

Submission to the Joint Select Committee on Preventative Health Care

We can prevent type 2 diabetes

– Why don't we?

This submission addresses the following in the Joint Select Committee on Preventative Health Care terms of reference:

(2) The challenges to, and benefits of, the provision of an integrated and collaborative preventative health care model which focuses on the prevention and early detection of, and intervention for, chronic disease.



Executive summary

This submission focuses on type 2 diabetes prevention and the importance of access to evidence based lifestyle modification programs. Although this submission relates to diabetes, the risk factors associated with diabetes are intrinsically linked to cardiovascular disease, stroke, and kidney disease, and therefore the benefits of any program are not one-dimensional.

There is no question about the escalating incidence of type 2 diabetes, its seriousness, impact and the economic burden of the disease. Diabetes is Australia's fastest growing chronic disease, with best estimates indicating that around 1.7 million Australians are currently living with the condition. In Tasmania there are over 23,000 diagnosed with type 2 diabetes, approximately 10,000 living with the disease but undiagnosed, and 45,000 at high risk. Type 2 diabetes is a serious and complex metabolic condition which can lead to a range of complications if not well managed. Diabetes accounts for an estimated one third of all preventable hospital admissions in Australia and currently the total cost to the nation is estimated at \$14.6 billion per year, and if trends continue, this is set to increase to \$30 billion by 2025.

Identifying those people at high risk of developing type 2 diabetes and ensuring access to a range of structured lifestyle intervention programs is imperative. It has been shown that access to appropriate intervention programs has resulted in a 58% reduction in the risk of developing the disease. In order to have the biggest impact and to meet individual needs there needs to be a number of different interventions available. Therefore, multiple intervention pathways for risk reduction is required as opposed to a 'one size fits all'.

Through extending the telephone based COACH Program® and introducing a model based on the Victorian Life! Program, Tasmania will be in a position to provide comprehensive evidence based programs to seriously address the escalating incidence of type 2 diabetes and associated chronic diseases.

Why diabetes prevention is so important

Diabetes is Australia's fastest growing chronic disease, with best estimates indicating that around 1.7 million Australians are currently living with diabetes¹. Type 2 diabetes is predicted to become the number one burden of disease in Australia in the next five years².

Translated to the Tasmanian setting there are 23,147 diagnosed with type 2 diabetes with an average of 129 Tasmanians diagnosed with type 2 diabetes each month³.

Type 2 diabetes is the most common form of diabetes, representing about 85% of all cases in Australia and Tasmania is no exception. It is a chronic disease characterised by high blood glucose levels caused by a reduced production of insulin or the body's inability to properly use the insulin it produces. Type 2 diabetes has a strong familial link which is unmasked by lifestyle factors including obesity and lack of exercise.

Seriousness and Impact

Type 2 diabetes is a serious and complex metabolic condition that can lead to a range of complications if not well managed. Early diagnosis, optimal treatment and effective ongoing monitoring and self-management reduce the risk of diabetes-related complications, which include:

- Heart attacks and strokes: up to four times more likely in people with diabetes
- Blindness: diabetes is the leading cause of preventable blindness in adults
- Kidney failure: three times more common in people with diabetes
- Amputations: 15 times more common in people with diabetes.
- Depression, anxiety and distress: occurring in over 30% of all people with diabetes.²

Diabetes accounts for an estimated one-third of all preventable hospital admissions in Australia with longer than average bed stays. Diabetes can reduce a person's life expectancy by up to 6 years.

According to the 2013 Tasmanian Public Health report for the period 2010/11 there were 1,357 preventable hospital admissions for diabetes. This equates to 12% of the total and is only second to COPD at 14%⁴.

While over recent decades prevalence rates of severe complications in people with diabetes have been decreasing in parallel with improved management and possibly earlier diabetes diagnosis, the rates of heart attack, stroke, amputation and end-stage kidney failure in people with diabetes remain well above those occurring in the general population.

The seriousness of diabetes is not in question and yet most Australians are less concerned about diabetes than most other conditions and underestimate their risk of developing it.

