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Scaling up type 2 diabetes prevention programs: National and State interventions in Australia

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Policy development for diabetes prevention in Australia

Australia has one of the world's largest systematic, government-funded diabetes prevention programs. This chapter describes a federally-funded national program, a state-funded program in Victoria and an implementation trial in New South Wales. A coincidence of events, influential individuals and policy directions has led to these initiatives. The Federal, State and Territory governments come together as the Council of Australia Governments (COAG) to discuss public policy of national significance, including health care reform. In 2005 at the behest of the Australian Health Ministers' Advisory Council the National Public Health Partnership undertook economic modelling of diabetes prevention and at the same time the Australian Government Productivity Commission and State treasuries undertook analyses of the impact of chronic disease (including diabetes) on workplace productivity in Australia. Results of these economic analyses, accumulating scientific evidence of effectiveness of diabetes prevention internationally and the results of local translation research projects, particularly the Greater Green Triangle Diabetes Prevention Program[1] (GGT DPP), all strengthened the case for a national policy on diabetes risk reduction. A number of significant individuals, academics and health advocates in the field of diabetes and obesity also exerted influence on government to take action on preventing diabetes.

Through the National Reform Agenda, COAG led by the Victorian government circulated a consultation document on diabetes prevention in 2006 advocating national standards for risk reduction and naming the GGT DPP[1] as the only evidence-based intervention in Australia. In April 2007 COAG agreed to work which led to national standards for lifestyle modification programs and the development of the Australian Diabetes Risk Assessment Tool (AUSDRISK)[2]. It is a ten-item questionnaire that assesses a person's risk of developing type 2 diabetes within the next five years. Items are based on the following risk factors: age, gender, country of birth, family history of diabetes, history of high blood pressure, smoking status, fruit and vegetable intake, physical activity levels, and waist circumference. A score equal to, or above 15 on AUSDRISK is considered high risk.[3]

Federal, State and Territory governments agreed to fund programs to prevent and more effectively treat diabetes through the Australian health system. The Federal diabetes prevention program covers people aged 40-49 years old. Consequently New South Wales and Victorian governments have decided to fund programs for people aged 50 years and over. The *Life! Taking Action on Diabetes* program in Victoria and the *Prevent Diabetes Live Life Well* program in New South Wales are two State based lifestyle modification programs.

The Federally funded diabetes prevention program

The Federal government through Medicare funds a diabetes prevention program covering all Australians aged 40 to 49 years of age (i.e. those who score as being at sufficiently high risk on the AUSDRISK tool). Participants can be reimbursed for attending a General Practitioner (GP) and discussing their risk factors if they are at high risk and have diabetes

excluded. An option from this assessment is for people to attend an accredited, government subsidised lifestyle modification program to reduce a participant's risk of diabetes. The Federal program is administered by the Australian General Practice Network through the 111 Divisions across Australia. Divisions of General Practice are voluntary associations funded by the Federal Government that help practices to implement health promotion, early intervention and prevention strategies, chronic disease management, medical education and workforce support. They are the gateway for working with GPs.

Uptake of the Federal program has been slower than anticipated, but encouragingly the Federal Department of Health is working with State and Territory governments to determine how the program might be improved.

Diabetes prevention in Victoria

The *Life! Taking Action on Diabetes* (Life!) program is a four-year statewide program funded by the Victorian Department of Health launched in August 2007 for people aged 50 and over. It is managed by Diabetes Australia-Victoria (DA-Vic) which is the non-government organisation actively engaged in advocacy and support for people in Victoria affected by diabetes and those at risk.

Program implementation

The objectives of the Life! program are to:

- Identify Victorians at high risk of developing type 2 diabetes and those with undiagnosed type 2 diabetes through systematic risk assessment.
- Deliver a community-based lifestyle behaviour intervention for 25,000 eligible Victorians to reduce their risk of developing type 2 diabetes.
- Increase community awareness of the risk factors, seriousness and consequences of type 2 diabetes, and the resources available to support healthy and active lifestyles

Implementation of the Life! program involved adapting the evidence based GGT DPP[1], and building the workforce and the framework to deliver the program statewide. A purchaser-provider arrangement was chosen by DA-Vic whereby accredited providers are contracted to deliver the Life! six session group programs (see below).

