



Investment Opportunity: Primary Prevention

Western Sydney Diabetes



Contents

- Overview**..... 1
 - The situation in western Sydney 1
 - The serious consequences of diabetes..... 2
 - The cost of diabetes 2
- 1. A whole of community approach is required**..... 4
- 2. Work to date**..... 5
- 3. The ideal moment for investment**..... 6
- 4. Prevention is economically sound**..... 6
- 5. The interventions** 8
 - Community wide interventions 8
 - Targeted interventions 9
- 6. Increased physical activity**..... 12
- 7. Improving food consumption**..... 15

This cost benefit analysis has been prepared to both define the extent of the diabetes problem in western Sydney and provide a series of interventions capable of having a significant impact on curbing this epidemic. The proposed interventions are not an exclusive list but are illustrative of the potential impact of community based interventions in terms of both health and financial benefits.

Overview

THE SITUATION IN WESTERN SYDNEY

In western Sydney, with its diverse population and areas of significant disadvantage, diabetes rates are substantially higher than national and state averages.

In Western Sydney

18% Of adults at Emergency Departments or visiting their local GP have diabetes

30% Have pre-diabetes

50% Of all western Sydney adults have diabetes or are at risk

1 in 2 People with diabetes don't know that they have it

People with diabetes take up more hospital beds

22% Of adults in Blacktown Hospital have diabetes... and stay longer

1.5x Amount of longer stay in hospital by people with diabetes

Diabetes in western Sydney is growing at 1% p.a.

12% Of adults in our community have diabetes

20% Of people aged 65 years or above have diabetes

Diabetes is now impacting younger people

4% Of people aged 20-44 have diabetes

85% OF TYPE 2 DIABETES IS PREVENTABLE

Overview continued

THE SERIOUS CONSEQUENCES OF DIABETES

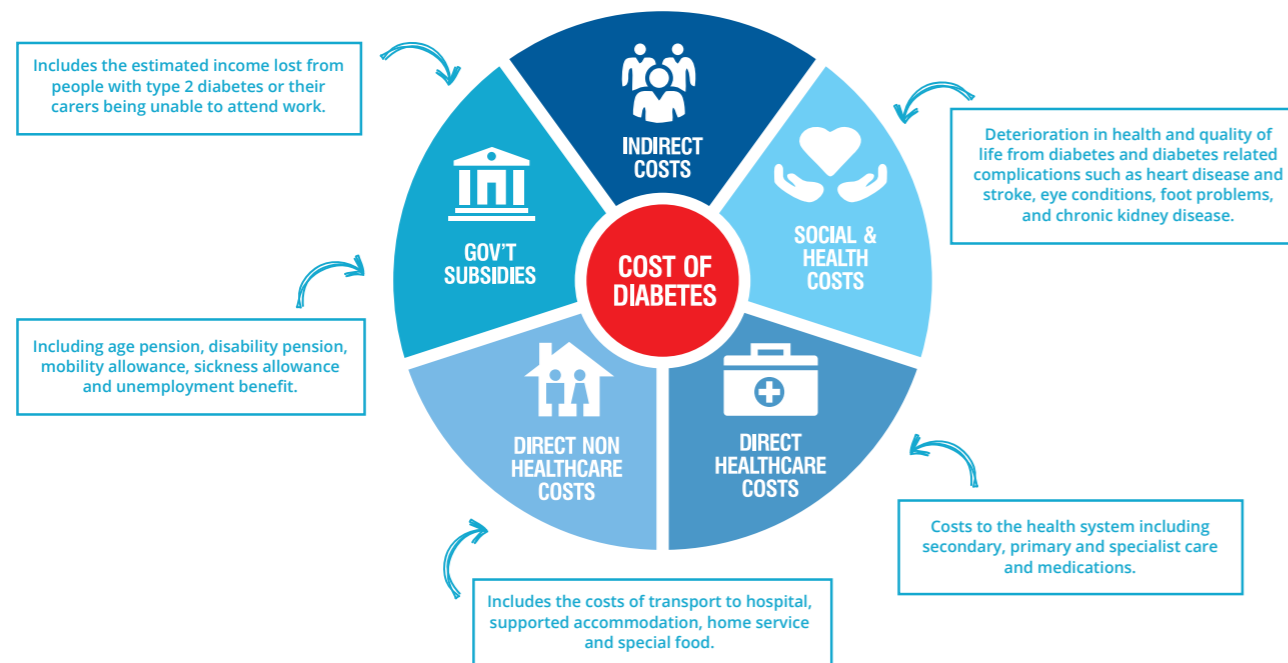
Diabetes is not just a problem for eyes and kidneys but impacts a wide range of body systems. With our high burden of disease, western Sydney has a huge problem both in hospital and the community as the diabetes epidemic grows.