The economic and personal burden of diabetes

The economic and social cost of diabetes is increasing dramatically. The most recent estimates put the total cost to the nation at \$14.6 billion per year⁵. This includes healthcare costs, lost productivity, personal and family costs. If trends continue, the diabetes cost to the Australian government alone will be \$30 billion by 2025.

Diabetes is associated with a number of serious and expensive co-morbidities including obstructive sleep apnoea, fatty liver leading to cirrhosis, and erectile dysfunction. Australian surveys show that 22-35% of adults with diabetes experience moderate to severe depressive symptoms, while 14-19% experience moderate to severe anxiety symptoms⁶. These all add to the socio-economic cost of diabetes.

The growing personal, national, social and economic burden of diabetes underscores the importance of interventions to prevent diabetes and to delay or prevent its complications. Consequently diabetes prevention should be an essential component of future public health strategies for Australia.

We must be focussed on both preventing diabetes and keeping those Tasmanians with diabetes living well with their disease. Based on inpatient costs of \$2,248pp⁷ (microvascular complications only), if the 1,357 people with preventable diabetes hospital admissions remained in the community the cost saving would have equated to approximately \$3M.

Diabetes risk and its implications

A number of factors influence the risk of developing type 2 diabetes. These include:

- Age (being older than 40 year or older than 25 for some minority ethnic groups)
- Family history of type 2 diabetes
- A history of gestational diabetes
- Ethnicity
- Overweight and obesity
- Low physical activity levels

Modifiable risk factors, particularly being overweight/obese and physically inactive, are driving the development of type 2 diabetes in more than two-thirds of all cases.

Pre-diabetes is a condition in which blood glucose levels are higher than normal, but not high enough to be diagnosed as type 2 diabetes. The incidence of diabetes is 10-20 times greater in those with 'pre-diabetes' compared with people with normal glucose tolerance.

Of particular concern is that in addition to those with diagnosed type 2 diabetes, an estimated 45,000 Tasmanians have pre-diabetes. These Tasmanians are consequently at high risk of developing type 2 diabetes⁸. Without intervention approximately one in three of these people will go on to develop type 2 diabetes within 10 years. Of all the people who develop type 2 diabetes, approximately 50% come from the high risk population and the remaining 50% from the general (low to intermediate risk population). Interventions in people with pre-diabetes have been demonstrated to substantially reduce their risk of progression to diabetes.

We can prevent type 2 diabetes – *it is proven*

We know that type 2 diabetes can be prevented or delayed; up to 58% of type 2 diabetes developing from the pre-diabetes population can be prevented through structured lifestyle intervention^{9, 10}. One of the important factors to note is that lifestyle behaviour changes for diabetes prevention are similar to those for cardiovascular disease and other chronic disease prevention and therefore the benefits are not one dimensional. If we want to reduce the burden associated with chronic disease, including type 2 diabetes and cardiovascular disease, we need to implement high risk prevention programs operating in conjunction with all of population initiatives such as reducing the marketing and promotion of unhealthy foods, improved food labelling and promotion of active transport.

Numerous international randomised controlled trials (RCT's) have demonstrated that structured lifestyle behaviour programs can prevent the progression from pre-diabetes to type 2 diabetes. Furthermore, cost effectiveness studies and community based evaluations conclude that these interventions are able to be implemented and are both effective and cost effective^{11, 12}. Translational studies including the Greater Green Triangle Diabetes Prevention Project¹³, Sydney Diabetes Prevention Program (SDPP)¹⁴, and the large-scale implementation of the Victorian *Life!* program^{15, 16} have built a strong case that the RCT evidence can be translated into community-based programs. These programs have included face-to-face group interventions and individual telephone interventions, both with 5–6 structured sessions and trained facilitators.

Despite there being strong evidence to implement proven type 2 diabetes prevention programs, diabetes prevention for high-risk groups has not been prioritised in the current national health policy agenda in Australia; there are several consequences of not including

this as a priority, including substantial personal, healthcare and societal costs, particularly given the long-term consequences of diabetes and its escalating incidence.

High risk population prevention

A comprehensive approach to type 2 diabetes prevention requires targeting people at high risk of developing diabetes and, as previously mentioned complemented by a whole of community approach including policy, structural and environmental factors to reduce the proportion of people shifting from low risk to high risk.

