TAKING THE HEAT OUT OF OUR DIABETES HOTSPOT

Western Sydney Diabetes enhancing...
NSW Diabetes Prevention Framework
NSW Premier’s Priority
National Diabetes Strategy

THE TIME IS NOW
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INTRODUCTION

‘Taking the heat out of our diabetes hotspot’ outlines the Western Sydney Diabetes (WSD) initiative’s response to the growing threat diabetes poses to our health and wellbeing. It calls for all levels of government, the private sector and non-government partners to work together. Western Sydney is a diabetes hotspot with disease rates higher than the New South Wales (NSW) average. If this ‘hotspot’ is not addressed, within a decade it will cause an unsustainable economic and societal burden on the state’s healthcare system.

We are not alone in recognising the need for action. Diabetes is a mounting problem for all of NSW. In 2014, 9.4% of the state’s population had diabetes or high blood glucose, up from 6.4% in 2002. The NSW Premier has included obesity in his own and State-wide priorities. The pending launch of the NSW Diabetes Prevention Framework co-ordinates diabetes-related work across the state, identifies enhancements to evidence-based practice and sets a range of strategic directions for NSW Local Health Districts (LHDs) for decreasing the risk of developing diabetes or diabetes complications in local populations.

The Australian Government recently released ‘The Australian National Diabetes Strategy 2016-2020’ in which it was estimated that diabetes is costing Australia $14 billion per year. The Strategy states that “overcoming the many barriers to improving diabetes prevention and care requires a multi-sectoral response led by governments and implemented at the community level”.

In response to this health crisis, Western Sydney Local Health District (WSLHD) and WentWest as the Western Sydney Primary Health Network (WSPHN) have facilitated a whole-of-district methodology through Western Sydney Diabetes (WSD) Initiative.

The partnership and the project leaders of the programs working together in the WSD have an excellent track record of success.

A REASON TO ACT
Diabetes is the world’s fastest growing chronic condition and is becoming the largest burden of disease in Australia.

- Every six seconds a person dies from diabetes
- Every five minutes a person is diagnosed with diabetes
- The number of people with diabetes in Australia is three times higher than 25 years ago
- One in four Australians aged over 25 years has diabetes or pre-diabetes.

9.4% of the NSW population had diabetes or high blood glucose in 2014, up from 6.5% in 2002.

"Type 2 diabetes and the lifestyle risk factors of overweight and obesity, physical inactivity, unhealthy eating and smoking have a large impact on the health of both individuals and the community in NSW."

Jillian Skinner
NSW Minister for Health and Medical Research
OVERWEIGHT PROBLEM

Almost two-thirds of Australian adults and one in four children are overweight or obese. Excess weight is responsible for 7200 deaths each year in Australia. Obesity costs the Australian economy $38 billion a year, through more than four million days lost from work, over $1 billion in medical costs, as well as the cost of premature death.

It has taken 20 years for Australian adults on average to gain 4kg in weight, and this is a primary driver of the diabetes epidemic. An average weight loss of 4kg in adults will prevent most people getting diabetes. An average weight loss of 2kg in adults will reduce the conversion of people with pre-diabetes to diabetes by 30%. Our challenge is to roll back the advancement of diabetes in our community to achieve the same weight we averaged in 1995.

Turn back the clock 20 years
Lose 4 kgs and STOP DIABETES.

People in Western Sydney are living in a diabetogenic environment where the population, community, local economy and built environment make it difficult for the residents to engage in a healthy lifestyle. We need to urgently change the environment in which people live, work and play to address the social determinants of poor health in Western Sydney.
**DIABETES RISK**

Pre-diabetes is estimated to affect about 16.4% of Australians and it is associated with an increased risk of developing diabetes, cardiovascular and other vascular diseases. Preventative action taken at this time can prevent a significant number of patients going on to develop diabetes. Without interventions, approximately 50% of those with pre-diabetes will subsequently develop diabetes within 10 years.

**POOR HbA\(_1c\) CONTROL**

Most Australians have poor diabetes control so the risk of complications is increased. HbA\(_1c\) levels are a measure of control. A level of 7 percent is considered good control. Those individuals not reaching the <7% target are at higher risk of diabetic complications.

Nearly half of all Australians with diabetes have levels greater than 7%.

Every 1% reduction in HbA\(_1c\) levels reduces the risk of complications.
GESTATIONAL DIABETES

Gestational diabetes leads not only to ill health for the mother but often leads to premature birth, excessive birth weight, infants who struggle with hypoglycaemia after birth and ongoing health issues for the child such as an increased likelihood of developing type 2 diabetes later in life.

Research over recent years has found that ‘pre-programming’ of children’s health conditions can occur before conception and during pregnancy, and is influencing new thinking in clinical practice for maternity care and the importance of a healthy diet for mothers prior to conception.

Recent years have seen a dramatic growth in gestational diabetes in Western Sydney, predominantly in at-risk ethnic groups. The statistics are alarming with the rate approaching 15% of all pregnancies. Half of these mothers will develop T2D within 10 years. 30% of the children of gestational diabetes are likely to develop T2 Diabetes.

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<th>Overall NSW</th>
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<td>Stillbirth</td>
<td>1.4%</td>
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<tr>
<td>Malformation</td>
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Diabetes Overall NSW

Stillbirth 1.4% 0.6%
Malformation 4.3% 0.9%

30% WILL DEVELOP T2 DIABETES
More than half of Western Sydney’s population is overweight and at risk of developing type 2 diabetes. The red areas on the map show the odds ratio of having diabetes is 1.5 in the areas including Western Sydney. This is much higher that the odds ratio in the blue areas, which are as low as 0.5 in the beachside and northern suburbs. This data was compiled by University of Wollongong researchers Dr Thomas Astell-Burt and Dr Xiaoqi Feng from a 45 years and up population health study.