People with diabetes have			
4x	Risk of heart failure	20%	Higher risk of cancer
2x	Risk of heart attack	30%	Will develop kidney disease
2x	Risk of stroke	2%	Will have an amputation
2x	Risk of dementia	Diabetes is the main cause of preventable blindness	

85% OF TYPE 2 DIABETES IS PREVENTABLE

THE COST OF DIABETES

The burden of diabetes comes at a cost both to the individual and the community



THE COST OF DIABETES continued

The burden of type 2 diabetes comes at a cost. There are personal costs of deterioration in health and quality of life, as well as financial costs to the economy.

Annual average social and health care costs of a person with Type 2 Diabetes (2023)	
\$6,803	Direct healthcare costs
\$1,700	Direct non-healthcare costs
\$8,847	Government subsidies
\$1,403	Indirect costs
\$18,753	Total annual whole of economy costs
\$25,769	Cost increases to \$25,769 in 2023 for someone with common complications impacting the blood vessels
\$112,700	The average lifetime cost of someone with diabetes is \$112,700 per person

Total estimated annual cost	
\$1.8b	It is estimated that there are currently over 91,000 people in western Sydney with diabetes. This brings the annual cost to \$1.8 billion

85% OF TYPE 2 DIABETES IS PREVENTABLE



1. A whole of community approach is required

Addressing diabetes requires a collective effort. Research has established that lifestyle modifications, weight management, and alterations in diet and exercise can prevent type 2 diabetes.

To attain enduring public health benefits through diabetes and obesity prevention, it's essential to focus on the entire population, irrespective of their existing health conditions.

In the context of type 2 diabetes development, approximately half originate from high-risk groups, while the remaining half are from the

general population, which ranges from low to intermediate risk. Thus, a dual-faceted prevention program is necessary to curb the escalation of type 2 diabetes—one strategy targeting high-risk individuals and the other being a broad community-driven initiative.

Minor changes in average risk levels can yield substantial overall effects on the population.

Previous research has shown that a 2kg reduction in weight on average reduces new-onset diabetes in people with pre-diabetes by 30%.

2. Work to date

Western Sydney Diabetes (WSD) is a collective effort of five primary partners, including Western Sydney Local Health District, Western Sydney Primary Health Network, Diabetes Australia, PwC, and the Department of Planning and Environment.

WSD has successfully formed an Alliance with more than 130 organizations, pooling resources to address the social determinants of diabetes in western Sydney. This diverse group of alliance members hails from various sectors including public, academic, corporate, government, and non-government entities. Over the past six years, these Alliance members have effectively collaborated, networking and forming partnerships to tackle the diabetes epidemic in the region.

Together with subject matter experts, the Alliance members have assessed local and international interventions' evidence to devise a comprehensive diabetes prevention strategy. This plan entails assembling a range of initiatives designed to promote healthier, more active lifestyles within the local community.

These initiatives have been rigorously researched and evaluated to ensure their cost-effectiveness and potential to reduce the incidence of pre-diabetes and diabetes successfully. The proposal will outline these initiatives, which are designed for both 'healthy' individuals and those at 'high risk' of developing diabetes. Additionally, these initiatives encompass various life stages, from pregnancy through adulthood.