Over the last few years there have been a number of Commonwealth initiatives targeting the high risk population. The Council of Australian Governments (COAG) in 2007 agreed to establish a national approach to prevention of type 2 diabetes in high risk individuals and the Australian Government introduced the following elements:

- Introducing the questionnaire-based Australian Type 2 Diabetes Risk Assessment tool (AUSDRISK)
- Establishing national standards for evidence based, intensive lifestyle behaviour change (lifestyle modification programs)
- Introducing a Medicare Item for type 2 diabetes risk assessment in 40-49 year age
- Funding intensive lifestyle behaviour change interventions (lifestyle modification programs) for the 40-49 age group through AGPN.

Some of these initiatives were successful, others not so. The funding of the AUSDRISK tool to identify an individual's risk of developing type 2 diabetes has made screening to identify individual at high risk feasible and effective at a community level. Some of the challenges associated with implementation of the 40-49 year program, included single point of access through GP referral, limited financial incentives, onerous reporting, limited age range and limited social marketing, so consumer demand for the scheme was low. As a consequence funding was discontinued on 1 November 2011.

Screening for high risk individuals should take place in a range of settings – primary care, workplaces, pharmacies, to name just a few. Those identified at high risk should then be individually assessed and triaged according to individual need. Figure 1 details the pathway into a type 2 diabetes prevention program.

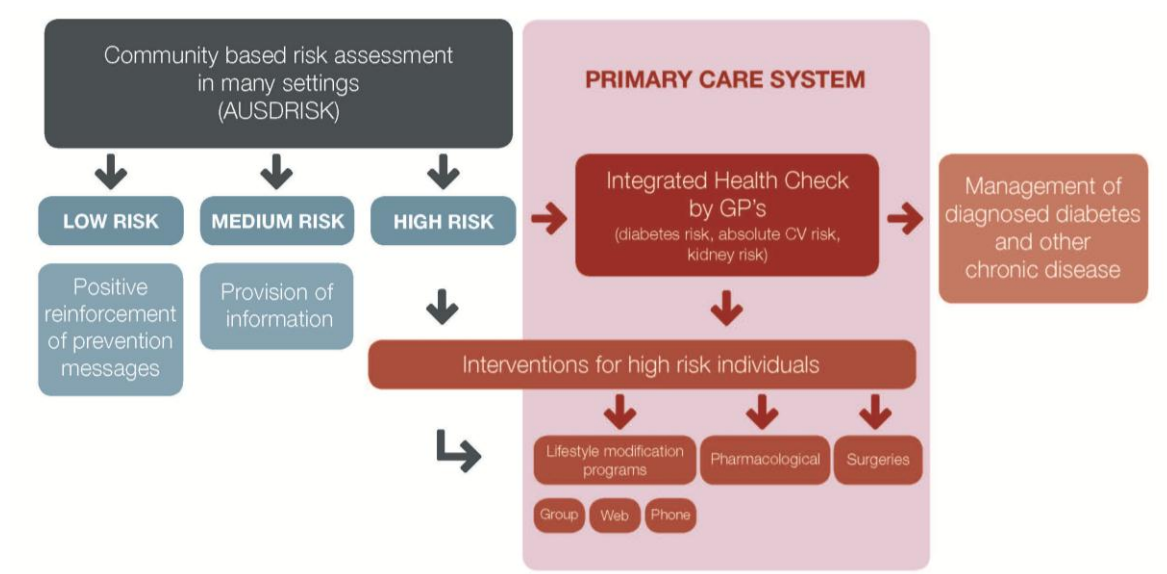


Figure 1

Pathway into a diabetes prevention program

A similar approach has been previously detailed in a submission to the Tasmanian Minister for Health in 2014 by the National Stroke Foundation, Heart Foundation (Tasmania) and Diabetes Tasmania titled, “An integrated primary care framework – establishing an integrated strategy to detect, manage and reduce risk for those at increased risk of developing heart, stroke, kidney disease and diabetes in Tasmania”.

One of the issues impacting on how a person identified at high risk is assisted to lower their level of risk is the availability and access to evidence based risk factor reduction and lifestyle modification programs. In Tasmania access to these types of programs is limited.