One of the key goals of the WSD initiative is to turn the red hot-spots in our region into blue.

An extensive screening program of 4000 residents throughout Western Sydney during 2013-15 using the AUSDRISK assessment tool identified that up to 50% of the population were at high risk of developing the disease. This went as high as 100% in some high-risk populations.

Factors such as age, family history and place of birth can contribute to an increased risk of developing diabetes. However, some groups are at even greater risk of developing diabetes or complications from their diabetes and therefore require targeted actions.

All these groups are strongly represented amongst Western Sydney residents:

- **Indigenous people** – type 2 diabetes is more frequent and has an earlier onset in this population

- **People with mental health problems** – 41.6% of adults with diabetes reported having medium, high or very high levels of psychological distress.

- **People affected by psychotic illness** – experience a range of risk factors that place them at significant risk of developing diabetes compared to the general population.

- **Women in their childbearing years** – the percentage of gestational diabetes in Western Sydney tends to be higher than for NSW, and it also has a high birth rate, with four out of the five local government areas having higher fertility rates than the rest of NSW.
DIABETES CASE FINDING USING HbA$_{1c}$ TESTING

Western Sydney LHD conducted a pilot study on patients presenting to the Emergency Department (ED) at Blacktown Hospital to assess the efficacy of HbA$_{1c}$ testing to detect diabetes and pre-diabetes in an area of high diabetes prevalence. Opportunistic blood glucose levels were measured in all non-pregnant individuals who had blood collected after presenting to the ED for any clinical indication. HbA$_{1c}$ was automatically measured if the random glucose level was ≥ 5.5mmol/L. Diabetes was diagnosed if the HbA$_{1c}$ was ≥ 6.5% and pre-diabetes if HbA$_{1c}$ was between 5.7-6.4%.

There were 4580 presentations to the ED and 1267 (27%) HbA$_{1c}$ measurements were obtained over the 6 week period. In this cohort:

- Diabetes (HbA$_{1c}$ of ≥ 6.5%) was present in 38.4% (n=487)
- Diabetes was newly diagnosed in 32.2% (n=157)
- Pre-diabetes (HbA$_{1c}$ of 5.7-6.4%) was diagnosed in 27.4% (n=347)
- Hospital coding analysis revealed 28% (n=88) of patients identified as having diabetes through ED HbA$_{1c}$ testing, were not coded for a diagnosis of diabetes on discharge

Opportunistic testing for diabetes is effective as almost a third of individuals tested had undiagnosed diabetes. In addition, more than a quarter of individuals were at risk of developing diabetes. Early detection provides an opportunity to initiate preventative measures such as NSW Government’s ‘Get Healthy’ program.

FOOD DESERTS AND MAPPING

Dr Thomas Astell-Burt and Dr Xiaoqi Feng, senior faculty at the University of Wollongong, have been working with the WSD initiative to geo-map food accessibility within Western Sydney. This has plotted the availability of healthy food in comparison to energy-dense, nutrient-poor foods within walking distance of residences.

The research has identified so-called ‘food deserts’ where healthy food is not easily available and also that areas with higher rates of type 2 diabetes have fewer healthy food options for the people who live there. The resulting maps have contributed to explaining the inequality in health outcomes between areas of differing socio-economic status within Sydney. For example, residents in Blacktown have a three times greater risk of developing diabetes than in more affluent coastal suburbs such as Mosman.

This research has significant implications for the way we plan communities. Jobs, transport and urban amenities are key features of urban planning; however health should also be a priority. By increasing access to green space and fresh food, it will be possible to reduce the rates of lifestyle-related diseases like type 2 diabetes.
The Western Sydney Diabetes (WSD) Steering Committee was established in 2012, meeting quarterly since, demonstrates the high level of commitment of both Western Sydney LHD and WentWest (Western Sydney PHN) towards addressing this issue. It provides leadership, strategic direction and the structure to support the implementation of the initiative.

Co-chaired by the CE of LHD and CEO of WentWest, and supported by the Chair of the LHD Board, the Steering Committee facilitates the interface with numerous other partners including NSW Department of Premier and Cabinet (DPC), Premiers Council for Active Living, NSW Health, WSROC, Councils and Universities.

The CEO of Diabetes NSW has been a particularly active partner in progressing the cause of the Steering Committee and supporting numerous projects resulting from the WSD initiative.

**THE EXECUTIVE MANAGEMENT TEAM**

An Executive Management Team (EMT) has been established, chaired by the Co-chairs and including the Director of Integrated Health, WSLHD, Heads of Endocrinology from Westmead and Blacktown Hospitals, Business Development and Program Director Wentwest Ltd, Program Lead WSD and the WSD Coordinator.
The EMT meets quarterly before the Steering Committee to agree and manage the resource inputs of both the LHD and Wentwest and review other important management decisions.

THE CORE TEAM

The Program Lead manages a core team who work on a full-time basis to support the work of WSD including the clinical interface between the hospital and community. This includes the Coordinator WSD, Prevention Program Manager, Community Diabetes Nurse Consultant, Community Advanced Trainee Endocrine Registrar Blacktown and Mt Druitt Hospital (BMDH), RMO Diabetes BMDH and Public Health Scientist (Wollongong University).

This team is part of the Integrated Health Portfolio in the LHD and report to the Director of Integrated Health and Chair of Medicine BMDH. The WSD core team meet monthly with a similar core team of WentWest lead by Business Development and Program Director and Primary Health Care Manager.