3. The ideal moment for investment

Without intervention, diabetes has the potential to deplete the health budget. The WSD Alliance showcases:

Broad Population Reach

The WSD Alliance includes partners from the food, physical activity, and urban planning sectors. These partners are equipped to either launch new initiatives identified by the Alliance or expand existing ones. Alongside local business representatives, these partners have the capacity to reach a significant portion of the one million western Sydney residents. This reach extends to various hard-to-reach populations, including Aboriginal and Culturally and Linguistically Diverse (CALD) communities.



4. Prevention is economically sound

Estimations suggest that type 2 diabetes can cost the Australian healthcare system up to \$6.57 billion annually.

Government Recognition and Dedication to the Issue

Solid and extensive connections exist across local and state governments, both of which have publicly committed to combatting the diabetes epidemic in western Sydney.

Proven Capability to Attain Results

Local initiatives have been rolled out and assessed, demonstrating the ability of Alliance members to collaborate, support each other's work, and achieve meaningful outcomes.

The proposed interventions highlight considerable financial and non-financial net advantages that can be achieved through investing in preventative measures.





5. The interventions

COMMUNITY WIDE INTERVENTIONS



Lose 2kg challenge

If the average person at risk of diabetes loses 2kg in weight, they reduce their risk of developing diabetes by 30%.

- A highly visible community wide intervention to encourage overweight adults to lose 2kg
- Target audience – all adults who are overweight or obese

This intervention will be aimed at the 65% of adults who are either overweight or obese. It will commence with a number of community events to engage community groups, organisations, business and individuals to take up the weight loss challenge. Rewards would be provided for participation and completion of the program.

This would be an ongoing campaign that would run over a period of 3 years and engage 50,000 adults. It is assumed that 85% of participants would complete the challenge. This would result in 12750 adults not developing diabetes. The cost for this program is calculated.



Get Western Sydney Dancing

- A fitness & weight loss intervention aimed at increasing social connection along with providing physical and mental health benefits.
- Target audience – all adults with a particular focus on CALD communities

This intervention commences with a multicultural event aimed at showcasing community dancing and encouraging participation by those who are competent in that dance form along with supporting

lessons for those who are inexperienced in that dance form. The lessons are conducted with the aim of enabling the participants to take part in regular community dancing taking place in the evening at various outdoor venues and parks in western Sydney.

It is estimated that this intervention would engage initially 3000 high risk people and result in diabetes reduction of 720.

TARGETED INTERVENTIONS

Establishing appropriate nutrition and physical activity practices during pregnancy and in early childhood reduces the risk of diabetes in infancy, adolescence and adulthood.



Food education workshops for young mothers

- A group intervention to be conducted at playgroups and regular library meetings
- Target – new mums & carers

This intervention involves providing talks and activities by a dietitian to illustrate how to prepare easy, low-cost tasty food for the whole family. It is estimated that this would reach 4,200 families and impact both adults and children over 14 years.



Health Education for expectant mothers

About 15% of all pregnant women in western Sydney develop gestational diabetes with half of these women developing diabetes within 10 years. These numbers continue to grow, especially with changes to the ethnic mix of western Sydney with an increasing number of mothers from the Indian subcontinent who are at increased risk of diabetes.

- Personalised pre-natal and post-natal education for pregnant women and new mothers with a focus on healthy eating and active lifestyles

- Target – women at risk of gestational diabetes

Nurse educators will provide specific lifestyle consultations at ante natal visits and through post-natal home visits to high-risk women.



Participation in community gardens by housing commission residents

- A program to provide residents with the opportunity to learn about healthy food and grow their own produce through accessing community gardens

- Target – social housing residents

Program participants will be provided with transport and access to existing underutilised community gardens and education programs



GP Walking Groups

- The establishment of Heart Foundation walking groups from local GP surgeries
- Target – patients identified at risk of chronic disease

Local GP practices are provided with the support and training to conduct ongoing walking groups for those patients who are overweight, obese, isolated, at risk of or currently managing specific chronic diseases.



Live Life Get Active

- A fitness and diet program made available free of charge to adults in parks
- Target – adults who are keen to improve their fitness who feel uncomfortable in a gym environment

This program uses bootcamps to offer yoga, cross-training and boxing in parks on a daily basis. The focus is on those people who do not normally exercise and would like to improve their health and wellbeing.



