviewing was first described in the early 1980s by Miller. A recent definition of Motivational Interviewing is '…a collaborative, person centred form of guiding to elicit and strengthen motivation for change'. (www.motivationalinterviewing.org) Motivational Interviewing involves a brief intervention that typically comprises sessions of five to 60 minutes of counselling and education provided over one to five sessions. Motivational Interviewing can be delivered via individual or group sessions, using various media including face-to-face or telephone calls.

Self-regulation is a common feature of cognitive and behavioural therapies. It was defined by Karoly in 1993 as a process that enables an individual to guide goal-directed activities, not only over time but also over changing circumstances. Regulation usually requires modulation of thought, affect, behaviour, and attention through a predetermined use of mechanisms and skills. For example, self-regulation is characterised by factors including goal setting, self-monitoring, activation, self-evaluation, self-efficacy and implementation.

Social learning theory has the concept of self-efficacy as a central tenet. The individual must value the outcomes they believe will occur as a result of the therapy. Self-efficacy is increased in ways such as providing clear instructions, or the opportunity for skill development or training, and modelling the desired behaviour. The process requires self-reflection and attention to internal dialogue to bring about change. Social learning theory was first described by Bandura in 1977.

The **Stanford Model** (sometimes called the Lorig course or the Chronic Disease Self-Management Program) is based on Bandura's concept of self-efficacy within Social Learning Theory. The Stanford Model was developed at Stanford University, USA in the 1990s and is used worldwide. It comprises a 2.5-hour face-to-face workshop held weekly for 6 weeks, usually in community settings. The content includes techniques to

deal with problems associated with the long-term problem; appropriate exercise, stress management, use of medications, good communication, nutrition and treatment evaluation.

The **Transtheoretical model** (also known as the Stages of Change Model), first described by Prochaska in the 1980s is an integrated approach based on the decision-making of the individual. Behaviour change is conceptualised as a five-stage process or continuum, related to a person's readiness to change (stages of change); pre-contemplation, contemplation, preparation, action and maintenance. People are thought to progress through these stages at varying rates, often moving back and forth before attaining the goal of maintenance. In this model, people use different processes of change as they move from one stage of change to another. Thus, efficient self-change depends on doing the right thing (processes) at the right time (stages). Tailoring interventions to match a person's stage of change is essential.

The **5As Model** is an international approach developed by the United States Department of Health in 1996 as a smoking cessation intervention. It is used in primary health care to provide structure to the interaction between health professionals and clients in the detection, assessment and management of smoking, nutrition, alcohol and physical activity (SNAP) risk factors. The 5As are:

- Assess – Ask about the behaviour
- Advise – Give a clear message of encouragement to change
- Agree – Set goals based upon readiness to change
- Assist – In knowledge acquisition, skills, confidence and support
- Arrange – Referrals and schedule in follow-up contacts.

Appendix 3. New Zealand implementation of behaviour change interventions for people with long-term conditions: five case studies

This appendix provides a summary of five case studies sourced by NZGG in 2011 to identify how local providers went about the business of altering or expanding from usual care to new health behaviour change interventions. Full text of the five case studies is available at www.health.govt.nz

Case one: The Heart Guide Aotearoa Programme

The Heart Guide Aotearoa Programme is a home-based programme aimed at increasing participation and completion in cardiac rehabilitation and improving the management of cardiovascular disease, especially in Māori.

This is a pilot project to determine whether an individual's cardiac rehabilitation needs can be met within their own environment, thereby improving equity. Māori have been previously under-represented in the uptake of traditional cardiac rehabilitation. This multi-faceted programme provides goal setting, problem solving, self-monitoring, action planning, relaxation training and correction of faulty health beliefs. Facilitators provide individual support, respond to the person and empower the individual to self-manage.

The National Heart Foundation is the main funder of the programme, but implementation is managed at the DHB and PHO level, and ongoing costs are borne by the local providers. The pilot has been conducted at six sites in New Zealand; three in the South Island, three in the North Island. As at 2011 this programme is ongoing.

What has assisted implementation or uptake?

- Recognition by providers that cardiovascular disease is associated with high levels of mortality and morbidity
- A novel approach that focuses on health inequalities
- A home visit, which helps develop rapport between the facilitator and the individual, and participants value this

- An established relationship between the HGA providers and understanding of the programme.

What has challenged implementation or uptake?

- Concerns about the financial sustainability of the intervention and the source of future funding
- Lag time between training facilitators and implementing the programme has negatively impacted on facilitators' confidence and engagement.

Successes of the programme

- Uptake of the programme by Māori, people in rural areas and those who would otherwise not have engaged in a cardiac rehabilitation programme
- Development of resources, which are valued by participants and facilitators
- Improvement of access through adoption of a flexible approach to the delivery of the programme, so that it is suitable and convenient for participants.

