

## **WA COUNTRY HEALTH SERVICE RESPONSE**

### **The role of diet in type 2 diabetes prevention and management**

#### **Background**

- On 30 August 2018 the WA Country Health Services (WACHS) received an email from the Education and Health Standing Committee (E&HSC) of the Western Australian Legislative Assembly informing the establishment of an enquiry into 'the role of diet in type 2 diabetes prevention and management' and inviting WACHS to make a submission addressing specific terms of reference.
- Clarification was sought in regards to the invitation and the E&HSC is seeking information on the topic of both a general nature and more specifically about services and interventions offered, issues specific to WACHS populations and recommendations for future action.

#### **Context**

There is a high prevalence of type 2 diabetes across all WACHS regions, especially amongst Aboriginal populations. Type 2 diabetes is characterised by fasting hyperglycaemia as a result of insulin resistance and defects in insulin secretion. Obesity is the major risk factor for the development of the condition and a number of studies have shown that lifestyle modification (diet and exercise) can significantly prevent the progression of glucose intolerance (prediabetes) to diabetes by up to 58%. As such, clinical guidelines prescribe lifestyle modification as first-line treatment for type 2 diabetes and indeed throughout the management of the disease process. Therefore, it is clear that dietary intervention is a critical component in the prevention and management of type 2 diabetes.

People at risk of type 2 diabetes can delay and even prevent the condition by:

- Maintaining a healthy weight.
- Regular physical activity.
- Making healthy food choices.
- Managing blood pressure.
- Managing cholesterol levels.
- Not smoking.

#### **a) Cost of type 2 diabetes to the community**

Type 2 diabetes is an increasing health issue, which presents a significant personal, community and health cost to country WA. The estimated burden of diabetes is in excess of \$100,000,000 per annum for WACHS regions alone (based on disease cost estimates and current prevalence).

Living in a rural location, ageing, being Aboriginal, from a culturally and linguistically diverse (CALD) background, or having a mental health condition, all increase diabetes risk. Country WA is characterised by a significant aging population, pockets

of CALD groups, high levels of mental health consumers and nine 9%(49,262 people) of the population is Aboriginal.

Recent diabetes reports have highlighted limited access to appropriate and timely services for prevention and management of type 2 diabetes, (including for at-risk adults, children and adolescents, Aboriginal communities, ethnic groups at greater risk of developing diabetes) particularly those living outside of metropolitan Perth or a major regional centre.

High levels of hospitalisation for people with type 2 diabetes (both as a primary or secondary diagnosis) across large areas of country WA, underlines the broader impact and cost of diabetes to the community. This has the highest impact on vulnerable populations, such as Aboriginal and CALD populations.

In 2008-2012 diabetes complications were a leading cause of potentially preventable hospitalisations, with regional WA rates above or significantly above the state rate whilst regional capacity for diabetes education and dietetic services remained limited.

In country WA the burden of type 2 diabetes related costs and impacts is magnified by greater health inequity in comparison to metropolitan populations and a lack of equitable access to services. Regionally based diabetes education, dietetic and / or healthy lifestyle services are limited by workforce shortages, funding inequities and distance, placing extensive travel demands on consumers and clinicians, to enable equitable access.

Additionally access to primary health care, which is the cornerstone of type 2 diabetes prevention and management is limited in rural and remote regions. 10% of the regional and remote population has to travel more than one hour to access a GP compared to just fewer than 2% of people living in major cities. Subsequently, patterns of access are different when compared to other parts of the State, with lower levels of GP, and allied health attendances and higher levels of hospital attendances. This may lead to people delaying seeking care until their condition is more acute.

The link between health inequity and socio-economic factors is well accepted, meaning that the higher a person's socio-economic status then the greater the likelihood that they will be healthy. Based on the 2011 ABS Census all seven WACHS health regions have areas with low Socio-Economic Index Area scores. The increasing prevalence of modifiable risk factors including poor diet and being overweight or obese, which are generally related to poor socio-economic circumstances and which contribute to the onset or exacerbation of type 2 diabetes, will continue to place an increasing and substantial burden upon WACHS populations and the WA health system.

The burden of type 2 diabetes is compounded by a significant ageing population, meaning people with chronic conditions are now also living longer. The complexity of this geographical dispersion and its associated issues is evidenced by the fact that the Kimberley region has one of the fastest growing older populations (although the numbers are smaller than other WACHS regions), whilst the south west region has the largest population of people aged 65 and over.

## **b) The adequacy of prevention and intervention programs**

WACHS covers a large geographical area, approximately 2.5million square kilometres, encompassing 7 regional health services. Many areas are sparsely populated with a country WA population of 551,100, concentrated around regional centres. This creates a challenging environment for health service delivery for those with ongoing needs such as type 2 diabetes and other chronic conditions co-morbidities. People with diabetes who live in rural and remote communities may experience geographical barriers that limit their access to services closer to home.

