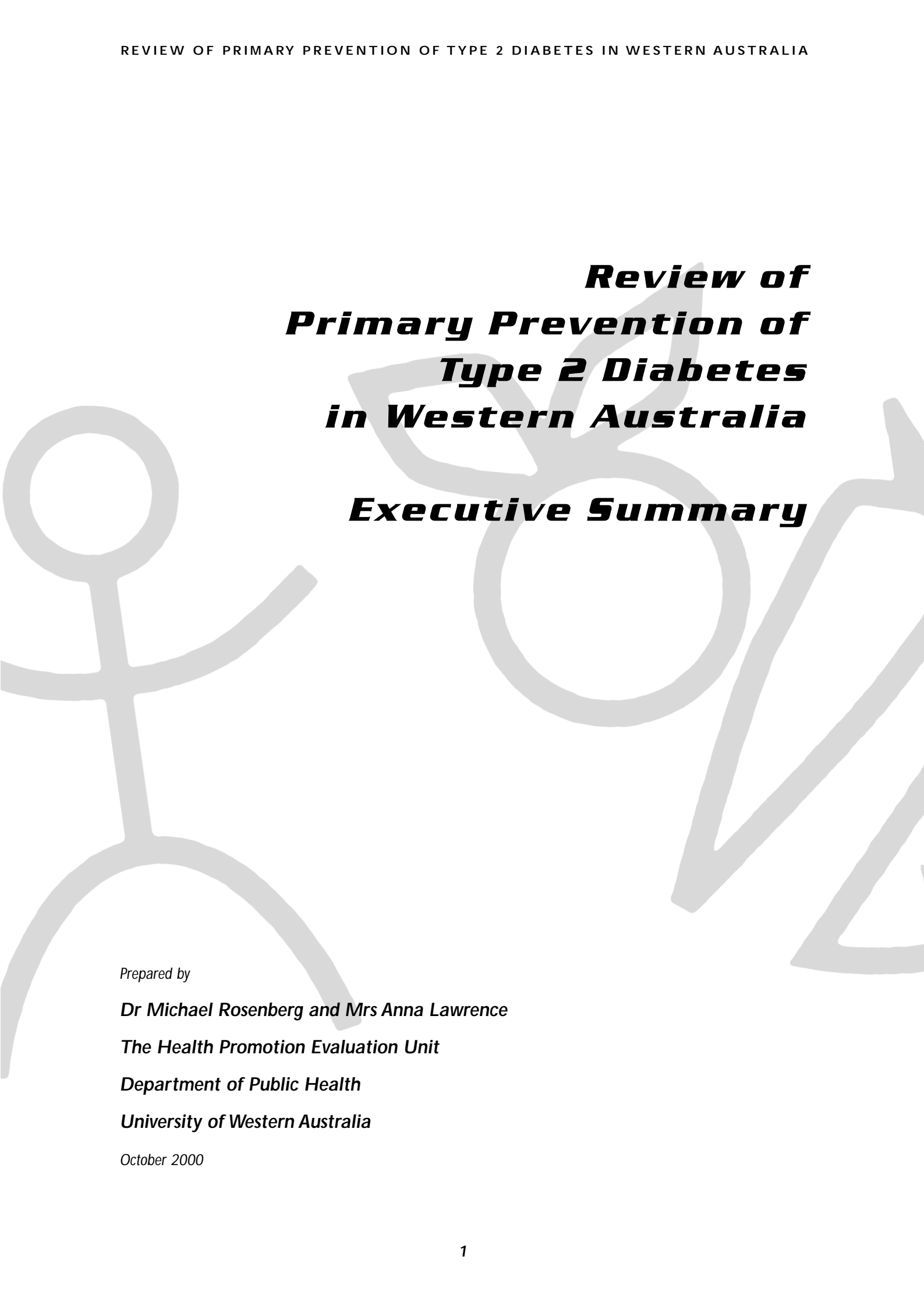


***Review of
Primary Prevention of
Type 2 Diabetes
in Western Australia
Executive Summary***



THE UNIVERSITY OF
WESTERN AUSTRALIA



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EXECUTIVE SUMMARY

Background

The Health Department of Western Australia (HDWA) commissioned the Health Promotion Evaluation Unit at the University of Western Australia (UWA) to review the prevalence and trends in risk factors associated with the onset of Type 2 diabetes both in Western Australia and nationally. In addition, the effectiveness of primary prevention interventions and activities that are currently being undertaken by Western Australian and national organisations were reviewed.

The data collection phase was from June 1999 to February 2000. Data was collected through published and unpublished sources, as well as through telephone and face-to-face interviews. A series of consultative interviews with public health professionals involved with the primary prevention of Type 2 diabetes were conducted to ensure wide representation.

Diabetes Mellitus - Type 2

Type 2 diabetes is a heterogeneous disorder due to a combination of genetic and environmental factors adversely influencing glucose metabolism. This heterogeneity may be reflected not only in the degrees to which impaired pancreatic b-cell function and insulin resistance may be present, but also in the degree to which environmental and genetic factors may contribute. The strongest predisposing factors for Type 2 diabetes are obesity and a family history. While there is continued debate on whether insulin resistance is the main genetic factor associated with Type 2 diabetes, or whether there is a genetic predisposition for the obesity generally associated with glucose impairment, several studies have found that weight loss is capable of completely normalising insulin sensitivity in obese patients.