Critical features to secure successful change

- Facilitators must deliver the programme according to the structure and principles in the manual
- Select facilitators for their commitment help them develop rapport with individuals and understand their priorities
- Maintaining the patient diary is a key aspect of the programme. This effectively engages the individual with the programme
- Cost of materials, at $22 per set, was a barrier for health providers. Therefore, these costs should be kept to a minimum. However, the materials were valued by patients
- It is crucial to involve primary and secondary care in the intervention from the early stages
- Streamlining referral processes is critically important.

Case two: The Diabetes Self-Management Education Programme

The primary objective of this programme is to determine whether a 6-week self-management education programme, delivered as group therapy, will produce measurable improvements in participants' clinical outcomes, such as HbA1c, body mass index, and blood pressure.

Other objectives are to determine whether the programme meets the diverse needs of a multicultural population, and if the course content is appropriate and acceptable to

Māori and Pacific people.

In its first year 250 people completed the 6-week programme that involved one session of two hours each week. The role of trained facilitators is to provide individual support responsive to each person's needs, and empowerment of the individual to increase their efficacy to self-manage and take control of their health.

The facilitators meet every 6 to 8 weeks for ongoing training and support in their roles. Their skills are recognised as critical to the success of the programme, and their training includes skill-building in group work, use of clinical information, and use of key written and other resources, Māori and Pacific cultural competency training, smoking cessation and physical activity knowledge.

The intervention is designed and driven by Counties Manukau DHB. At the outset it established a multidisciplinary implementation steering group that included the CEOs of each PHO to promote a collaborative approach to the programme. As at 2011 this programme is ongoing.

What has assisted implementation or uptake?

- Good support has been evident from programme 'champions' and senior management. The steering group also has representation from health promotion, project management, and Pacific DHB staff, clinical and community work staff, and psychologists. This promotes support for the project and the facilitators
- The facilitators' commitment, passion and skills, and the ongoing training and support for them
- The range of people and ethnicities both in the steering group and employed as facilitators, to ensure the programme is culturally-appropriate and provide networks to aid recruitment. People can attend groups that are appropriate and convenient for them, regardless of the PHO with which they are enrolled.

What has challenged implementation or uptake?

- GPs can be reluctant to refer patients to the programme and there is no simple, electronic patient-referral process into the programme
- Staffing issues include: patchy availability to attend the training, being expected to facilitate this programme in addition to many other duties, retention, few resources to assist them to develop brochures and other materials
- Suitable venues in the community are frequently not available, as they are fully

booked months in advance

- Lack of management support in some PHOs
- Difficulty in accessing the target group as it includes different social and cultural groups living in diverse environments, with different languages, poor access to transport, and a range of work commitments and low educational levels.

Successes of the programme

- A reported significant improvement in clinical outcomes, as well as individuals' understanding of, and ability to manage, diabetes
- Trained educators (including health professionals) have delivered the programme effectively
- Significant engagement from the Pacific and Asian communities
- Participants have rated the programme highly and have provided positive feedback.

Critical features to secure successful change

- A full-time person is needed to coordinate a programme of this size. Critical responsibilities include managing the relationships between the stakeholders at all levels, promoting the programme to all agencies, and ensuring smooth and effective referral processes
- Appropriate selection of facilitators and provision of ongoing mentoring for them
- IT development is required to support referrals from GPs. Referrals need to be integrated into patient management software to enable straightforward and efficient systems of patient enrolment
- GPs should be provided with enough information to understand and trust the programme; GPs across all the PHOs need to be involved from the outset of the programme. Those who are visited by facilitators are more likely to then refer patients into the programme
- Participants' success must be relayed back to GPs as this is seen to overcome the lack of trust or suspicion
- Programme content and training should be kept simple and focused; the facilitators should use simple key messages and not too much clinical information
- Outcome measurement needs to be used consistently without burdening participants; a structured questionnaire such as the Health Education Impact Questionnaire is useful, although it does need to have fewer questions so it is less time consuming
- The programme needs to be available in more languages and networks developed in different cultural communities

- Ongoing regular follow-up with individuals is needed to keep them engaged and maintain their motivation and support networks.

Case three: The Maori Diabetes Self-Management Education Programme

The Maori Diabetes Self-Management Education programme is an eclectic health behaviour change intervention, drawing on Stanford and Flinders models to address self-management, combined with Māori models of health.

This programme aims to provide: community-based diabetes self-management education to improve glycaemic control for Māori with type 2 diabetes; a culturally-appropriate intervention in venues where Māori will feel comfortable; whānau and individuals with tools that will allow them to live a full and active life; and a service that is affordable, accessible and culturally-appropriate.