All service providers who deliver Life! have a service level agreement with DA-Vic, that includes the following requirements:

- Deliver the program only to those participants who are at high risk of developing type 2 diabetes. High risk is determined by the Australian AUSDRISK tool.
- Confirm with a health professional the person's risk score and that the potential participant has had diabetes excluded.
- Follow the eligibility criteria (see section on recruitment below) for participant enrolment into the program.
- Only certificated facilitators can deliver the program so that standards and fidelity are maintained.

Program delivery

- All sessions are delivered by the same certified facilitator and according to the participant manual.
- All participants are supplied with the approved participant manual at the first session.

- The program is conducted in groups (of eight to 15 people) that will normally include the same participants for all sessions.
- Accompanying spouses or partners may attend the group sessions if the group and the facilitator agree in the first session. The program consists of six group sessions of at least 90 minutes duration conducted over an eight month period.
- The sessions on nutrition and physical activity are delivered by appropriately qualified personnel.
- The program is provided in suitable and safe premises with appropriate facilities.

Data collection and record keeping requirements

- A signed referral form is obtained from each participant giving permission for data to be provided to DA-Vic (unless the referral was sent to DA-Vic directly).
- Specified participant data as detailed in the minimum data set are collected and submitted in electronic format via the secure Life! website.
- Database management complies with relevant privacy legislation. The program provider ensures that only appropriate personnel have passwords and may access the database.
- For each participant, the provider organisation communicates outcomes after completion of sessions 5 and 6 to the referring general practitioner and the participant.

Providers of Life! programs

The providers undergo a self administered accreditation process every two years. The providers are non-profit, public sector, and private agencies. They employ or contract with certified Life! facilitators to deliver the program.

The workforce for delivery of the group sessions consists of health professionals who obtain certification as a Life! facilitator. They are required to:

- Achieve key learnings acquired during the preparation for Life! facilitator training.
- Attend a three day certified training program (see Figure 1). Details of the training program are in the chapter titled "Training facilitators of group-based diabetes prevention programs: recommendations from a public health intervention in Australia".
- Begin two groups within 12 months of training completion.
- Attend the annual Development and Review Day.

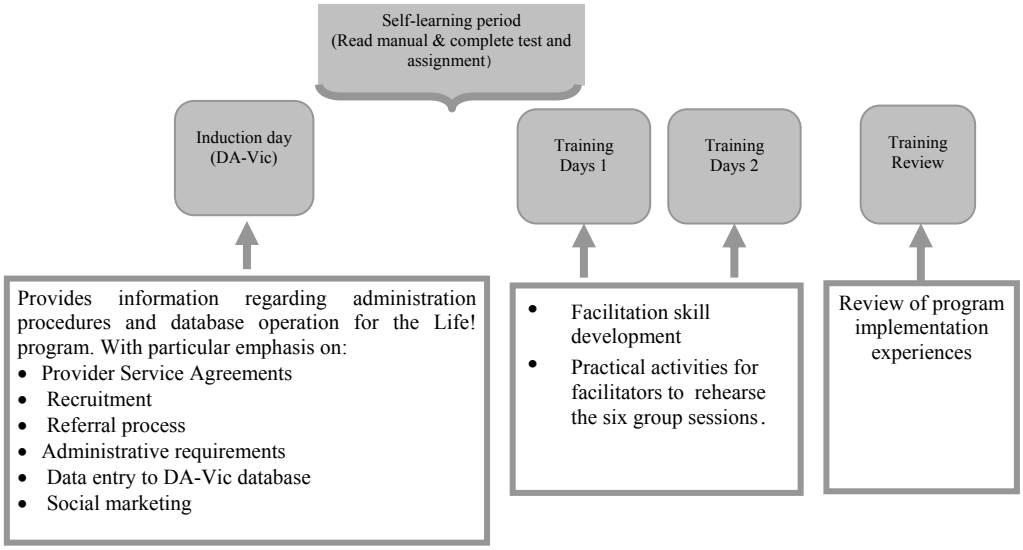

Figure 1. Process of Life! facilitator training

Currently, there are 127 Life! providers and a total of 183 facilitators. The program was rolled out statewide within the first two years and the organisational requirements to manage the program have significantly increased to include coordinated social marketing, central referral, GP engagement, accreditation and program delivery, training of facilitators, data management and evaluation. An advisory governance board meets quarterly to provide strategic direction. Wide involvement has ensured that the development of the program has been guided by senior bureaucrats, leading academics, and health professionals in diabetes prevention.