WORKING GROUP

A number of working groups are active on projects under the oversight of the WSD Steering Committee including:

- A Prevention Alliance (includes leadership from NSW DPC with support from Population Health in WSLHD)
- A Food Working Group
- A Research and Evaluation Group (with major collaborative input from Department of Endocrinology BMDH, University of Western Sydney and University of Wollongong)
- Western Sydney Gateway a patient self-management app and website (including partners WSLHD, Wentwest Ltd, NSW Diabetes, Telstra, Sanofi and other industry partners)

MEDIA

The Media Team WSLHD are highly supportive of WSD and create opportunities for engagement with National Broadcasters, State and Local Papers and radio to raise the profile of key events and findings. Edge Marketing has been engaged to assist with communication. A WSD web portal is being developed on Diabetes NSW website to facilitate the communication.

FORUMS

We have quarterly forums on key topics of interest to WSD and its active members. These have included topics such as:

- Western Sydney a diabetes hot spot: understanding the geo-epidemiology, economics and environment
- Diabetes is Everyone’s Business
- Diabetes Prevention and the NSW Healthy Worker Initiative
- Metabolic and Psychosocial Care for People with Mental Illness and Diabetes
- Planning for our Healthier Future
- Implementing the New Standards for High Risk Foot Services
- Developing A Model of Care for Diabetes Eye Care in Western Sydney
- Building the Capacity of General Practice for Diabetes Management and Highlighting the Role of the Practice Nurse
- Diabetes in Aged Care

PARTNERSHIP

The initiative is an open and active partnership for local, state and national interested organisations to join in on the common cause to slow the progression of diabetes in Western Sydney and turn our red map into blue. The invitation is open to people who share this vision and align with the initiative.

“Recognising the impact of the diabetes epidemic now and in the future in Western Sydney we need a larger, comprehensive approach to stop it overwhelming our health system.”

Danny O’Connor
Chief Executive
Western Sydney Local Health District
FOUR DOMAINS FOR CHANGE

The distinguishing aspect of the Western Sydney Diabetes program is the targeting of four core domains to achieve optimal results:

1. Prevention
2. Screening
3. Enhanced management
4. Specialised consultation

Recognising that diabetes is a critical health priority for Western Sydney, the goals of the WSD initiative are to increase the proportion of the healthy population, slow the progression towards being at risk of diabetes, and reduce the size of the at-risk population. In patients with diabetes, the aim is to prevent and to slow their health deterioration through a continuum of obesity, pre-diabetes, uncomplicated diabetes to a condition of diabetes with devastating co-morbidities. Given the right strategy, commitment and resources the diabetes epidemic can be turned around.

The healthy benchmarks for Western Sydney are aimed at turning our diabetes red spot on the map into blue. A patient-centred approach is designed to create an efficient and higher quality of experience for patients. This approach is ultimately aimed at reducing the burden and costs of diabetes in the district.

This district approach recognises that diabetes care is multi-disciplinary and occurs in a variety of settings and the prevention is multi-sectoral, so a partnership approach needs to be mobilised to support the initiative.

TURNING RED TO BLUE – FRAMEWORK FOR ACTION

SLOW THE PROGRESSION OF DIABETES
HEALTHY
HIGH RISK OF DIABETES
DIABETES WITH LOW COMORBIDITY
DIABETES WITH HIGH COMORBIDITY
SLOW THE PROGRESSION OF DIABETES
3 ENHANCED MANAGEMENT BY GPs AND ALLIED HEALTH

4 SPECIALISED CONSULTATION AND ENHANCED HOSPITAL CARE

HEALTHY BENCHMARKS FOR WESTERN SYDNEY

Western Sydney’s average weight loss goal of 2kgs reduces the risk of developing T2 diabetes by 30%.

50% of people in Western Sydney with HbA1c <7%.

Reduce diabetes prevalence to less than the NSW state average in 5 years.
Our primary function is to care for people in need and to find practical and feasible ways to assist our citizens to experience the best possible health. This requires us to take hold of the hands of other social agencies such as education, community services, transport, and planning to advocate for better and safer environments, more walkways and parks in our suburbs, more community interaction, fewer liquor outlets and easier access to fresh food. No other way exists to deal definitively with the massive problem of diabetes.

Professor Leeder
Chair of Western Sydney Local Health District Board
ALLIANCE UNDER THE PREMIER’S DEPARTMENT

Following this positive start, an elevation of the Alliance has been planned early in 2016 with support from the Department of Premier and Cabinet. This partnership will enable the involvement of senior management from a variety of non-health-related government departments including Planning and Environment, Transport (RMS and Transport Systems), Education, Parklands, TAFE, Sport and Recreation and Agriculture.

An event to mark both the establishment of the Diabetes Prevention Alliance and to engage the multiple partners within Western Sydney is scheduled, and will be a collaboration between the DPC and WSLHD. Participants will be invited to form Leader Groups with the capability of acting on specific issues relevant to Western Sydney.

MEDIA CAMPAIGN

Media interest regarding diabetes in Western Sydney has already been demonstrated through national television, radio and press coverage. Interest in both the unhealthy Western Sydney environment and food deserts have gained particular attention. This coverage has been generated from media interest, however a concerted local media campaign will be required to supplement the marketing provided by the proposed State and National Diabetes Prevention Campaign.

Additional resources are needed to ensure the campaign has sufficient reach and coverage, and to produce information targeted at the various at-risk populations including lower SES, Indigenous and CALD groups that make up a large proportion of Western Sydney residents.

Due to the severity of the disease in Western Sydney, a long-term and sustained local campaign is essential to successfully educate and embed long-term behaviour changes in this high-risk population. This campaign will require many differing elements with multiple focal points to fit the differing requirements of the many diverse groups living in the area.
IMPLEMENTING HEALTHY EATING AND ACTIVE LIVING (HEAL STRATEGY)

The NSW Ministry of Health’s Healthy Eating and Active Living (HEAL) Strategy 2013-18 is a strategic, coordinated investment across agencies and sectors of the NSW government to change environments and support individuals to achieve and maintain a healthy weight throughout life to prevent the development of type 2 diabetes and cardiovascular disease.

