



# Changes in hospitalisations for the Otago Diabetes Register population, 1997-2005. What does it mean?

K. Coppel<sup>1,2</sup>, S. Williams<sup>3</sup>, K. Anderson<sup>2</sup>, V. Farmer<sup>1</sup>

<sup>1</sup> Edgar National Centre for Diabetes Research, University of Otago, Dunedin, New Zealand

<sup>2</sup> Diabetes Project Trust Otago, Dunedin, New Zealand

<sup>3</sup> Department of Preventive and Social Medicine, University of Otago, Dunedin, New Zealand

## BACKGROUND

Diabetes, one of the 13 immediate action priority objectives for population health in the New Zealand (NZ) Health Strategy, is a common chronic health problem. 4.3% of those aged 15+ years reported having diabetes in the 2002/03 NZ Health Survey.

The delivery of high quality cost effective diabetes care is necessary in order to reduce the impact of the disease. Worldwide, much resource has been put towards initiatives to improve the quality of diabetes care, but information relating to the long-term impact of such interventions is relatively sparse, principally because interventions need to be sustained for a prolonged period to observe changes in outcomes. The impact on hospitalisation rates is infrequently reported.

The Otago Diabetes Register (ODR) was established to monitor and evaluate changes in diabetes care as part of a regional quality improvement project. Improvements in process measures have been observed, the notable exception being HbA1c levels. The greatest improvements in recommended clinical practices (eg feet and retinal examinations), and ACE inhibitor and lipid modifying medication prescription occurred between 1997 and 2001.

## AIM

To describe changes in hospitalisations for the Otago Diabetes Register population, 1998-2005.

## METHODS

Demographic and diabetes data for individuals enrolled on the ODR were matched to regional hospitalisation data using National Health Index numbers. Hospitalisation data included admission date, length of stay, ICD diagnosis codes and procedure codes for each admission. ODR hospitalisation patterns for years 1997-2005 were described and compared with the non-register diabetes population.

## RESULTS

The annual number of hospital admissions with a diabetes code increased from about 1,100 in 1998 to a peak of about 2,700 in 2003, then declined to 1,300 in 2005. Overall for all admissions with at least one diabetes code, the proportion with a primary diagnosis of an endocrine disorder, including diabetes, increased and that for a cardiovascular disorder decreased over the study period (Figure 1).

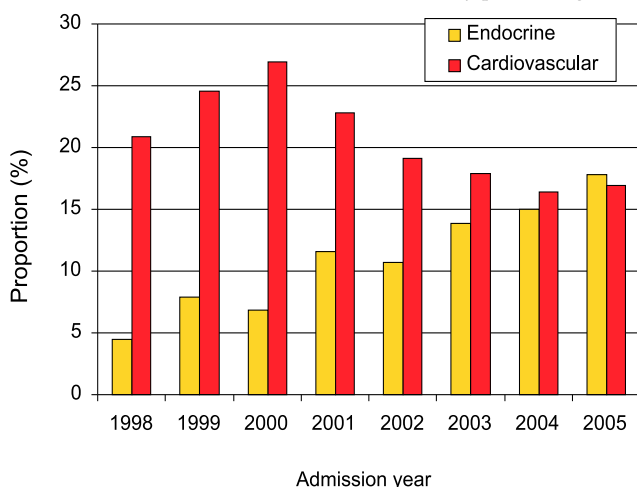


Figure 1. The proportion of admissions with a primary diagnosis of an endocrine or cardiovascular disorder, 1998-2005.

For the ODR population, the proportion hospitalised was about 20% for years 1997 to 2003, then decreased to 11.3% and 12.6% for 2004 and 2005, respectively.

Mean length of stay per hospital admission was consistently about 4 nights for patients with type 1 diabetes (T1DM) for each year, whereas amongst patients with type 2 diabetes (T2DM) mean length of stay decreased from 7.4 nights in 1997 to 5.8 in 2005. Overall, diabetic patients not enrolled on the register were hospitalised about 1 night longer than the register population.

Table 1. Mean number of hospital bed nights per stay for diabetic patients enrolled or not enrolled on the Otago Diabetes Register (ODR), 1998-2005.

Year	Number of hospital events		Mean number of bed nights per stay	
	Enrolled ODR	Not enrolled	Enrolled ODR	Not enrolled
1998	829	935	6.0	7.6
1999	1,013	870	6.4	7.6
2000	1,112	934	6.1	7.4
2001	1,284	1107	5.3	7.2
2002	1,325	1217	5.2	6.3
2003	1,570	1195	4.9	6.9
2004	729	583	6.1	5.8
2005	731	593	5.7	6.5
<b>Total</b>	<b>8,593</b>	<b>7,434</b>	<b>5.7</b>	<b>6.9</b>

Where diabetes was the primary cause of hospitalisation, 6% of those with T1DM were recorded as having T2DM and 11% of those with T2DM were recorded as having T1DM.

## CONCLUSIONS

Between 1998 and 2005 hospitalisation patterns for diabetic patients changed. A smaller proportion of those enrolled on the Otago Diabetes Register were hospitalised and length of stay declined. Improvements in quality of diabetes care and an increased focus to avoid hospitalisations in general are possible explanations.

Cardiovascular diseases as a primary cause of hospitalisation declined considerably, while that for endocrine disorders increased. This may be a real change or secondary to changed coding practices. Further work will be undertaken to disentangle the reason for these changes.

## ACKNOWLEDGEMENTS

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