A review of the national and international literature and analysis of regional health profiles and health service usage in country WA showed consistently poorer health outcomes for people with diabetes living in regional and remote areas. Limited access to timely and appropriate service in country WA, coupled with the requirement to travel significant distances to regional centres or metropolitan Perth was shown to contribute significantly to these poorer consumer health outcomes.

The prevention and management of type 2 diabetes is a key focus of the *WACHS Chronic Conditions Prevention and Management Strategy 2015-202* with modifiable risk factors also a focus of the *WACHS Healthy Country Kids Strategy 2016-2019*. Accordingly a number of prevention and intervention programs are currently being delivered in WACHS regions that target modifiable risk factors such as poor diet or being above a healthy weight and / or support diabetes education and self-management, these include but are not limited to:

- Community child health services in WA now screen all children at two and four years of age for healthy body weight using Body Mass Index (BMI) screening tool.
- In schools, health service staff partner with school staff to provide primary prevention that encourage active play and physical activity, healthy meals, snacks and drinks, and managing screen time.
- WACHS partners with Food Bank WA to deliver Food Sensations sessions to School Breakfast programs and schools and adult groups across country WA. Food Sensations aims to improve knowledge, attitudes and skills around healthy eating and cooking.
- WACHS regions support the Star Canteen Accreditation Program 2 (StarCAP2), a voluntary program that awards schools operating healthy canteens by using a star rating basis of three, four or five stars, similar to the rating standard used in other areas of hospitality and tourism.
- A WACHS funded proof of concept pilot in country WA of The Better Health Program (face-to-face and online modalities) - an evidence-based interactive healthy living program to support overweight and obese children (2-4 & 7-13 years) and their parents /carers will commence in fourth term 2018 to determine efficacy and ensure parity with metropolitan Perth where Department of Health funds the face-to-face (7-13 years) program for metropolitan children only.
- WACHS partners with other metropolitan based Health Service Providers, non-Government organisations and Aboriginal Community Controlled Health Services (ACCHSs) in regional WA to provide healthy lifestyle and chronic conditions management programs under the Aboriginal Health Programs for the following Service Outcome Areas:

- Outcome Area 3: Aboriginal people receive services that improve their knowledge and practice of healthy lifestyle behaviours.
- Outcome Area 4: Aboriginal people have increased access to chronic disease screening services and care planning.
- WACHS also partners with ACCHSs in metropolitan and regional WA to deliver primary health care / healthy lifestyle programs under the Aboriginal Comprehensive Primary Health Care Program for the following Service Outcome Areas:
  - Outcome Area 1: Aboriginal people engage with culturally secure, evidence-based primary health care services that transition across the life course to support improved health outcomes
  - Outcome Area 2: Aboriginal people engage with evidence-based prevention and early intervention initiatives that promote the choice of healthy lifestyles to support improved health outcomes.
- WACHS Pilbara in partnership with EON Foundation deliver the Pilbara Healthy Eating and Lifestyles program, a finalist in the 2018 WA Health Excellence Awards, a holistic, sustainable and multi-faceted nutrition education program to five remote Aboriginal communities across the Pilbara.
- The Healthy Eating Activity and Lifestyle (HEAL™) program which supports development of lifelong healthy eating and physical activity behaviours is offered in a number of WACHS regions including the Great Southern, South West and Wheatbelt regions.
- WACHS South West is collaborating with Diabetes WA to pilot the Let's Prevent Program - a healthy lifestyle education program to help people with lifestyle related chronic conditions reduce their risk of developing type 2 diabetes, heart disease and stroke and associated obesity.
- WACHS collaborated with Diabetes WA on the delivery of DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) across country WA with one of the key aims to support participants to 'take steps to lose weight'.
- All WACHS regions provide stakeholder involvement to the LiveLighter state-wide campaign which encourages adults to lead healthier lifestyles - to make changes to what they eat and drink, and to be more active. LiveLighter is funded by the Department of Health and run by the Heart Foundation in partnership with the Cancer Council WA.
- The Diabetes Telehealth Service, recipient of the WA Health Excellence - Director General's Award in 2017 is collaboration a collaboration between Diabetes WA, WACHS and WA Primary Health Alliance, and provides diabetes consumer and clinician education and clinical support across country WA, Endocrinology and Gestational diabetes service have recently been added. Nutrition and physical activity support and obesity management is a key deliverable of the service.
- The WACHS Chronic Condition Self-Management Upskilling Program sponsors and supports clinicians from across country WA to apply the evidenced based

Flinders and Benchmark consumer-centred coaching with consumers, including those with or at risk of type 2 diabetes.