Directions in Primary Prevention

Primary prevention programs aimed at long-term weight control and lifestyle modifications are likely to be most successful in delaying or preventing Type 2 diabetes. However, it has been acknowledged that very few Type 2 diabetes primary prevention intervention trials have been conducted with few published results available. Amongst those published, approaches targeting both high-risk people and the general community have demonstrated positive results in the primary prevention of Type 2 diabetes. Presently, the best guide to the potential benefits to be gained from Type 2 primary prevention intervention programs can be learnt in community-based cardiovascular risk reduction trials, with large-scale community campaigns to promote physical activity having been conducted over the past three decades (Marcus et al. 1998). An early review of these programs and other community-wide programs to promote exercise reached the conclusion that the provision of a variety of physical activity facilities by various community organisations does enable people to be more active. Mass media appeared to be successful in promoting awareness and interest in exercising, but had not been shown to be successful in actually changing exercise behaviour (Iverson et al. 1985).

A review of 127 primary prevention physical activity studies was conducted by Dishman and Buckworth, 1996, concluded that behaviour modification interventions were more effective when compared with other approaches such as cognitive behavioural modification, health education/risk appraisal and physical education curriculum programs. In addition, mediated programs were more effective than face-to-face or combination programs. Physical activity programs that aimed to increase activity during leisure time of low to moderate intensity, in general community settings and unsupervised, had the most effect on behaviour change. Whereas programs that related to strength training and specific aerobic instruction were found to be least effective on behaviour change. Successful programs were associated with combined ages, group programs and healthy study participants (Sallis & Owen 1999).

Nutrition, Physical Activity and Tobacco Use

In Australia in 1996, the highest ranked factors contributing to the burden of disease were tobacco use, physical inactivity, diet and hypertension. In 1998, Codde and Unwin reported that diet-attributable disease accounted for nearly one fifth of all deaths in Western Australia. Furthermore, when accounting for lifestyle factor contribution to major disease categories, diet was found to be responsible for a greater proportion of all deaths than either tobacco or alcohol (Codde & Unwin, 1998).

Of the adult population 56% were overweight and 19% were obese. One-third of the population was either physically inactive or participating at inadequate levels for cardiovascular benefit. These figures parallel the increased prevalence of Type 2 diabetes in the Australian community. For example, in people over 65 years, the prevalence is approaching 10%, while in some Aboriginal communities the prevalence in adults was reported to be up to 30% (Australian Institute of Health and Welfare & National Heart Foundation of Australia 1999).

In Western Australia, the prevalence of Type 2 diabetes in the 25-74 year age group was reported to have doubled between 1990 and 1995. This is amongst the highest in Australia and is particularly pronounced in the Kimberley region, where Aboriginal people comprise 45% of the region's population (Kimberley Public Health Unit - Derby 1997). The Kimberley population has the fourth highest prevalence of Type 2 diabetes in the World (McCarty et al. 1996).

Like other Australian States and territories, Western Australians have gained weight, with 42% either overweight or obese. Physical activity levels are similar to the rest of Australia, although rural areas, such as the Kimberley and Coastal Wheatbelt region report more than 40% of people as inactive, with Aboriginal populations reporting very little leisure time physical activity.

The dietary habits of most Western Australians were similarly high in fat content as with the rest of Australia, although amongst the Aboriginal population the consumption of high-energy dense foods, especially 'fast foods' was markedly higher than in non-Aboriginal Australians. These dietary habits appear to be linked to the higher level of obesity (25%) in the Aboriginal population compared with non-Aboriginals (18%). In particular, 60% of Aboriginal women were considered overweight in 1995, compared with 49% for non-Aboriginal Australian women.

Overall, a significant number of Western Australians, particularly the Aboriginal population, exhibit health behaviours (poor diet, inadequate physical activity etc) that increase their likelihood of acquiring Type 2 diabetes.

Primary Prevention Programs

Programs that attempt to manage, treat and prevent Type 2 diabetes were identified throughout Western Australia. Most programs have focused upon the management and treatment of diagnosed Type 2 diabetic patients, with limited opportunities to conduct primary prevention programs. This approach is probably a reflection of limited resources and opportunities.

Presently, three programs, “Food Cent\$”, “Supermarket Sleuth” and “Be Active” are conducted in all Western Australian regions. These programs are centrally supported by their respective health organisations, through the provision of material resources, although their implementation is not centrally coordinated. Amongst each Western Australian Health Region, the number and type of Type 2 diabetes primary prevention programs varies considerably.

Each Western Australian Health Region has developed or modified existing programs to meet the local needs of its community for the primary prevention of Type 2 diabetes. While these programs vary in their level of effectiveness and attention to evaluation, few appear to be built upon a theoretical framework underpinning a coordinated approach of achieving longer-term behaviour change of individuals or policy and structural changes in the community. In addition, identified regional programs were unlikely to be integrated into a longer-term strategy or be a part of an overall healthy lifestyle program.

In recent years, Type 2 diabetes has received an increased national profile. In 1996, diabetes was added as the 5th National Health Priority. There are a number of relevant primary prevention programs currently being implemented, including the Community Awareness Diabetes Strategy (CADS); the Active Australia: Framework; the National Divisions Diabetes Program; Acting on Australia’s Weight: A Strategic Plan for Prevention of Overweight and Obesity and the National Diabetes Strategy 2000-2004.

Recommendations

The findings of this report have led to the following major recommendations:

- That the prevalence and incidence of Type 2 diabetes and associated risk factors be systematically and periodically collected at a Statewide level, with special consideration for rural and remote communities and the indigenous population.
- That a coordinated Statewide primary prevention strategic plan addressing Type 2 diabetes risk factors be established within the Health Department of Western Australia.
- That a well-structured Statewide evaluation strategy to measure the process, impact and outcome of primary prevention programs be implemented.

- That increased collaboration amongst health organisations working in the primary prevention of health risks such as diet and physical activity (ie NHF, Cancer Foundation, Sport and Recreation, Department of Transport) be actively encouraged.
- That research funding for longitudinal research trials on the primary prevention of Type 2 diabetes be made available.

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