Dance Classes

- Classes set in community settings which offer one of a variety of dance styles including ballroom, sirc and specific CALD dances including Bollywood and Chinese fan dancing
- Target – adults who are interested learning a specific type of dance to enjoy on a regular basis

This intervention is aimed at often hard to reach populations with a variety of ages and ethnicities. The funding would be to introduce the participants to a particular form of dance until they are competent, after which time the program would be self-funding.

Intervention	Total Benefits \$m	Set Up Costs \$m	Net Benefits \$m
Lose 2kg Challenge	\$142.2	\$1.0	\$141.2
Get Western Sydney Dancing	\$26.7	\$0.1	\$26.6
GP Walking Groups	\$104.7	\$1.9	\$102.8
Live Life Get Active	\$56.1	\$9.8	\$46.4
Dance Classes	\$81.3	\$0.6	\$80.6
Education New Mums	\$52.6	\$0.4	\$52.2
Education Expectant Mums	\$63.9	\$5.4	\$58.5
Community Gardens	\$10.6	\$0.3	\$10.3
Total	\$538.1	\$19.5	\$518.6

Lose 2kg Challenge

A community wide program is required in order to make significant changes to the diabetes epidemic in western Sydney. A weight loss of as little as 2kg may prevent 30% of the at-risk population from going on to develop diabetes. This concept has gained significant support from local western Sydney leaders from the areas of health, local and state government, along with leaders of community groups and members of the Alliance.

In addition, the general feedback from overweight at-risk adults is that a 2kg weight loss is quite achievable.

This intervention would commence with a number of local events and then move on to implementation within the community. Rewards would be provided for completion of the challenge. The intervention would not be prescriptive and different groups can choose their method of weight loss following education on suitable safe options of losing weight. Weight loss will be reported and recorded.

The program would receive ongoing promotion in local and social media. Groups to be specifically supported include CALD groups, places of worship, workplaces, GPs, community groups, sporting groups and clubs.

It is proposed to engage 50,000 people (approximately 9% of the adult population) during a 3 year period. As well as the health benefits, this program will also provide a greater community connection amongst our residents and a sense of achievement and camaraderie amongst group members all working towards the same goal.

Investment benefits	
Cost to set up	\$1.0m
Total benefits	\$142.2m
Net benefit	\$141.2m



6. Increased physical activity



Physical activity helps control blood glucose levels and is one of the most effective preventive measures and treatment for both obesity and type 2 diabetes.

Early intervention and lifestyle changes in people with pre-diabetes which involved physical activity for 30 minutes per day contributes to a weight loss of 5 kilograms, which can reduce the risk of developing diabetes by 58% at the end of the program.

Supervised physical activity is particularly effective as it provides encouragement and guidance. One study identified that supervised physical activity sessions produced a 1.17mmol/g greater decrease in two hour glucose measure when compared with physical activity recommendations alone. This demonstrated the important role of ongoing monitoring and coaching programs to keep participants on track to achieve their weight and diet goals.

Residents in western Sydney are less likely to walk for transport than people living in Central or Eastern Sydney.

Get Western Sydney Dancing

This intervention commences with a multicultural dance event to celebrate the many cultures in the community. The goal will be to showcase and promote various forms of dance including dances specific to particular populations, encourage participation by the audience and enable participants to continue dancing in local parks on a regular basis. Community members who would like to become competent in a particular dance style will be provided with group lessons to enable them to go on to participate in the regular evening dances.

The rationale behind the choice of dancing as an intervention is driven by the fact that dancing is a pastime that is universally popular, culturally appropriate, provides a multitude of health and fitness benefits, along with assisting in mental health, community engagement and a reduction in social isolation. It is an alternative type of exercise which is appealing to all ages, requires little to no equipment, is inexpensive and once basic steps have been learned can be self-sustaining. In addition by using local parks, the intervention would enable increased usage of local resources and create a sense of community in often socially isolated areas.