Payment to providers is contingent on submission of data at critical points in the program. Facilitators receive an operational manual, a facilitator manual, and password access to the Life! website for data entry and on-line resources.

The intervention

The Life! program aims to reduce the risk of developing type 2 diabetes by encouraging participants to set behavioural goals and make lifestyle changes based on the adoption of an active lifestyle and healthy diet. It has five program goals based on the Finnish Diabetes Prevention Study[4]:

1. No more than 30% of energy consumed from fat;
2. No more than 10% of energy from saturated fat;
3. At least 15g fibre / 1000kcal;
4. At least 30 minutes / day of moderate intensity physical exercise;
5. At least 5% weight reduction.

The Life! program is a six-session group-based intervention that consists of: five sessions of 90 minutes and one of 120 minutes (session 1). The groups are conducted within various community and private provider settings. The first five sessions are completed fortnightly, and the sixth session is conducted eight months from the first session. Participant manuals are provided and each person attending the group sessions is encouraged to record information from their GP as well as outcomes of session measures and homework tasks in their personal manual. Participant manuals cover the content of each session, extra reading material and tasks to do between sessions (e.g., physical activity and diet diaries).

Recruitment

Eligibility to take part in the Life! group program is assessed using the AUSDRISK tool and all participants in the program must have diabetes excluded before taking part. Typically, diabetes is excluded by the general practitioner (family physician) who completes a referral form that includes important information such as blood pressure, cholesterol, fasting blood glucose (FBG) and OGTT (if FBG is between 5.5 and 6.9mMol/l).

A central referral was set up to accept calls from any person in Victoria for diabetes prevention information, validate their risk score, and support the process of enrolment into the Life! program (see Figure 2).