In order to have the biggest impact and to meet individual needs there needs to be a number of different interventions available. Therefore, multiple intervention pathways for prevention is required as opposed to a one size fits all.

- Lifestyle (face to face groups, telephone, webinars, commercial programs);
- Medications (metformin – it should be noted that The COACH Program® also includes a strong medication focus as well as lifestyle modification);
- Surgery (for those with severe obesity).

The following details two intervention pathways.

The COACH Program®

One program available is The COACH Program®, funded by the Department of Health and Human Services and delivered by Diabetes Tasmania. This is a telephone based health coaching program and is supported by several published RCTs¹⁷⁻¹⁹ which show that The COACH Program® is highly effective in reducing risk factors in patients with cardiovascular disease^{20, 21}. This has been now been extended to other chronic disease including type 2 diabetes. In Tasmania, the program focuses on reducing the risk factor levels for those diagnosed with type 2 diabetes, however due to capacity only small numbers of people at high risk are able to enter the program. With additional funding, the program could be expanded to include greater numbers of Tasmanians identified at high risk of developing type 2 diabetes.

In addition, a health economic analysis by Professor Andrew Palmer at the Menzies Centre for Medical Research has shown that participation in the program:

- increases life-expectancy
- reduces time to complications
- leads to a saving in total direct medical costs of \$2902 per patients versus usual care along over a patients' lifetime.²³

A further health economic analysis of the program, led by Professor Palmer, is currently underway.

The most recent published work of The COACH Program®, in the Medical Journal of Australia (16 Feb 2015), again demonstrates the significant improvement in risk factors associated with both cardiovascular disease and type 2 diabetes from the program run in Queensland and funded by Queensland Health.²²

Complementing The COACH Program® is another lifestyle modification program which has had great success in reducing risk factors associated with the development of type 2 diabetes - the Victorian Life! Program.

The Victorian Experience – The Life! Program – *it is possible*

In Australia, Victoria is the quite advanced in regard to diabetes prevention programs, with the combination of a statewide, high-risk population, diabetes prevention program (*Life!* program) combined with an entire population and systems approach across 12 local government areas. The Life! Program is funded by the Victorian Government with Diabetes Australia Victoria as the lead agency and fund holder. It is an evidence based program, specifically targeted at those identified at high risk of developing type 2 diabetes.

The Life! Program has two goals:

- To arrest the growth of type 2 diabetes
- To contribute to earlier diagnosis of type 2 diabetes in those who have undiagnosed type 2 diabetes.

Key actions include:

- Identifying those at high risk of developing type 2 diabetes and those who already have type 2 diabetes through systematic risk assessment
- Providing community-based lifestyle behaviour change programs for those enrolled in the Life! Program to reduce their risk of developing type 2 diabetes
- Increasing community awareness of the risk factors, seriousness and consequences of type 2 diabetes and the resources available to support healthy and active lifestyles.

The Life! Program is the largest diabetes prevention program ever undertaken in Australia and is the:

“The largest systematic program in the world!”

Dr David Williamson, CDC Atlanta

In three years to 12 December 2011 the program has achieved.²⁴:

- A significant reduction in the modifiable risk factors that translates to 36% reduction of risk
- Generated over 27,700 referrals to the program
- Assigned more than 20,500 people at high risk to prevention courses
- Conducted successful social marketing and communications activities to help people understand the seriousness and risk of type 2 diabetes and create urgency and a strong call to action for people to participate in a prevention course
- Trained and certified 375 health professionals in type 2 diabetes prevention through a two day training program and follow up
- Accredited and contracted 137 health services and providers, both public and private to be in the business of prevention and provide prevention courses

Refer to Appendix A for more detailed information about the Life! Program.