- WACHS collaborates with the WA Primary Health Alliance – Country PHN to establish linkages with the Integrated Chronic Disease Care (ICDC) programs – for place-based self-management support and care coordination and referral to relevant virtual services including the Diabetes Telehealth Service and Health Navigator services.
- WA Healthy Options Policy is implemented in all WACHS facilities to ensure hospital kiosks, vending machines and ward trolleys provide food and drink items that meet the nutritional requirements of the Policy; 50% green, 30% amber and 20% red. Annual compliance audits allow monitoring of policy.

Whilst many of the above interventions are improving service access and health outcomes for country consumers, due to funding limitations some programs, including the Diabetes Telehealth Service, Let's Prevent and The Better Health Program require additional funds to ensure service continuance beyond 30 June 2019.

Additionally the Australian Diabetes Strategy 2016-2020 outlines other potential areas of action that focus on healthy eating as a way of reducing modifiable risk factors and / or complications of type 2 diabetes. Potential focus areas in country WA that could improve the prevention and management of type 2 diabetes through dietary interventions with cross-sector partnership and collaboration include:

- Supporting health-promoting environments that encourage people to improve healthy eating and be more active;
- Embedding healthy eating into everyday life (e.g. workplaces, school and communities);
- Upskilling the WACHS and primary health care workforce to support people to make healthy food choices and be more active especially in remote and Aboriginal Community Controlled Health Services;
- Better coordination of regional type 2 diabetes services across primary, secondary and tertiary care to facilitate access to care and the necessary support services.

Like other parts of Northern Australia, attraction and retention of suitably qualified health staff to deliver prevention and intervention programs in rural and remote community's particularly inland areas is problematic.

Strategies undertaken to support the northern regions include:

- Grow your own, employing local people and offering scholarships and support to work in health services.
- Use of telehealth for service delivery and to offer staff working in isolated areas access to experienced practitioners and / or capacity building via professional development.
- Contracting out of services to local Non-government organisations and providing program support to deliver the services.

### **c) The use of restrictive diets to eliminate the need for type 2 diabetes medication**

Recent review of dietary and nutritional approaches for prevention and management of type 2 diabetes <sup>1</sup> suggests considerable evidence supports a common set of dietary approaches for the prevention and management of type 2 diabetes, however uncertainties remain. While adherence to dietary advice is a challenge, particularly for vulnerable populations, weight management is still a cornerstone in diabetes management, supplemented with new developments, including the potential for the remission of type 2 diabetes through diet and lifestyle changes.

Additionally research suggests that low carbohydrate diets as the preferred choice in type 2 diabetes is controversial. Some guidelines maintain that no single ideal percentage distribution of energy from different macronutrients (carbohydrates, fat, or protein) exists, but there are calls to review this in light of emerging evidence on the potential benefits of low carbohydrate diets for weight management and glycaemic control. The quality of carbohydrates such as refined versus whole grain sources is important and should not get lost in the debate on quantity.

Recognition that the focus of dietary advice should be on foods and healthy eating patterns rather than on nutrients is increasing. Evidence supports avoiding processed foods, refined grains, processed red meats, and sugar sweetened drinks and promoting the intake of core food groups that promote fibre, vegetables, whole grains, legumes, lean meat and plant based protein. Dietary advice should be individually tailored and take into account personal, cultural, and social factors.

High quality research is needed that compares energy restriction and carbohydrate restriction to assess effectiveness and feasibility in the long term. Consensus is needed on definitions of low carbohydrate nutrition. Use of the findings must take account of individual preferences, whole diets, and eating patterns.

WACHS clinicians and other health service providers across country WA provide individual and group based support and advice for: healthy eating for type 2 diabetes, healthy weight and weight-related behaviours, including weight monitoring, early feeding and children's diets however due to workforce limitations priority intervention is given to patients with complex needs based on clinical and health conditions that impacts on overall nutritional status.

To enable a greater focus on the use of diet and early intervention to manage type 2 diabetes in country WA an expanded and skilled place-based and virtual workforce is required across the inpatient, outpatient, community and primary health care settings.

### **d) Regulatory measures to encourage healthy eating**

There is evidence that increasing the local availability and affordability of food, especially fruit and vegetables, is an important way to increase healthy eating and prevent and manage chronic conditions, including type 2 diabetes. However, in many areas of regional and remote WA food security is an issue with consumers not

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<sup>1</sup> BMJ 2018; 361 doi: <https://doi.org/10.1136/bmj.k2234> (Published 13 June 2018)  
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having equal and reliable access to affordable, nutritious and good quality foods, with low socio-economic groups particularly disadvantaged by the cost of nutritious foods. This is most evident in remote Aboriginal communities where transport costs further increase the cost of nutritious food and disruption in food supply lines due to extreme weather events can limit access for many months of the year.