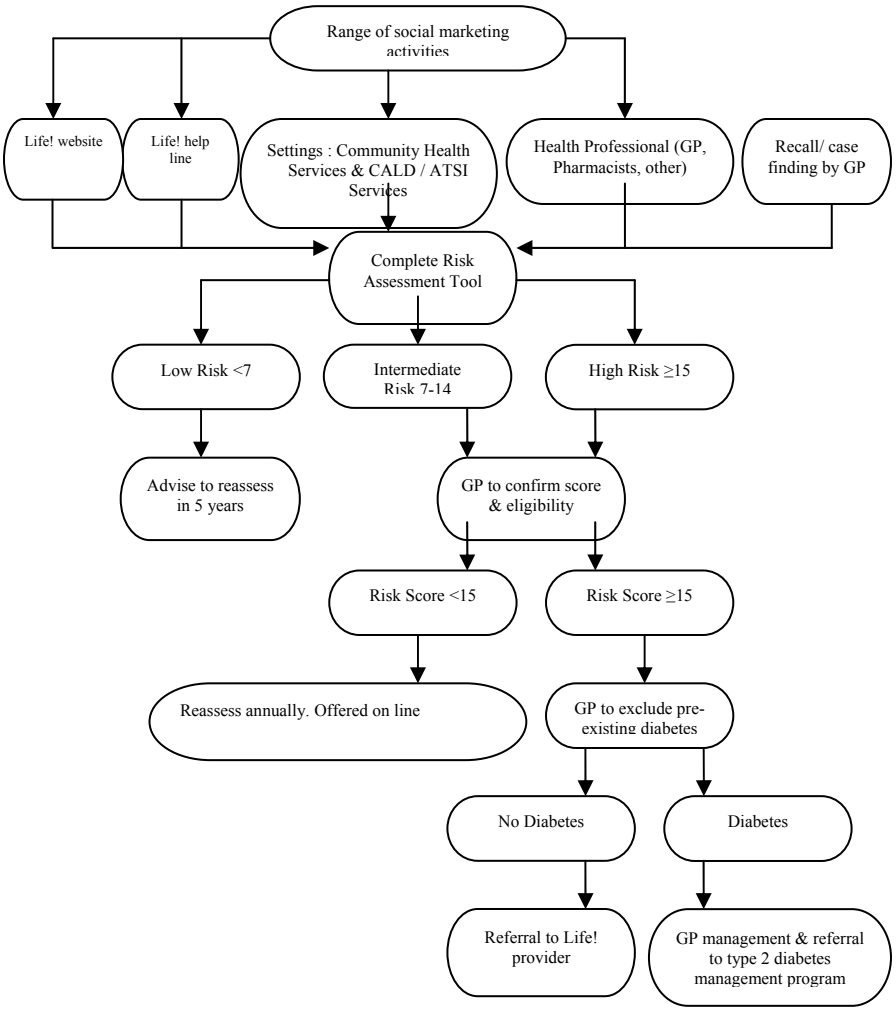

Figure 2. Pathways to referral into the Life! program.

The recruitment strategy comprises three main referral pathways - direct recruitment methods, health professional engagement, and social marketing.

Direct recruitment methods

Direct recruitment, which accounts for nearly half of the participants, occurs when participants are directly referred to a Life! facilitator through: a local referral pathway between facilitator and health professional; central referral at a provider organisation or

General Practitioner network; local social marketing; and face to face recruitment by the facilitator.

Referrals by Health Professionals

DA-Vic developed a General Practitioner and Health Professional (GP & HP) engagement strategy involving doctors through their Division of General Practice. GP engagement is particularly difficult due to their already demanding workload but it is important for GPs to become advocates for the program with their patients.

During the first year of the program, GP Divisions were funded to raise local awareness of the Life! program and to directly engage with general practices to promote referrals into the Life! program. Activities included direct letters and articles in professional magazines, academic detailing, educational events and newsletters. In the second year the grants were changed to include a component specifically to fund case finding. Patients who are identified as being at high risk through searching the practice database are recalled into the practice, informed about the program and referred. Local referral networks are being increasingly established.

Consumer led recruitment

The social marketing recruitment strategy of the Life! program specifically raises awareness of the seriousness of diabetes, supporting people to know their risk and then take action and support the identification of people with diabetes who are not diagnosed.

The reach of the social marketing is statewide and over 17,000 people have made contact with the Life! Program. This approach has employed a comprehensive "call to action" campaign through advertising (local and State media campaigns), public relations and promotional activities to promote the Life! program. Referrals through this recruitment method are based on consumer led recruitment whereby a potential participant responds to the advertising and contacts the Life! program by: enquiring online, completing a newspaper coupon, or phoning. 13RISK (137475), a free phone number advertised on all copies of AUSDRISK. It is staffed 24 hours a day to receive calls about the risk of diabetes and to encourage those at high risk to join the intervention (see website references). It accounts for about one fifth of the participants. About one in 20 who complete an expression of interest become participants in the group program.

Development of the group program for Aboriginal and Torres Strait Islanders, and for culturally and linguistically diverse groups is underway.

Outcomes

To ensure that outcomes are tracked, fidelity of the program maintained, and improvements made to delivery, a centralised web-based database was developed to capture relevant data of program participants. It is probably the most sophisticated quality improvement system for diabetes prevention in the world. Data are collected at sessions 1, 5 and 6. Demographic, anthropometric, biochemical data, depression and program goals are measured along with group size, participant evaluation and attendance rates. Payments are linked to provision of data.

The Life! program has had a considerable impact on raising community awareness of diabetes prevention in Victoria. Since 2007, over 18,000 people have been sent detailed information on how they can prevent diabetes.

Around 3000 people at high risk have been referred to the intervention; a total of 288 groups have commenced and 107 groups have completed the course. Participants have reported high satisfaction (average 9 out of 10) and enjoyment levels (average 8 .7 out of 10).

Early analysis of the data suggests that the course has been effective in encouraging participants to adopt a healthier lifestyle. The data also indicates that course performance is improving as the facilitators gain experience and learn from the quality assurance program.