Investment benefits	
Cost to set up	\$0.1m
Total benefits	\$26.7m
Net benefit	\$26.6m

GP Walking Groups

Establishing GP walking groups is a way to increase walking amongst at risk people. We know that GP referral has a very positive influence on the engagement of the patient and also know that having to report back to the GP is a great motivator for patients to continue a lifestyle change. Similar programs conducted in collaboration with the Heart Foundation from GP practices have been well attended and have existed for many years. Practice staff can set up the group, with the intention of handing over the day to day running to the participants within a couple of months. After this time the involvement of the practice is merely as a reporting entity and time and financial commitment is minimal.

This intervention has an added benefit of bringing the community together. Pharmacies, Local Councils and Western Sydney Primary Health Network have shown a willingness to assist with the setting up, monitoring and referral of residents to the walking group.

Investment benefits	
Cost to set up	\$1.9m
Total benefits	\$104.7m
Net benefit	\$102.8m

Live Life Get Active

The Live Life Get Active program is a community based exercise and healthy eating program which is run free of charge in parks throughout Australia. They provide classes in boxing, circuit training and yoga to any adult over 18 who wishes to enrol.

The classes are run by exercise physiologists and are conducted 5 days per week at times that suit various lifestyles. Each class can cater for up to 30 participants at a time. The evaluation of the classes show that the average participant improves their physical fitness, loses weight, as well as increasing their self-reported 'happiness score' from 4 to 8 after a single term's attendance.

Whilst the councils are generously providing their facilities free of charge, finances are required to conduct the classes.

The majority of these contributions are dependent on local sponsors. With over 60% of western Sydney residents being overweight or obese, there is a massive potential to increase the number of localities for these classes.

Considering many of the most at-risk residents have limited access to transport, an increase in classes particularly in disadvantaged neighbourhoods is a major priority. The ability to offer these classes free of charge at convenient localities throughout western Sydney will give all adult residents the ability to get fit and active, to improve their health, happiness and wellbeing. Many attendees state that their Live Life Get Active class is the only outing that they have all day.

Investment benefits	
Cost to set up	\$9.8m
Total benefits	\$56.1m
Net benefit	\$46.4m

Dance classes

Dance is a form of physical activity which is appropriate for all ages, ethnicities and fitness levels. As well as increasing physical fitness, dancing also provides a way of enabling social connection in often isolated groups. Dance is an inherently fun exercise that has the potential for sustained success in terms of subject interest and adherence to physical activity participation.

Dance classes have proven to be a popular activity throughout western Sydney and recent surveys completed amongst the over 60's community have shown an enthusiasm to attend dance classes on a regular basis. This group is particularly prone to being more sedentary, less engaged and having lower fitness levels and risk of falls. Similarly, CALD groups tend to have lower activity levels and are harder to engage in mainstream exercise programs. As such, both groups are more prone to developing diabetes and other chronic diseases.

Dance classes are held at select dance schools throughout western Sydney with ballroom and line dancing being particularly popular amongst the older at-risk population.

It is proposed to make dancing classes available to the wider community through commencing free dancing classes in community venues. The intervention proposes that classes be set up for the CALD and older community to enable them to learn the basic steps of each culturally appropriate dance. These classes would be provided free of charge for a term and then the participant can participate in evening dances at outdoor venues throughout western Sydney. If required, further lessons can be undertaken on a fee basis.

Investment benefits	
Cost to set up	\$0.6m
Total benefits	\$81.3m
Net benefit	\$80.6m



7. Improving food consumption

There has been a shift in the average diet over the last 20 years towards a high-fat, energy dense diet which has contributed to more than 63% of adults and at least 25% of children being overweight or obese. Studies show that a weight loss of 5 kilograms or 5% of body weight through healthy

eating and physical activities can delay or prevent type 2 diabetes and other diet related diseases.

To achieve this, people need to have the skills and knowledge to be able to make suitable choices for themselves and their families.

Education program for new mums

New mums and carers have a major influence on the diet of their family, both by being role models themselves, as well as often being the person who prepares the family food.

In western Sydney this is often a hard to reach group who lack the community connections and/or confidence to set up and run independent playgroups. They do however, attend playgroups which are run by organisations such as church groups, schools or community groups. There is also very strong attendance by these young mothers at local libraries where songs and rhymes are conducted several times per week for all ranges of pre-school children. These events are very popular and well attended. Education sessions incorporated in these events are especially well attended.