One PHO has been running another diabetes self-management programme with good results but it has had difficulty enrolling and retaining Māori. This project is a collaboration between two PHOs and the initiating Waitemata DHB. An experienced Māori self-management education facilitator, trained in Stanford and Flinders models, has been employed to design and implement the programme. As at 2011, this programme is ongoing.

What has assisted implementation or uptake?

- Use of an appropriate venue, viz, a local marae which is accessible, comfortable and culturally-appropriate. The use of the marae means their kaumatua and kuia are available and committed to the programme to give advice and support, and provide monitoring. The programme includes a whānau ora service with navigated pathways for people wanting social, economic or housing interventions. This holistic approach is important and the principal of Tino Rangatiratanga/self-determination is described as paramount
- Promotion of the programme through Māori TV and other media, including local and regional newspapers, and through whānau networks. This is more successful than just waiting for GP referrals
- Sponsorship from various organisations, which includes contributions of health food items, healthcare products, promotional t-shirts and educational resources.

What has challenged implementation or uptake?

- Too few Māori delivering aspects of the intervention, especially nutritionists and psychologists
- Insufficient and irregular referrals from GPs and other health care and community organisations; these providers have many different groups seeking their support for referrals and so it is important to make the process easy for GPs, and to have good rapport with practice nurses.

Successes of the programme

- Greatly improved understanding and 'ownership' of their conditions by participants, resulting in improved self-management of their blood sugar levels and more self-testing
- The formation of an ongoing Māori diabetes self-help group to allow continuing support for group participants.

Critical features to secure successful change

- Negotiate access with the PHOs in the programme to all their GPs from the beginning, so that GPs know about it, understand its purpose, recognise it is a PHO project and trust it
- Good relationships with GPs and practice nurses are essential for referrals, and also to have the persons' lab results available to them and the facilitators of the programme. Adding the programme into the electronic referral processes will promote referrals
- The programme requires a considerable amount of administrative support, from communication across all stakeholders, to promotion and recruitment of participants, and development of processes for implementation and ongoing delivery. Adequate funding is required for this essential element
- Further contact with participants by phone in-between sessions has been suggested as a way of monitoring progress and building motivation
- Use of culturally-appropriate venues
- Use of appropriate facilitators with the right skills; nurses have been recruited and trained in Flinders and Stanford models of self-management.
- Use community resources, community champions and whānau networks.

Case four: The Samoan Self Management Education Programme for People with Long-term Health Conditions

The programme aims to provide Samoan people with broader capability, and knowledge to better self-manage their health needs and the health needs of their families. It is also intended to train Samoan trainers to be community leaders in this programme. It is a group-based, highly interactive programme delivered weekly for 6 weeks in community halls and churches. This programme is an adaptation of the Stanford Model, using the Samoan language and a translation of the Australian Aboriginal Living Improvements for Everyone (L.I.F.E.) manual (see Rural Interprofessional Self-Management Education Network www.risen.org.au for more information on the L.I.F.E. Manual). Underpinning theoretical concepts are reasoned action, social learning, self-regulation and self-efficacy.

Each group session lasts for about 3 hours, conducted in Samoan, and is facilitated by trained, non-medical people (but they are frequently health professionals), using a Samoan-language manual. About 250 people have participated in the programme in its first 18 months.

The project was initiated and managed by staff from the Counties Manukau DHB and run in partnership with PHOs. Most of the staff facilitators are employed by PHOs. As at 2011 this programme is ongoing.

What has assisted implementation or uptake?

- Working with church leaders and other community leaders has helped engage the community
- Having a culturally-appropriate programme, delivered in Samoan, has promoted success and given participants a better understanding of their diseases and the management of them
- Use of employed (paid) facilitators to deliver some of the programme has helped with its establishment and sustainability; using volunteers or salaried individuals with limited time does not achieve programme objectives
- Facilitators employed by the DHB have been able to work collaboratively across PHOs
- Word-of-mouth referrals from the Samoan community.

What has challenged implementation or uptake?

- Recruitment directly from primary care has been a challenge especially if GPs have had doubts about the appropriateness of the model of intervention
- Resistance from some PHOs to use their employees because of the costs and the time needed for training. Too little time was considered to have been spent in direct communication with general practices
- People have been sometimes reluctant to attend a meeting in a church that is not of their own denomination
- Difficulty in recruiting volunteer lay facilitators. The programme's success has depended on having employed professional staff and not unpaid lay volunteers.