CURRENT PROGRAMS

The WSHLD has implemented a number of programs funded under this initiative for both children and adults.

The Healthy Children’s Initiative is a range of evidence-based programs, which aim to increase levels of physical activity and promote healthy eating habits. The WSHLD successfully implemented three of these programs.

Live Life Well @ School is a joint initiative between the NSW Department of Education and NSW Ministry of Health to get more students, more active, more often and to focus on healthy eating habits. All government, Catholic and independent primary schools are eligible to participate. Live Life Well @ School assists schools to develop whole school strategies that support physical activity and healthy eating. This is done by improving the teaching of nutrition and physical education, fostering community partnerships and providing opportunities for more students to be more active, more often.

Local Health Districts provide ongoing support to Live Life Well @ School trained schools via site visits, phone calls and email follow-ups. Local Health Districts provide assistance through planning, supporting, providing information and access to teaching resources.

Munch & Move is NSW Health initiative that supports the healthy development of children from birth to five years by promoting physical activity, healthy eating and reduced screen time.

Munch & Move offers training and resources to educators working in NSW early childhood education and care services. The training aims to assist educators to implement a fun, play-based approach to supporting healthy eating and physical activity habits in young children.

The Go4Fun program, a healthy lifestyle program for families with children who are overweight. Go4Fun is a ten-week healthy lifestyle program for children aged 7 to 13 years, run by qualified health professionals. Sessions are two hours long and held after school, once a week running parallel with school terms.

The program aims to improve the health of the child through the development of healthy lifestyle behaviours, as well as educating and positively affecting children’s attitude to food and exercise. The program includes nutritional information, support and advice, personal improvement and fun games.

Other HEAL services to have been implemented in Western Sydney include:

Healthy Workers Initiative: A strong start to this campaign has been achieved in Western Sydney. This will be further built upon by supporting the implementation of the Get Healthy at Work Program through all government agencies.

Get Healthy Information and Coaching Service: A free six-month telephone coaching service conducted by qualified health coaches to enable participants to reach their health goals. Major expansion of this program is possible through promotion in workplaces, community groups and the CALD community. Priority will be given to increasing the number of referrals from health professionals to this service.

Walking promotion: Walk 21 Charter partnership with Western Sydney Councils.
CREATING ENVIRONMENTS TO SUPPORT HEAL

This strategy contains many recommendations for improving food environments to encourage healthy eating and promoting a healthy built environment to support physical activity. New initiatives are proposed for WSLHD.

ADDRESSING PREVENTION IN HIGH-RISK POPULATIONS

Raise the awareness of basic risk screening and increasing referrals to the Get Healthy Service, and increasing Bilingual Educator Diabetes Prevention Programs.

IMPROVING FOOD ENVIRONMENTS

Involvement in the Diabetes Prevention Alliance and Food Working Group.

Working with the LHD, schools, workplaces and community groups to promote healthy eating and water consumption.

FOSTERING A HEALTHY BUILT ENVIRONMENT AND OPPORTUNITIES FOR PHYSICAL ACTIVITY

Support the efforts of the five local governments in WSLHD to promote walking and physical activity in their locality through the Walk 21 Charter.

Work through existing public health/local government partnerships to implement additional specific strategies in Parramatta and Blacktown to address urban density, redevelopment and active transport connections.

MAJOR ENHANCEMENT OF EXISTING STATEWIDE PROGRAMS IN WSLHD

Expand the Get Healthy Service – Room for a major expansion of this program is possible.

Support implementation of the Get Healthy at Work Program across all agencies.

SCREENING

The results of the HbA1c screening within hospitals validates its adoption as ongoing practice and plans exist to continue screening within the hospital setting for opportunistic identification of high-risk patients.

Within the community, ongoing support for the identification of individuals at high risk of developing diabetes is provided by training courses for practice nurses, collaboration with Diabetes NSW and through the Healthy Workers Initiative.

This work builds on the experience gained through the completion of a screening program conducted from an ANPHA grant where 4000 residents were screened for their risk of developing diabetes in over 70 local venues. Knowledge gained regarding results from specific venues, individual CALD populations, engagement in LMP programs and retention within the programs is providing direction for subsequent screening efforts.

Those found at high risk are encouraged to follow up with their GP and to participate in the Get Healthy telephone coaching. GP training will be ongoing to support the testing of individuals and the provision of a series of options for a variety of local, online and telephone lifestyle modification programs.

Particular emphasis will be placed on high-risk populations through basic risk screening and increasing referrals to the Get Healthy Service, and increasing Bilingual Educator Diabetes Prevention Programs.
STUDENTS AS LIFESTYLE ACTIVISTS (SALSA)

SALSA is a unique primary-prevention peer-educational program for high school students. The program motivates and guides young people to make better dietary choices and to be more physically active. Key to the SALSA program’s success is the strong partnership between Health and Education sectors which has supported the program since its development a decade ago.

A key component of the SALSA Program is when students create a school action plan for a more supportive environment within their school. The program targets the most disadvantaged communities, where overweight and obesity are most prevalent. It is currently running in 19 Western Sydney high schools and is easily scalable.

Australian adolescents remain a relatively under-served group in the provision of nutrition/physical activity programs targeting obesity and chronic disease prevention.

The positive reception of the SALSA program in high schools is evident through its recognition in 2014/15. This includes the Western Sydney Local Health District Quality Awards for the categories of: Building Partnerships, Community Choice, Innovation and Excellence; from the Australian Medical Association for Excellence in Health Care Award; and the United Nations Inter-Agency Technical Task Team on Young People in the Middle East and the North Africa (MENA) region as a “good practice program for youth”.