Quality Assurance and Continuous Quality Improvement

The Quality Assurance (QA) of the Life! program is based on measurement for improvement. In a scaled-up program, it is probably the best test of fidelity. An integral component of the QA process for the Life! program is the implementation of an annual review day for program facilitators. All facilitators are required to attend this day to maintain their certification. The day is designed to provide professional development and peer to peer support for Life! facilitators to learn from each other in order to improve their practice. The QA process follows these steps:

1. *Measure:* Variation in performance between facilitators is measured and facilitators receive a report of their performance compared with aggregated de-identified outcomes from all other facilitators. Performance in reduction in weight and waist measurements, number of groups held and the numbers of participants, and participant satisfaction is provided in graphical form in which each facilitator can identify their own performance from their unique number. These reports show considerable variance between facilitators.
2. *Discuss*: Reports and variance are discussed, with specific attention to the issues of: What explains the variance? What are the more successful facilitators doing? What is best practice? Feedback on facilitator and the overall program success is discussed and compared with the results from other diabetes prevention programs and recent published literature. Topics related to effective strategies for running groups and program administration are also discussed so that facilitators can report enablers and barriers to program improvement.
3. *Act/Change*: Facilitators change their usual practice by implementing what they have learnt at the review day.

***Prevent Diabetes Live Life Well* program in New South Wales**

The key challenges for diabetes prevention programs are to translate empirical evidence into routine community settings; explore the intensity of intervention required to effect change provide the on-going support required to sustain change, and create the most feasible and effective mode of delivering the intervention across different settings.

The Sydney Diabetes Prevention Program (SDPP) was funded by the NSW Department of Health in 2008. The aims of the SDPP, called the *Prevent Diabetes Live Life Well* program ('the Program') are to develop, implement and evaluate an evidence-based lifestyle change program to prevent or delay the onset of type 2 diabetes in at-risk people aged 50-65 years. The Program is being run in selected general practices in three Divisions of General Practice in a defined geographical area of Sydney and its outskirts. The area covers a mix of rural, semi-rural and metropolitan regions. It is expected that up to 1500 people will enter the Program and be followed up during a 12 month period to determine its effect on diabetes risk markers and also to enable an economic evaluation to be conducted.

The Program in detail

Eligible participants at risk of developing type 2 diabetes identified with the AUSDRISK tool are recruited via their general practitioner (GP).

To screen out people who are likely to have diabetes we use a similar process to the Life! Program but have also included capillary blood testing and the use of HbA1c as a way of reducing participant burden.