Key considerations for implementation of the Life! Program in Tasmania

- Implementation would be most successfully achieved by linking directly with the Victorian Program.
- A fulltime position based in Tasmania would oversee relationship management, facilitator recruitment and liaison with GP's, the new Primary Health Network, and other key stakeholders. This approach would allow greater support for the program and for a shorter lead time for implementation.
- Although a licence fee seems unlikely from the Victorian Government, acknowledgment of Vic Health's role would need to be documented and reassurance given that they were not subsidising the Tasmanian program.
- The opportunity to share resources, training and other program components with Victoria are key benefits to support program implementation and success.
- Recognition that multiple referral pathways are essential if the program is to be a success.
- Integrated social marketing is a key component of the program and the opportunity to link with Victoria is again a key benefit.
- Recognising the importance of linking to existing services and programs, both public and private.
- The need for a diverse prevention workforce.
- The requirement for extensive and continued stakeholder engagement and partnerships.

The way forward

If Tasmania is to have the healthiest population by 2025, we cannot afford not to invest in programs that we know will make a difference to the health and wellbeing of Tasmanians. With 45,000 Tasmanians at high risk of developing type 2 diabetes, being a significantly disadvantaged community, an ageing population and over represented in in Australian preventable health data, we must act now.

Tasmania has an opportunity to implement an evidence based high risk intervention program such as the Life! Program and build on its learnings and to expand the capacity of The COACH Program®. This would provide two important intervention pathways. Both of these programs have demonstrated a long term reduction in the risk factors associated with diabetes and cardiovascular disease^{17-22, 25}, capacity to reach rural and remote areas²² and most importantly reduce the burden of disease for our community.

We must act now.

Appendix A: About the Life! Program in Victoria

Centring on health psychology theories which focus on behaviour change, including the self-regulation theory and Health Action Process Approach (HAPA) model (Schwarzer & Fuch 1995) and the use of SMART goals (Absetz et al. 2009), participants are encouraged to work towards adopting a healthy diet and active lifestyle to reduce their risk of developing type 2 diabetes.

The intervention consists of six structured group sessions of 1.5–2 hours in duration in groups of 6–15 participants.

The first five sessions are conducted fortnightly, with the sixth and final session held six months after session five. As a means to reduce their risk of developing type 2 diabetes, participants are supported to achieve five program goals:

- No more than 30 per cent of energy from fat
- No more than 10 per cent of energy from saturated fat
- At least 15g/1000kcal fibre
- At least 30 minutes of moderate physical activity each day
- At least 5 per cent weight reduction

The suite of Life! Program interventions comprises the group based intervention (Life! Course), Life! Telephone Health Coaching (THC) and the Aboriginal Victorians Life! Program.

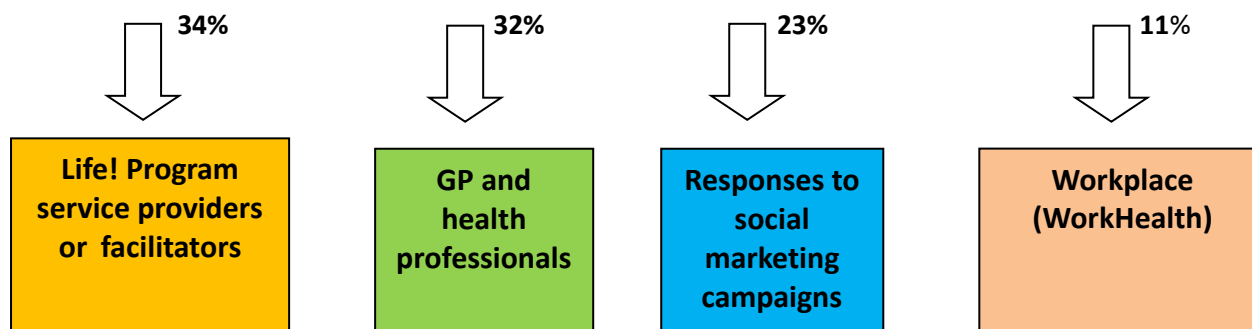
The Program is delivered through a network of Life! accredited provider organisations and trained Life! facilitators.

Facilitator training consists of three parts:

- Self-learning period
- Face to face two day workshop
- Review Day for professional development

Program recruitment

Referral pathways for participant entry into the Life! Program



A key factor in the success of the Life! Program has been the multiple referral channels, allowing both health professional/other referral and self-referral.