These informal groups provide the ideal friendly and supportive environment to give the mothers and in some cases the children, the opportunity to learn, prepare and taste healthy food.

A dietitian will attend these meetings and give talks, demonstration and tastings to show that health eating can be easy, low cost and fun.

This service will be offered to playgroups in western Sydney on an ongoing basis to capture new members as they join the group. By doing this all the target groups such as new mothers, carers, CALD and special focus groups will all benefit from the education.

Investment benefits	
Cost to set up	\$0.4m
Total benefits	\$52.6m
Net benefit	\$52.2m



Health education for expectant mothers

Evidence shows that the health of parents before conception and during pregnancy can affect the future health of newborn babies and continue well into adulthood. About 15% of all pregnant women in western Sydney develop gestational diabetes, with half of these women developing type 2 diabetes within 10 years. These rates are expected to grow, especially with the increasing number of people who have a genetic predisposition and cultural practices that increase their risk of diabetes.

Because pregnancy is one of the few times that western Sydney residents visit hospitals, this is an ideal time to begin changing eating and lifestyle habits.

Western Sydney LHD antenatal clinics, maternity units and community health centres will be at the forefront of delivering pre-natal and post-natal education to pregnant women and new mothers with a focus on healthy eating and active lifestyles.

Under this program, educators will consult with women at high risk of developing gestational diabetes during their regular ante-natal visits to hospital and post-natal visits to hospital or in their own home. Educators will help women understand the dangers of gestational diabetes to their health and their future children and will help in managing

weight and eating healthily. Through the follow-up program of 8 home visits over 24 months, the focus will be on ensuring that the family continues to eat healthy meals and engage in physical activity.

This program will address the growing number of women with gestational diabetes and ensure an ongoing personalised approach to the maintenance of good health during pregnancy and for ongoing support to enable new education and healthy habits to be adopted and maintained over a 24 month period.

Investment benefits	
Cost to set up	\$5.4m
Total benefits	\$63.9m
Net benefit	\$58.5m

This will prevent diabetes in 3 per 100,000 of 10-14 year olds and 8 per 100,000 of 15-19 year olds and a 58% reduction in the prevalence of diabetes for high risk mothers

Continuing benefits to 2031 and beyond

While not costed it is also predicted that this education and habits will have a positive impact on subsequent pregnancies in this high risk group.

Community Gardens

Having access to fresh and reasonably priced food is the first step to healthy eating.

Too often, people living in social housing are on a limited budget or do not have access to local shops that sell fresh fruit and vegetables. This leads to many not eating healthily because of the high cost of fresh fruit and vegetables and not participating in physical activity because of limited open space.

Community gardens can improve their diet and are a way to improve the lifestyle of social housing tenants by building skills and confidence, increase social interaction and increased physical exercise in a pleasant environment. In some social housing areas community gardens have been established with varying levels of success. Councils have remarked that they often have to clear up gardens which have fallen into disrepair after the initial enthusiasm wanes, or local champion moves on.

All councils in western Sydney have a variety of community gardens open to participation for the local residents. These garden are well organised and maintained and have additional features making them suitable for education and in some cases, cooking demonstrations. Most have adequate capacity to allow usage by additional participants. The opportunity therefore exists for the social housing tenants to gain access to the gardens and take advantage of the expertise of the council employees and facilities.

The intervention proposes that a coordinator and community transport be available one day per week to take the residents from the 3 social housing areas to these gardens.

Investment benefits	
Cost to set up	\$0.3m
Total benefits	\$10.6m
Net benefit	\$10.3m



Janine Dawson
Diabetes Prevention Program Manager

Telephone: (02) 8670 0015

Mobile: 0419 239 179

Fax: (02) 9851 6146

Email: janine.dawson@health.nsw.gov.au

Web: www.westernsydneydiabetes.com.au

Twitter: @wsdiabetes

The information provided in this publication is current as of March 2022. Please refer to the individual websites for the most current information and for any changes to products or services.

© June 2023