I learnt that if you put your mind to it, you can achieve anything.

Year 10 peer leader, 2015
I learned the importance of being healthy and passing on knowledge.

Year 10 peer leader, 2015

My involvement is SALSA has been extremely rewarding. ...I got involved with SALSA to enable these students to take control of their health early on in life.

University student educator, 2015
MANAGEMENT

Type 2 Diabetes is best managed by general practice and allied health in the community, leaving the specialised hospitalised services to manage the more complex cases of type 2, type 1 and gestational diabetes. However, when the patients need specialist care or hospitalisation, the journey should be better connected. In Western Sydney, we have developed an innovative approach involving a more integrated healthcare system that includes the components described below.

The development of a health-care system that delivers better care to patients in the community supported by improved linkage with hospital-based care when needed has been a major focus. This is supported by building the eHealth systems and the capacity of healthcare workers to better manage diabetes. This is a coming together of routine healthcare with the Western Sydney Integrated Care Demonstrator project and the WSD initiative to build an enhanced model of care. This model of care is consistent with, and an exemplar for, the Agency for Clinical Innovation (ACI) new diabetes model of care.

Seven reinforcing components of Enhanced Management Program
WESTERN SYDNEY DIABETES GATEWAY

Digital technology is transforming the healthcare landscape by empowering patients to track, manage and improve their health, and the Western Sydney Diabetes Gateway app is at the forefront of this change. As patients can at best only see their GPs for a few hours a year, the Gateway app complements clinical care by providing education and support for patients on a daily basis to encourage self-management of their condition. This innovative consumer portal is unique in that it links patients with the core health care system and incorporates their data into their care plans, thus improving both self and clinical management. This is coupled with ongoing two-way communication between the patient and their GPs, allowing patients to share data updates and goals and receive results and feedback – all from their smartphone or tablet.

PATIENT BENEFITS

This app is expected to greatly benefit those in the most need especially populations that are poorly educated, have poor health literacy, and lower socio-economic backgrounds. Feedback and advice on their clinical data, including alerts to seek medical assistance, as well as reminders to update their data. This will increase compliance and improve medication use.

An added incentive is patients will be aware that their GPs are monitoring their results. Patients can use the app to receive reminders for regular checkups. The app allows the patient to receive:

• Reminders to fulfil prescriptions at a selected time and nominated pharmacy through eRx Express.
• Feedback on their progress towards predetermined goals, as well as management and motivational support on a regular basis will improve self-monitoring.
• As an example, a drop off in exercise may prompt a check on whether the patient is unwell.
• Relevant educational material specific to their condition and results will improve their health literacy.
• Enhanced control through coordination of healthcare provider services – the ability to receive reminders on health services: from foot and eye checks, to care plans and medication management.
ENHANCED MANAGEMENT
BY GP AND ALLIED HEALTH

CASE CONFERENCING

To build the clinical skills, confidence and capacity of GPs and practice nurses to better manage diabetes in primary care, the Blacktown Hospital Outpatient Diabetes Specialist and Credentialled Diabetes Educator visit general practices to deliver Joint Specialist Case Conferences (JSCC).

More than 600 patients participated in the case conferences involving more than 100 GPs from 35 different general practices. Early evaluation of this program found that three to six months post-session, the patients showed a clinically significant reduction in HbA1c (0.87%), along with beneficial effects on systolic blood pressure, weight and lipid profile.

GPs reported the program improved the relationship and communication between the GPs and specialist. While the majority of GPs reported more confidence in managing diabetes, this program is expected to decrease referrals to specialist services.

This work is further enhanced by the WSPHN practice support team ongoing activity to to build practice capability and capacity including aligned to the Patient Centered Medical Home principles.

Case Conferencing is expanding to the majority of general practices in Western Sydney.

“The mere fact of discussing such complex cases with Glen (endocrinologist) proved to be invaluable. We were able to exchange ideas, Mx strategies and it was very welcoming, most of all the VIP (the patient) being included in the management was the crowning glory!”

Dr S Seelan
Bridgeview Medical Practice GP

98% of clinicians surveyed recommend Diabetes Case conferencing to a colleague
Save a Leg

Every 30 seconds, a lower limb is lost to diabetes somewhere in the world! Diabetes is responsible for 60% of all amputations in Australia, and it has one of the worst diabetes-related lower limb amputation rates in the developed world, with nearly 20 per 100,000 people with diabetes losing a limb compared to an average of 12 per 100,000 elsewhere. More recent data suggests that diabetes-related amputations have also increased in Australia by over 30% for the period between 1998 and 2011.

Diabetes-related foot complication results in a longer average length of hospital stay when compared to all other diabetes-related complications.

Amputations and foot ulcers are consistently the second and third most expensive acute diabetes complications respectively to treat in terms of both hospital and out-of-hospital costs.

Furthermore, mortality data associated with diabetes complications suggests foot complications are the second leading cause of diabetes-related death second only to cardiovascular disease.

WSLHD has fragmented diabetes foot services and inconsistent foot screening and risk stratification.

Western Sydney Diabetes Initiative, through this redesign project, is aiming to:

- Increase screening rates of patients with diabetes and reduce the variation of screening practices in Western Sydney
- Increase patient awareness of diabetic foot complications and to empower the patient to seek active treatment in a timely manner
- Increase timeliness and appropriateness of complexity of referral of patients into Hospital Podiatry Services in accordance with foot screening (risk stratification)

A 60-second diabetic foot screening tool was developed and educated patients, nurses and clinicians on the importance of using the tool and conducting regular foot checks at least annually. Electronic referral templates and clinical pathways were also developed, to facilitate the improvement of timely access to hospital foot services.
COMMUNITY EYE CARE

Diabetic eye disease is one of the most common complications of diabetes. Diabetic retinopathy is one of the major causes of blindness and vision impairment in Australia. More than a third of people with diabetes will develop diabetic eye disease in their lifetime. Almost everyone with type 1 and more than 60% of those with type 2 diabetes will develop some form of diabetic eye disease within 20 years of diagnosis.