Successes of the programme

- Positive changes in the lives of individuals and families including involvement in activities to promote their health, and greater knowledge has enabled them to better manage their conditions; participants have reported a 'phenomonal' change in their understanding of the impact of the disease on their body and what they can do to promote better control
- Participants have reported greater confidence to take an active role in their doctor visits because they have understood more about disease process and management of it
- Implementation of the Samoan translation has been successful, ensuring the health messages are relevant and acceptable. Translation into additional Pacific languages is now requested.

Critical features to secure successful change

- PHO and practice management engagement to make referrals, and to enable electronic referral via patient management systems. This requires direct communication with GP practices, rather than relying on PHOs to advise GPs of the programme
- Ability to employ facilitators and not rely on unpaid volunteers
- Community engagement as this is an important source of information about the intervention and referrals
- Comprehensive communications strategy that includes appropriate media channels to the public.

Case five: Implementation of the Flinders Program^{TM} by a Primary Health Organisation

This project, started in March 2010, aims to improve chronic care management in primary health care through the provision of self-management support, particularly for people with comorbid long-term conditions. It involves the implementation of the Flinders Program^{TM} for Chronic Condition Self-management into primary health care settings, such as general practices, community Hauora services and independent nursing services.

The Flinders Program^{TM} appears widely accepted in the New Zealand health sector and 500 health professionals have been trained in its use here since its development in Australia in 2005. The Flinders Program^{TM} is designed to facilitate collaborative assessment of self-management skills and behaviours by the individual and their clinician, leading to the identification of problems, goal setting and the development of individualised care plans (Flinders Human Behaviour and Health Research Unit, 2011). It employs a generic set of processes and tools, including the Partners in Health Scale (PIH), the Cue and Response Interview, and the Problems and Goals Assessment.

The implementation project is led by a senior nurse working as a clinical facilitator within the Health Hawke's Bay PHO and has the support of the PHO and the Hawke's Bay DHB. A total of 150 additional health care providers across 30 practices have been trained in the Flinders Program^{TM} as part of this project. Additional Care Plus funding has been made available by the PHO for practices completing Flinders Program^{TM} assessments. To date, more than 100 people with long-term conditions have received an individualised self-management care plan as a result of this implementation project.

What has assisted implementation or uptake?

- Building on the experience of failures elsewhere in the country, the business case for the project set out a realistic budget that included ongoing costs of implementation in both time and resource terms.
- Early training of 10 registered nurses (including 4 nurses released by the DHB for training time) as accredited Flinders Program^{TM} trainers has allowed early 'roll-out' of training workshops to health providers. This has helped to achieve a 'critical mass' of health providers able to provide the Flinders Program^{TM}
- Two-day training workshops that are provided at no cost to attendees
- There is ongoing support for practices through regular PHO Clinical Facilitator visits.

What has challenged implementation or uptake?

- The time needed to complete a Flinders Program™ assessment (approximately one hour for the initial consultation). Additional Care Plus funding has been made available by the PHO to reimburse general practices for this time to achieve ongoing provider 'buy-in'. For hospital outpatient clinics, the time required is not feasible for current nursing workflow (where 5 or 6 patients are seen per hour). In this setting, community nurses complete Flinders Program™ assessments on patients identified as being most likely to benefit
- The time required for organisation of training workshops. Employing a dedicated administrator to coordinate the workshops has been valuable and in hindsight, it would have been helpful if this position had been created earlier in the project
- Lack of integration of information contained in Flinders Program™ tools into patient health records held in the practice patient management system. An extension to the project will see Flinders Program™ tools integrated into MedTech's patient management system.

Successes of the programme

- A key success is the positive written feedback from participants indicating that the programme has been empowering, has resulted in the exchange of new information (to the individual) to foster self-management and provides motivation for change
- The training workshops foster service integration as they bring together a wide cross-section of health providers from across the primary-secondary care interface
- The provision of 11 Flinders Program™ training workshops to 150 health care providers, predominantly registered nurses (clinical nurse specialists, nurse practitioners, district nurses, practice nurses). Other health providers have been trained including general practitioners, physiotherapists, dietitians, community pharmacists, and aged care staff
- The project has established networks with academic institutions' long-term condition programme coordinators and Self-Management Support expert advisors
- Identified value of Flinders Program™ data to ongoing clinical audit processes.

Critical features to secure successful change

- An overarching evidence-based business case setting out a comprehensive workforce development programme for long-term conditions management, of which the Flinders Program™ was a component
- PHO funding and administrative support

- Early interest from DHB planners and funders with the provision of additional funding to ensure that the self-management support infrastructure extends beyond the primary health care workforce
- The focus on ensuring fidelity to the Flinders Program^{TM} model through means including use of an external clinician expert, standardisation of resources provided to trainers, and ongoing support from the Flinders Human Behaviour and Health Research Unit.