Social marketing

The Life! social marketing strategy is designed to create awareness of the seriousness and risk of type 2 diabetes and to promote systematic risk assessment and identification of high risk individuals in the target population. Calls-to-action include:


- 13 RISK - a 24-hour telephone help line;
- The Life! program website
- Print coupons in publications which could be completed and returned to order a prevention kit.

This approach is similar to the successful approach used by Quit Victoria where social marketing is used in conjunction with personalised (call-back) support to assist people to quit smoking (Scollo & Winstanley 2008).

Marketing activities have been mass media campaigns, social marketing and targeted communication activities.




This has been critical to the success of the program with nearly 25% of referrals generated in response to social marketing.

Are you at risk of type 2 diabetes?



Don't be the type to leave it too late

Discuss your risk with your doctor or call 13 7475 today

free type 2 diabetes risk assessment kit

For your free risk assessment and to see if you qualify for an effective new prevention program call **13 RISK** or return this coupon today.

Name: _____

Your age: ☐ under 40 ☐ 40-49 ☐ over 50 Phone: _____

Address: _____

City: _____ Postcode:


Do you have diabetes?: ☐ Yes ☐ No

Do you have a history of heart disease?: ☐ Yes ☐ No

Did you have diabetes during pregnancy?: ☐ Yes ☐ No

Mail to:
Diabetes Australia - Vic
570 Elizabeth Street
MELBOURNE VIC 3000 www.diabetesrisk.org.au

Are you risking type 2 diabetes?



Don't be the type to leave it too late

Call 13 7475

You are at increased risk of type 2 diabetes if:
you are over 50 and your waist measures more than


| | | |
|--|--|--|
| | Men 102 cm* 40.2 inches | Women 88 cm** 34.6 inches |
|--|--|--|

* 90 cm or ** 80 cm for those of Asian or Aboriginal or Torres Strait Islander descent

Amputation, blindness and heart attack are just some of the risks you may face with type 2 diabetes. But it can be prevented.

An effective new type 2 diabetes prevention program is now available in your local area and is free for most people. With group support, our health experts offer you a tailored lifestyle program that has proven and sustainable results.

For your free risk assessment and to see if you qualify for the new prevention program call 13 RISK or return this coupon today.



free type 2 diabetes risk assessment kit

Name: _____

Your age: ☐ under 40 ☐ 40-49 ☐ over 50



Phone: _____

Address: _____

City: _____

Postcode:

Mail to: Diabetes Australia - Vic,
570 Elizabeth Street, MELBOURNE VIC 3000
goforyourlife.vic.gov.au/life