Currently, up to 50% of Australians with diabetes do not undergo eye examinations at the recommended frequency of every two years.

The Western Sydney Diabetes Eye Screening Project is developing a standardised referral system with adequate medical information for GPs to provide to optometrists.

Following screening, a standardised comprehensive diabetes eye screening report has been developed in consultation with the Westmead Eye Service and ACI C Eye C project team for optometrists to report back to the GP.

The use of electronic referral system using Linked EHR and incorporating the standardised referral system from both general practice and optometrists will be available. This will facilitate easy tracking of reports, which will help GPs to accurately update the diabetes annual cycle of care of their patient thus improving health outcomes, and potentially benefitting the general practice by increasing Service Incentive Payments.

Updating the referral system process in HealthPathways would provide an easy access to the referral process, and updating the NHMRC guidelines in HealthPathways will increase awareness of the diabetes eye screening and management as per the guidelines.

Western Sydney Diabetes Community Eye Care Project

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<tr>
<td>Preferred Optometrist</td>
<td>Westmead Eye Clinic</td>
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<td>Diabetes annual cycle of care</td>
<td>Injection</td>
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<tr>
<td>Annual primary assessment</td>
<td>Active treatment</td>
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- Laser
- Secondary assessment and triage
HEALTHPATHWAYS

HealthPathways is a web-based information portal supporting primary care clinicians to plan patient care through primary, community and secondary health care systems within Western Sydney. It is like a ‘care map’, so that all members of a health care team – whether they work in a hospital or the community – can be on the same page when it comes to looking after a particular person.

HealthPathways is designed to be used at the point of care, primarily for General Practitioners but is also available to Hospital Specialists, Nurses, Allied Health and other Health Professionals within Western Sydney.

BUILDING PRACTICE NURSE CAPACITY

Practice Nurses can play a pivotal role in prevention of, and management of diabetes in general practice leading to improved patient outcomes, improved team work and revenue for the practice. Education was given to them in the form of short courses to help them better understand their role in identifying diabetes, when to refer patients to specialist services, and providing basic self-management diabetes education. It also aimed to give the nurses confidence to educate their patients about diabetes progression and the importance of timely medication.

LinkedEHR

LinkedEHR, developed by WSPHN, is an electronically shared care plan that connects patients’ clinical records with members of their multi-disciplinary team (MDT). The care plan is created by a GP for patients with a chronic disease and is based on the diagnoses held in the GP’s Clinical Management System (CMS).

LinkedEHR records goals, targets, referrals and activities for each and all diagnoses so patients will receive the right level of care required to manage their chronic condition(s). The referred activities are updated by the recipient in real time and GPs see all updates.

LinkedEHR, HealthPathways and the PCEHR/My Health Record are integrated to provide many clinical management and referral resources to support the goals and activities for each patient’s care plan.

Integration with Western Sydney LHD is currently taking place to give amongst many other features, direct access to a patient’s care plan via Cerner – the hospital’s Electronic Medical Record (EMR); to send from LinkedEHR comprehensive NEHTA standard eReferrals to WSLHD hospital clinics and dashboards for Care Facilitators.
COMPONENTS

As the more integrated enhanced model of care for diabetes evolves in our district it is providing an opportunity to also change the in-hospital and out-patient diabetes services and connect them better with the community care. Some of these opportunities are described below.

ENHANCED MODEL OF CARE IN HOSPITALS

A pilot study was conducted in 2014 under the guidance of the Western Sydney Diabetes initiative. The results confirmed the high rate of diabetes and is now the basis for recommending HbA1c testing as a routine approach. It will be part of an enhanced diabetes model of care which will enable patients with diabetes to be identified when admitted through ED for more appropriate hospital management.

The blending of this program with the current in-hospital diabetes service and the Western Sydney Integrated Care demonstrator project described in the next section allows better hospital management of patients with diabetes and with the more comprehensive community-based part of the service.

Since 40% of patients admitted from ED have diabetes, it is important that the capacity of all clinical services to better manage diabetes be enhanced. This is currently being piloted with the Mental Health Service (especially patients requiring Clozapine and more long-term follow-up) and geriatric and rehabilitation services. Endocrinologists and Diabetes Educators are seeing patients in joint consultation with care teams from these services to build their capacity to manage patients with diabetes – similar to the GP case conferencing approach.

This is working well and will soon be extended to other services. Patients and general practices will be notified of the result of HbA1c testing allowing for earlier lifestyle coaching and better management of diabetes in the community. A collaboration with NSW Health ‘Get Healthy’ program is being developed to encourage patients with pre-diabetes and recently diagnosed diabetes to enrol in this program.

OUT-PATIENT CLINICS

The role of the Diabetes outpatient clinics at BMDH and Westmead Hospital are changing. Many of the patients with type 2 diabetes who have been reviewed every six months or annually have been discharged back to routine care by general practice. This is made possible by all the capacity building especially around HealthPathways and Case Conferencing for local GPs.

The more specialised management of more complex cases has remained especially for type 1 diabetes, gestational diabetes and patients with advanced renal, foot, vascular and cardiac disease. A special effort has been made to build the capacity of psychiatrist and mental health hospital based clinicians to better manage diabetes in the Mental Health clinics.

The Diabetes outpatient clinics have been adapted to become the Rapid Access and Stabilisation clinics for the Integrated Care demonstrator project.

Enhanced model of diabetes care in hospitals: ED, admitted and ambulatory services

Specialised Consultation and Enhanced Hospital Care
The default now being that most patients in the type 2 complex management clinics would be enrolled in Integrated Care.