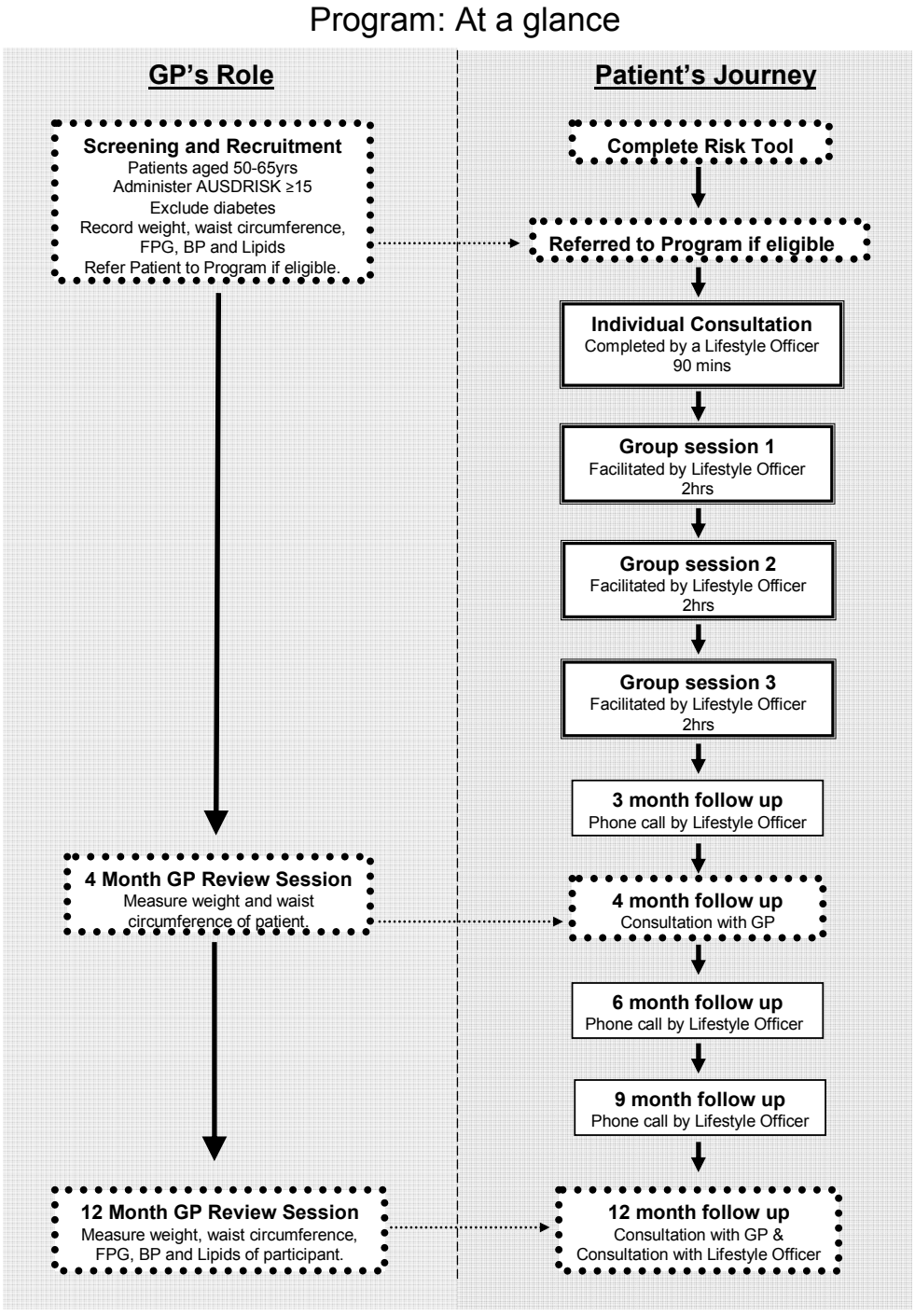

Figure 3. Program at a glance

If deemed eligible by their GP, participants are offered an initial 90 minute individual consultation with a Lifestyle Officer employed through the Divisions. The individual session is followed by three x 2 hour sessions facilitated by Lifestyle Officers. Those interested in reducing their type 2 diabetes risk but reluctant to attend group sessions are offered an individual module which consists of 3 telephone health coaching sessions provided by experienced health coaches.

To highlight the differences from the Life! program, Life! has six group sessions but no individual session preceding them. SDPP has three sessions and follow-up by telephone.

Follow-up support is provided through telephone contact made at 3, 6 and 9 months. Participants are encouraged to re-visit their GP at 4 months and again at 12 months. Participants are also encouraged and supported to continue their lifestyle changes by being advised of 'recommended' on-going community-based physical activity and/or healthy eating services and facilities.

In addition to the mainstream component of the Program, there are specific Arabic and Chinese (Mandarin) streams targeting at least 100 people from each group in the Central Sydney GP Network Division. All materials have been translated and the Program is delivered in Arabic and Mandarin.

The main intervention goals are derived from the Finnish Diabetes Prevention Study[4]and use the same as the Life! program except for regular physical activity of at least 210 mins per week (both aerobic and 2-3 sessions of strength training).

Lifestyle Officers recruited to deliver this program are either: doctors, nurses, dieticians, exercise physiologists, diabetes educators or psychologists. They undergo a five-day training course in health coaching, group program delivery and evaluation (standardised data collection).

Preliminary findings

The SDPP intervention and evaluation have been designed and are being delivered in such a way that reflect best practice principles in general practice[5] and in conducting translational research[6,7] identified by experts in these fields. Overall the Program is being well received and accepted by GPs and participants alike. The feedback from the Program participants has been overwhelmingly positive. It appears to be feasible to screen and recruit participants through general practices and deliver a lifestyle modification program via Lifestyle Officers employed through a Division.

The SDPP remains well placed to contribute to the evidence of delivering lifestyle modification programs in 'real-world' settings to reduce the risk of type 2 diabetes in high risk populations.

Program implementation and retention

As of March 2010 approximately 3600 people had been screened. Of those, approximately 42% where identified as being at risk (AUSDRISK >=15) and 1001 participants have entered the Program. The retention rate is extremely high (92%).

