



Generating a report card for type 2 diabetes in Australia

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The *National Diabetes Strategy and Action Plan* proposed by Diabetes Australia, is the latest Australian initiative aimed at turning around the increasing burden of diabetes.¹ Approximately 10% of all patients attending a General Practitioner (GP) in Australia have diabetes.² An integral component of the Action plan is to establish a Commission whose responsibilities would include producing an annual report card to inform Australians of what we are doing well and where we need to do better.

The aim of this *RESEARCH ROUNDup* is to generate a report card for diabetes type 2 based on nationally representative data.

Primary health care is the cornerstone of diabetes care. Based on the Bettering the Evaluation and Care of Health (BEACH) study analysis of GP encounters, it was estimated that patients with type 2 diabetes visited a GP an average of eight times per year in 2013, with almost half of these visits being to manage their diabetes.² Therefore it follows that a nationwide report card of what works and what needs to be changed in diabetes care is likely to be of interest to GPs. The Organisation for Economic Co-operation and Development (OECD) has defined a detailed set of diabetes indicators¹ to monitor the overall quality of diabetes care and outcomes.^{3,4} Currently assessment of diabetes indicators in Australia must rely on data available from a number of relevant but independent studies, namely BEACH, and the Australian Diabetes and Obesity study (AusDiab); and Australian Bureau of Statistics (ABS) data obtained from the National Hospital Morbidity Data (NHMD) collection, the National Health Survey (NHS) series of population based self-reported health status, and the National Diabetes Register (NDR) for insulin treated diabetes. So based on the latest releases of data, what does the diabetes report card for Australia look like?

Type 2 diabetes management

Based on Medicare Benefits Scheme data, the percentage of people with diabetes receiving an annual cycle of care was just 18% in 2009/10.⁵

The BEACH study is a continuous national study of general practice activity, initiated in 2003 and based on random samples of 1 000 GPs, each reporting on 100 patients. In summary, over the past decade (2003 to 2013), variable, and often non-significant, increases were observed in GP rate of ordering tests per 100 diabetes contacts (HbA1c, microalbumin, and pathology).^{2,6} Similarly, non-significant increases were observed in GP prescribing of antihypertensives, but significant increases were reported for prescribing of anti-cholesterol agents and

Footnote¹ OECD diabetes indicators: Processes of diabetes care—annual: HbA1c testing, LDL cholesterol testing, screening for nephropathy, eye examination; Proximal outcomes—HbA1c control, LDL cholesterol control; Distal outcomes—lower extremity amputation rates, kidney disease in persons with diabetes, cardiovascular mortality in patients with diabetes.

insulin, and in referral to allied health services. Metformin was the most frequently prescribed medication among those with diabetes in 2012. Interestingly, in most cases improvement in prescribing and ordering of tests was more notable before 2008/09, whilst referrals to allied health increased rapidly after 2008 and referrals to specialists did not change significantly over the decade.^{2,6}

The AusDiab study is a longitudinal population-based study of adults aged 25 years or older, that began in 1999 with the aim of examining the prevalence and incidence of diabetes and its complications, as well as heart and kidney disease. In line with the BEACH study, AusDiab reported increased use of oral hypoglycaemic agents (but not diet alone), insulin, antihypertensives (by 36%), and anti-cholesterol agents (by 76%), among people with diabetes over the past decade.⁷ This was further supported by variable increases in the proportions of patients reaching recommended targets for glycaemic control, blood pressure, and LDL cholesterol.⁷

This is consistent with minor improvements in average HbA1c for people with diabetes as reported from the Mapping Glycaemic Control Across Australia (MGCAA) project based on 300-600 thousand pathology results collected across Australia since 2007.⁸ The MGCAA provides a unique opportunity to look at regional level data using postcode identification, and this demonstrates that in some regions glycaemic control is well above the national average. This is likely to reflect in part the impact of local chronic disease management practices, and further investigation of this relationship might be useful in improving diabetes care.

Diabetes complications

Encouraging improvements in the incidence of vision loss were reported by the Australian Institute for Health and Welfare (AIHW) in the Diabetes Indicators series and based on data from NHS (prevalence of long-term vision loss decreased from 15.3% in 2001 to 10.7% in 2007/8).⁵ However, closer inspection of the data reveals greater improvements among Australian-born patients, whereas despite initially lower rates of vision loss, those born in other countries have not recorded improvement over the same period and the prevalence of vision loss has increased among Indigenous people.⁵

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Similarly, AIHW report that the rate of hospitalisation for lower limb amputation per 1 000 people with diabetes has moderately decreased from 4.8 to 4.1 between 2001 and 2007/8, although rates among males are more than double that of females.⁵ In particular a major improvement in inner regional settings and among those born overseas was noted, but not in outer regional and remote areas. OECD figures for 2012 and based on AIHW/ABS and NHMD data indicate that currently the rate of diabetes lower extremity amputation is 4.6 per 100 000 population in Australia.⁴ This is similar to the UK and other developed countries, and a major improvement over earlier reports where diabetes-related amputation rates in Australia were one of the worst in the developed world.^{9,10}

Approximately 33% of new cases of end-stage renal disease (ESRD) in 2009 were attributable to diabetic nephropathy.¹¹ Based on Australia and New Zealand Dialysis and Transplantation Registry data, and therefore restricted to those receiving treatment, AIHW reported that the incidence of end stage renal disease among people with diabetes steadily increased between 2001 and 2005, particularly among Indigenous people, and remained steady through to 2008.⁵ Unfortunately, this is likely to be an underestimation because elderly patients often do not receive dialysis or transplantation for ESRD in Australia.¹²

Type 2 diabetes prevention

Using the AUSDRISK tool, data from AusDiab show that the incidence of diabetes is considerably greater for those classified as high versus low risk, 1.6% versus 0.1% respectively.⁷ There the incidence of diabetes was greatest among obese individuals and those reporting low levels of physical activity and/or hypertension. Therefore it is of concern that an examination of selected GP practices in Australia found that 52% of overweight and 12% of obese patients were assessed as not overweight by their GP.¹³ In that study failure to detect overweight and obesity was greatest among those without type 2 diabetes and hypertension, suggesting that overweight is more closely monitored for those with diabetes but opportunities to implement strategies to prevent the development of type 2 diabetes are being missed.

On the positive side, these independent data sources together support a trend toward improved testing, treatment and referral, and a trend towards more patients reaching recommended targets and, in some cases, noteworthy reductions in complication rates. However, because these studies and data sources are not directly linked, it is difficult to assess the true impact of changes in practice and policy on the observed changes in patient-related outcomes, and difficult to explain any anomaly. Data processing can also hinder reporting, and it has been pointed out that use of surrogate data sources such as pathologists' Medicare claims can be misleading in the case of diabetes because of 'episode coning' where the listed tests are limited to the three most expensive items.⁶ In supporting the commendable aim of generating a meaningful report card, consideration might be given to recent calls for the collection of reliable, representative, longitudinal patient-based data directly from all GPs, as well as proposals to improve GP engagement through revised payment incentives.^{14,15} Current data sources are often limited by the type of data collected, cohort size, or relevance of the data to the general diabetes population. Future report cards would benefit from the establishment of a coordinated, nationwide data collection system possibly based on reporting of data such as the OECD diabetes indicators from 'real world' patients.

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