Patients now identified with poor diabetes control or just diagnosed with diabetes, are being followed-up on discharge in the clinic for a short time prior to discharge to GPs for ongoing care.

The diabetes clinics have expanded their multidisciplinary team to include more diabetes nurse educators, podiatrists, dieticians and in the future, psychologists and exercise physiologists. A team management approach to OPD management exists with receptionists, OPD nurses and the clinical team meeting regularly to make the experience work best for the patient, achieve the best clinical outcomes and work efficiently and cost-effectively.

A general practice support line promoted through case conferencing and the Integrated Care program is active and being used several times a week to avoid unnecessary admissions and continue to build general practices skills in diabetes management.

**DIABETES EDUCATION SERVICES**

The Diabetes Education team is multi-skilled and able to provide comprehensive diabetes education on all aspects of diabetes management by Credentialled Diabetes Educators or educators working towards credentialing, and dietitians at both Blacktown and Mt Druitt hospitals.

The education is tailored to the patients’ needs, taking into account the type of diabetes and co-morbidities, health literacy, need for healthcare interpreters and stage of disease process.

The diabetes educators provide education for inpatients and outpatients referred by their GP or endocrinologist. Outpatient education can be delivered in a group setting for people with type 2 diabetes or women with gestational diabetes if the patient is eligible, or on an individual basis.

**BARIATRIC SURGERY**

When primary prevention fails, surgery has a modest but critical role in managing type 2 diabetes with and without associated obesity. About 75% of patients attending Westmead Hospital Obesity Clinic meet current criteria for bariatric surgery. One third of patients seen need bariatric surgery because it is the only treatment that will allow them to lose enough weight to improve their comorbidities.

Metabolic surgery is readily available for the privately insured, but the majority of patients who require it are of lower socioeconomic background. We know that 65% of patients who attend the Clinic cannot afford surgery if they must pay for it. Until recently the bariatric surgery standard was lap banding which required hospital admission for implantation of a $4,000 device and lifelong follow up.

The current standard operations for severe obesity with co-morbidities are now laparoscopic sleeve gastrectomy and gastric bypass, which require a skilled surgical team performing a surgical procedure, but no expensive implant.

Surgery is highly effective in producing durable glycaemic control and disease remission with reductions of 31% to 88% in diabetes related mortality. With appropriate patient selection by an MDT process the cost of surgery to the LHD can expect to be recovered in 1-2 years from reduced medical costs.
ENROL PATIENTS IN INTEGRATED CARE

The Western Sydney Integrated Care Program (WSICP) framework aims to bring together a range of existing initiatives, programs and services to provide seamless care for people to address their healthcare needs across the primary care, community and specialist settings. The goals of the WSICP are to improve the care experience for patients, carers, families and providers, improve the health of the population and achieve better use of health resources by providing the right care in the right setting.

The following services and initiatives are included -

• Connecting Care
• HealthOne
• The Partnership Advisory Council with WSPHN
• HealthPathways
• Western Sydney Diabetes Initiative
• Heart to Heart Program, and
• NSW Integrated Care Demonstrator

The WSICP also partners with a range of Western Sydney PHN (WentWest) initiatives including:

• After Hours GP Services
• Access to Allied Psychologists Services (ATAPS)
• Partners in Recover (PIR)
• Close The Gap (CTG)
• Care Coordination & Supplementary Services (CCSS)

THE WESTERN SYDNEY INTEGRATED CARE DEMONSTRATOR

As part of the NSW Integrated Care Strategy announced by the Ministry of Health in 2014, Western Sydney is one of three lead demonstrator sites across NSW engaged in developing an innovative, system wide and sustainable service model for providing coordinated and integrated care services. The LHD is required to deliver several key achievements for this initiative, which has an initial focus on the management of chronic disease. The Western Sydney Integrated Care Demonstrator is a partnership initiative with the Western Sydney PHN (WentWest). This initiative will provide a new model of care for the management of a chronic disease.

To be eligible for this service, patients must have at least one chronic disease of diabetes, COPD, or congestive cardiac failure/CAD, and who are risk stratified as being at significant risk of requiring hospital care.

Patients within this cohort will be enrolled by either primary care, community or hospital specialist teams, depending on the point of first contact and registered in a patient registry. A range of coordinated interventions and clinical services will be implemented to improve the health care management of these patients. Services will be provided by a range of health professionals, including Primary Care teams, Care Facilitators and Multidisciplinary Teams (MDT), in an integrated fashion.

The formal communications link between the care providers will be a dynamic, accessible Shared Care Plan, which will be web enabled and have input from all care providers.

THE ROLE OF PRIMARY CARE

The Primary Care Team will consist of GPs, practice nurses, and allied health providers where patients can expect to receive preventive and holistic care, ongoing chronic and acute care management and referral and ready access to community, specialist, and acute services when needed. Services to be provided by the Primary Health Care Team include patient self-management support, health coaching, care planning, care navigation, multidisciplinary team care planning and case management as their chronic disease progresses and care becomes more complex. Patients will be managed and monitored by their GP supported with the assistance of community based Care Facilitators and specialist teams.

The primary care goals will be to maintain good health, prevent acute or chronic deterioration of the patient’s condition, identify any deterioration promptly, provide immediate intervention, and determine when specialist services are required. The patients’ health status and care plans will be regularly reviewed by the Primary Care

SPECIALISED CONSULTATION AND ENHANCED HOSPITAL CARE
Role of Community Services

The new model of care will be integrated with current community based chronic disease services including HealthOne and the Connecting Care Program to build capacity in the system to support care co-ordination, case management and direct clinical services (e.g. wound management, palliative care, incontinence) for those with chronic disease. Care Facilitators will work closely with chronic disease nurses, HealthOne and General Practice Liaison Nurses (GPLN’s) to facilitate appropriate community based care. Similarly, they will facilitate referral to level 2 and 3 care of the Connecting Care program when appropriate home based reviews and direct service coordination is necessary.