Concluding remarks on developing large-scale programs

Translational research is complex and challenging due to a number of interacting factors which include funding levels, organisational capacity, the characteristics of the screening, recruitment and intervention, time and resource constraints of practitioners and varying practitioner organisational systems. Compromises have to be made between the ideal of the randomised controlled trial and what is possible in the real world.

In Australia, substantial gains have been made. The programs that are underway show early promise for reducing the risk of progression to diabetes. It is feasible to screen and recruit participants through primary care. However, the screening and recruitment rates have been lower than originally predicted. This may be due to general practice not being systematically orientated to proactively focus on prevention programs.

In NSW and Victoria, we use a number of different recruitment strategies including organisational support, remuneration, workforce development and incentives for GPs to participate. These include:

- Payment to GPs to support recruitment and referral.
- Letters to patients with AUSDRISK and a request to visit their GP, with a follow up phone call.
- Providing program staff to undertake opportunistic screening in GP waiting rooms.
- Providing practices with additional incentives to screen and recruit (subsidising practice staff including receptionists and practice nurses).
- Local level promotion (newspapers, radio and TV).

More intensive strategies have led to increased referral rates, but many people at risk of diabetes do not opt to participate in the program. More promotion of the benefits of the program is needed. Participants usually join so that they 'feel better' or 'lose a little weight' rather than for diabetes prevention itself. These motives need to be reflected in how the program is marketed.

The Federal program is under review because of the low uptake of lifestyle modification programs. Specific problems include:

- The fee available for providers running lifestyle modification programs is probably below the market cost. It does not cover the initial visit in the New South Wales program.
- Refusal to fund measurement of lipid levels and blood pressure at 3 and 12 months with feedback of the results to the participants. This federal decision has adversely impacted on the Life! program.
- Challenges associated with GP engagement.

Some of the key strengths of the Life! program have been the training program for facilitators, the accreditation and certification policies, and the ongoing quality assurance, all of which ensure that the program is delivered at a defined standard. Program governance involves senior policymakers, health professionals and academics on the advisory board. Working closely with the funding agency has been a key strength of the Life! program, as they have supported changes where necessary. The New South Wales Program has similar strengths in its training of facilitators, good use of individual assessment sessions and group sessions delivered by specially trained facilitators.

A statewide diabetes prevention program poses challenges in scaling up including rapid needs for increased organisational capacity, finding the right balance between adopting research findings and real world resources. Compared with the GGT DPP, due to resource constraints, Life! does not have:

- An individual session prior to joining the group when the program and the benefits to the participant are explained. In New South Wales it has been shown again that an initial individual consultation has resulted in higher than expected attendance and adherence to the group based sessions.
- Individual feedback on diet and physical activity diaries.
- Feedback to participants on their blood pressure and cholesterol results at 3 and 12 months. Reducing CVD risk is perhaps more important than reducing the risk of diabetes. Due to Federal government policies, the opportunity to systematically reduce cardiovascular risks which accounts for most of the morbidity and mortality has been lost.
- The funding model does not include the cost of recruiting participants especially face-to-face.

Other wisdom gained:

- A pilot and incremental roll out would have been preferable
- Early use of specific targeted social marketing is required to raise awareness of seriousness of diabetes, risk assessment and prevention.
- In the Life! program, low recruitment resulted in an excess of facilitators and their opportunity to practise delivering the program was diluted. It takes time for facilitators to climb the learning curve. Each facilitator needs to deliver four to six full group programs a year to maintain their skills.
- The time for a person at high risk to consult their GP and have all the tests can take up to three months. The need for multiple visits and cost implications are barriers to doctors referring patients to the Life! program. A pathology service has been implemented by DA-Vic to enable a faster progression for participants through this process. In New South Wales it has been shown that screening potential participants for diabetes using HbA1c is preferable as it reduces participant burden compared with screening by oral glucose tolerance testing.

In Australia, much has been learned about scaling up diabetes prevention programs from small implementation trials but much still remains to be improved especially engagement of general practice. That said, mechanisms exist at policy level to review the current programs, to learn as we go both from our own and experience of others, and to implement the latest knowledge at State and National levels.

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