References

1. Diabetes: The Silent Pandemic and its Impact on Australia (2012), Baker IDI Heart & Diabetes Institute. Australia Institute of Health and Welfare (2010) Australia's Health 2010. Australia's Health Series no 12. Cat no. AUS 122. Canberra: AIHW.
2. National Diabetes Services Scheme, accessed 2 February 2015.
3. State of Public Health (2013), Population Health, Department of Health and Human Services, Tasmania.
4. Lee, CM, Colagiuri R, Magliano, DJ, Cameron AJ, Shaw, J Zimmet P, Colagiuri S. (2013) The cost of diabetes in Adults in Australia. *Diabetes Res Clin Pract.* 99 (3):385-90.
5. Speight J, Browne JL, Holmes-Truscott E, Hendrieckx C, Pouwer F, on behalf of the Diabetes MILES – Australia reference group (2011) Diabetes MILES – Australia 2011 Survey Report. Diabetes Australia: Canberra.
6. Colagiuri et al., (2003) cited in Diabetes: The Silent Pandemic and its Impact on Australia (2012), Baker IDI Heart & Diabetes Institute.
7. Dunstan D, Zimmet P, Welborn T, Sicree R, Armstrong T, Atkins R, Cameron A, Shaw J, Chadban S. (2001) Diabetes and associated disorders in Australia – 2000: the accelerating epidemic. The Australian Diabetes, Obesity and Lifestyle Study (AusDiab). Melbourne: International Diabetes Institute. <http://www.diabetes.com.au/pdf/AusDiab_Report.pdf>.
8. Uusitupa M, Lindi V, Louheranta A, et al; Finnish Diabetes Prevention Study Group. Long-term improvement in insulin sensitivity by changing lifestyles of people with impaired glucose tolerance: 4-year results from the Finnish Diabetes Prevention Study. *Diabetes* 2003; 52: 2532-2538.
9. Knowler WC, Barret-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 2002; 346: 393-403.
10. Vos T, Carter R, Barendregt J, et al; ACE-Prevention Team. Assessing Cost-Effectiveness in Prevention (ACE-Prevention): final report. Brisbane: University of Queensland; Melbourne: Deakin University, 2012. http://www.sph.uq.edu.au/docs/BODCE/ACE-P/ACE-Prevention_final_report.pdf (accessed Dec 2014).
11. Palmer AJ, Tucker DM. Cost and clinical implications of diabetes prevention in an Australian setting: a long-term modelling analysis. *Prim Care Diabetes* 2012; 6: 109-121.
12. Laatikainen T, Dunbar JA, Chapman A, et al. Prevention of type 2 diabetes by lifestyle intervention in an Australian primary health care setting: Greater Green Triangle (GGT) Diabetes Prevention Project. *BMC Public Health* 2007; 7: 249.
13. Colagiuri S, Vita P, Cardona-Morrell M, et al. The Sydney Diabetes Prevention Program: a community-based translational study. *BMC Public Health* 2010; 10: 328.
14. Reddy P, Rankins D, Timoshanko A, Dunbar JA. Life! in Australia: translating prevention research into a large-scale intervention. *Br J Diabetes Vasc Dis* 2011; 11: 193-197. doi: 10.1177/1474651411410724
15. Vita P, Reddy P, Timoshanko A, et al. What do we know about recruitment and retention in diabetes prevention programs? An Australian perspective. In: Schwarz P, Reddy P, editors. Prevention of diabetes. Oxford: John Wiley & Sons, 2013: Ch. 4.
16. Vale MJ, Jelinek MV, Best JD, Santamaria JD. Coaching patients with coronary heart disease to achieve the target cholesterol: a method to bridge the gap between evidence-based medicine and the 'real world'. Randomized controlled trial. *J Clin Epidemiol* 2002; 55: 245-52.

18. Vale MJ, Jelinek MV, Best JD, Dart AM, Grigg LE, Hare DL, Ho BP, Newman RW, McNeil JJ. Coaching Patients On Achieving Cardiovascular Health (COACH); A Multicenter Randomized Trial in Patients with Coronary Heart Disease. *Arch Intern Med* 2003; 163: 2775-83.
19. Vale MJ, Sundararajan V, Jelinek MV, Best JD. Four-year follow-up of the multicenter RCT of Coaching patients On Achieving Cardiovascular Health (The COACH Study) shows that The COACH Program keeps patients out of hospital. *Circulation* 2004; 110: Suppl: III-801.
20. Jelinek MJ, Vale MJ, Liew D, Grigg L, Dart A, Hare DL, Best JD. The COACH Program produces sustained improvements in cardiovascular risk factors and adherence to recommended medications – 2 years follow-up. *Heart, Lung and Circulation* 2009;18: 388–392.
21. Jelinek MV, Santamaria JD, Thompson DR, Vale MJ. 'Fit for purpose'. The COACH Program improves lifestyle and biomedical risk factors. *Heart* 2012; 98:1608.
22. Ski, CF, Vale MJ, Bennett GR, Chalmers VL, McFarlane K, Jelinek MV, Scott IA, Thompson DR. Improving access and equity in reducing cardiovascular risk: the Queensland Health model, *MJA* 202 (3) · 16 February 2015.
23. Palmer, Abstract: The Long term Cost Effectiveness of the “Coaching Patients on Achieving Cardiovascular Health” (COACH) Program in Type 2 diabetes in an Australian Setting, 2012.
24. The Life! Program, Diabetes Australia – Victoria, 2013.
25. Gong Q, Gregg EW, Wang J, et al. Long term effects of a randomised trial of a 6 year lifestyle intervention in impaired glucose tolerance on diabetes related microvascular complications: the China Da Qing Diabetes Prevention Outcome Study. *Diabetologia*, 2011; 54:300-7.