Role of Specialist Services

The Specialist Services will contribute to the integrated care services by providing the following new services:

- Rapid access to specialist assessment and treatment
- Transition patient care back to primary care and the community setting following engagement with the hospital, facilitated by the development of multidisciplinary care plans and the involvement of care facilitators
- Support patients and GPs to reduce the need for acute hospital presentations
- Build capacity in primary care to better manage the complex patients

The Specialist Teams will provide rapid evaluation of any acute deterioration, through either intervening promptly to avoid hospital admission or expediting admission to hospital as required. The pathway for referral for these patients will be via the Rapid Access Specialist Service thereby bypassing unnecessary ED presentations.

Specialist Teams will also provide stabilisation services/clinics as required and work with the patient’s GPs and Care Facilitators to transition these patients from the hospital environment back to primary care and the community setting.

Key components of model:
- Focus on supporting Chronic Disease Management in General Practice and the Community
- Patients + GP practices registered for ICP
- Disease cohorts – COPD, heart failure, coronary artery disease, diabetes
- Patient cohorts – from GP and hospital
- Dynamic Shared Care Planning
- Whole person / PCMH approach
- Care facilitators – registered nurses supporting care planning and delivery
- Risk stratification – targeting the care
- Whole person / PCMH approach
- GP Support Line
- Specially Rapid Access and Stabilisation service
- Building capacity in Primary Care/General Practice
- Optimising access to Community Based Services
- GP Support payments

Supported by enablers and tools:
- HealthPathways
- Linked EHR and Cerner
- GP Support payments

Primary Care
- Patient-centred medical home

Demonstrator – Model of Care

Integrated Hospital Specialist Services
- GP support line
- Rapid access and Stabilisation service
- Building capacity in Primary Care Service

Care facilitators
- Connecting Care
- HealthOne
- Closing The Gap
- Community Health
- CERNER – Linked EHR

Team. The Patient Centred Medical Home (PCMH) concept advocates enhanced access to comprehensive, coordinated, evidence-based, interdisciplinary care. The GP model of care to be provided to patients eligible for Integrated Care is based on the Patient Centred Medical Home Model (PCMH), which sees a focus on the provision of whole person, accessible and comprehensive care. This means a focus on the patient rather than their presenting problem.

For Integrated Care patients, this means a commitment to monitor and manage the patients and their health record over time, to maintain a dynamic shared care plan for the patient, and to work with the patients Care Facilitator to integrate the patients’ care with other relevant health care providers.
ILLUSTRATIVE RESEARCH AREAS

EPIDEMIOLOGY

• Mapping diabetes prevalence, and its complications, in relation to social and geo-physical causative factors (2016 NHMRC Project Grant to UWS)

CAUSATION

• A candidate gene for type 2 Diabetes and obesity (Glut-1) first identified in a Western Sydney family. A comprehensive assessment of gene-disease association (UWS and WSLHD)
• A longitudinal cohort study of women and their babies after Gestational Diabetes, determining the factors associated with progression to type 2 Diabetes (UWS and WSLHD)

MANAGEMENT

• A randomized trial of diagnosis and management strategies for gestational diabetes (2016 NHMRC Project Grant to UWS)
• Trial of different insulin strategies to optimize diabetes control for older patients (Sanofi Grant for Investigator initiated research)
• Optimizing treatment and identifying obstetric risks for women with type 1 and type 2 Diabetes in pregnancy (WSLHD and U Sydney, PhD project, NHMRC scholar)
• 2 current international multi-centre trials of new diabetes drugs (Pharma sponsors)

PREVENTION

• Trialing a strategy for modification of diet and lifestyle to prevent Gestational Diabetes in our highest risk population - women of Indian Sub-continental background (NNRDS Grant)
• Preventing metabolic complications of cancer treatment using exercise and diabetes medication (Current UWS funded PhD project, 2016 NHMRC application)
• Identifying factors that cause diabetes complicating anti-psychotic drug treatment (WSLHD and UWS)
Addressing the challenge of diabetes will be a major undertaking for Australia as it is for the rest of the world. Western Sydney, in particular, faces some daunting issues as the social determinates of health that promote healthy eating, active living and social inclusion are not working favourably to prevent diabetes and its progression.

Obesity has become the norm and the majority of patients seeking treatment for serious illness in our hospitals, either have diabetes or pre-diabetes. More than a third of people with diabetes do not know they have it. There is a lack of awareness about how serious this threat is and how it will lead to serious health complications if left undiagnosed or unmanaged.

If we can encourage adults to lose 4 kilograms on average, we could turn the diabetes risk clock back 20 years and turn our high-risk red diabetes hotspot into blue and below the NSW state average. If this ‘hotspot’ is not addressed, within a decade it will cause an unsustainable economic and societal burden on the state’s healthcare system. Achieving this shift requires diabetes prevention and management to become everybody’s business.

We are engaging non-government organisations, the private sector, hospital specialists, general practitioners, allied health and pharmacy to join in. We are utilising digital technology such as eHealth and smartphone apps to help patients, doctors and other healthcare providers to share information and better manage diabetes and prevent complications.

We want Western Sydney to move from being a hot spot for diabetes to being an exemplar on how to tackle this issue at a local community level. In alignment with national and state strategies addressing diabetes, Western Sydney will become a real world example for successful prevention and management of diabetes.

We invite you to help achieve our goal and be a part of our journey.

The Western Sydney Diabetes initiative is mobilising key leaders and champions in health and beyond to come together to recognise and address this problem. We are engaged with federal, state and local leaders to join the effort.

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