Food security can be largely addressed by good environmental, economic and social policy that tackles key enablers and barriers such as supply chain efficiencies and food prices. This requires a coordinated cross-sectoral approach at all levels of government and industry with input from the WA Health System Manager and WACHS.

At a regional level a number of initiatives are supporting consumers to make healthier food choices for example the Yalgoo Store Nutrition Label Project and Outback Stores WA. Outback Stores is a wholly Commonwealth owned company that is currently administered under the Prime Minister and Cabinet Portfolio. It aims to improve the health of Indigenous people living in remote communities by improving access to a nutritious and affordable food supply. Outback Stores is being implemented in eleven (11) remote communities in WA – Beagle Bay Community Store, Illawarra Store, Kundat Djaru Community Store, Mulan Community Store, Tjuntjuntjara Community Store, Uraro Store, Warman Roadhouse, Wirramanu Community Supermarket, Wungkul Store, Yilili, and Yungngora Community Store.

The South West Food Community Project identifies initiatives supporting healthy food availability, access and use in the South West region, and how these initiatives function as a system, as well as co-designing more effective ways to ensure healthy food availability, access and use for people in the region.

Systems-based policy actions may encourage healthy eating and change long term obesity prevalence particularly in children by targeting the food environment through nutrition labelling, healthy foods and food gardens in schools, restricted unhealthy food marketing to children, and fiscal policies to reduce consumption of harmful foods and sugar-sweetened beverages. Whilst WACHS and other country health service providers are working to support healthy food and food gardens in local schools, more needs to be done at a commonwealth and state level to affect system-based policy in these areas.

Reducing the amount of discretionary or 'junk' foods, many of which are high in added sugar, in the Australian diet is a key part of improving the nutritional health of the Australian population. The Dietitians Association (DAA) of Australia recently released a statement in support of a sugar-tax as part of comprehensive and coordinated approach to get Australians eating a better-quality diet to help address issues such as obesity and diet-related chronic diseases including type 2 diabetes. Research suggests that a 'sugar tax' is not enough on its own – work needs to be done on many fronts including improved labelling and support for consumers to make positive lifestyle changes.

The Department of Health WA Healthy Options Policy is an opportunity for Health Service Providers (HSP), including WACHS to ensure healthy foods are available to consumers and staff at WA Health hospitals, health services and workplaces. Previous audits suggest compliance amongst HSPs is variable with room for improvement across the board.

### **e) Social and cultural factors affecting healthy eating**

Social and cultural factors affect healthy eating in a number of ways. There is a strong, inverse association between socioeconomic factors such as occupation, income, and consumption of energy dense foods and obesity. A high level of socio-economic disadvantage in all WACHS regions together with higher cost and often poor availability of healthy food such as fruits and vegetables is a significant barrier to healthy eating.

Aboriginal people have a high prevalence of type 2 diabetes and overweight / obesity as well as a strong connection between culture and food. Health literacy can affect food choices and consideration should be given to ensure information on healthy eating is culturally appropriate and consumer driven.

Media and technology also affect healthy eating with research showing that children who watch television or engage in high levels of screen time are more likely to have unhealthy eating habits.

The success of dietary management requires health professionals to consider cultural and social beliefs, family, and communal networks of the patients. Active and effective dietary education may prevent the onset of diabetes and its complications.

### **f) Behavioral aspects of healthy eating and effective diabetes self-management**

Type 2 diabetes is a complex and burdensome disease that requires the person with diabetes to make numerous daily decisions regarding healthy eating, along with exercise and / or medication, to ensure effective and ongoing self-management. Many factors influence healthy eating behaviours including: food availability and cost, marketing, cultural and social values, family and living situations, emotions, nutrition knowledge and health literacy. Evidence-based healthy eating self-management programs address these influencing factors and support consumers to make behaviour changes to effectively manage their diabetes, examples include the previously mentioned DESMOND, HEAL™ and Let's Prevent Programs.

Evidence based chronic disease self-management models also address behavioural aspects of healthy eating and effective diabetes self-management. The WACHS Chronic Condition Self-Management (CCSM) Upskilling Program currently sponsors and supports 25 clinicians from across country WA to apply the evidenced based Flinders and Benchmark consumer-centred coaching with consumers, including those with or at risk of type 2 diabetes. To ensure these clinicians can effectively embed CCSM coaching into regional care pathways ongoing support will be required.

To support healthy eating behaviours and effective self-management for people living in country WA with type 2 diabetes - policy, funding and service planning needs to address high levels of food insecurity, poor healthy literacy associated with our most vulnerable populations including Aboriginal and CALD groups.