5.2. Avoidable admissions: Uncontrolled diabetes

Diabetes is one of the most significant non-communicable diseases globally, and is also a leading cause of mortality. In the United States for example, where there are an estimated 26 million diabetics, diabetes was a contributory factor to around 230 000 deaths in 2007. In Europe, an estimated 55 million people live with diabetes. Across the world, the population of diabetics is expected to rise from 285 million in 2010 to 438 million by 2030 (IDF, 2009) (see also Indicator 1.10, "Diabetes prevalence and incidence").

Diabetes is implicated in cardiovascular disease, hypertension, kidney disease and lower limb amputation. It is also the leading cause of blindness in industrialised countries and the most common cause of end-stage renal disease in the United States, Europe, and Japan. Furthermore, studies have shown that people who have diabetes are more likely to have depression and find it more difficult to follow treatment guidelines (Mezuk *et al.*, 2008; Egede, 2004).

Major risk factors for diabetes include being overweight or obese, physically inactive, having familial history of diabetes, having high blood pressure and having a history of cardiovascular disease. The multi-centre Diabetes Prevention Program (DPP, 2002) showed that modest weight loss and dietary changes can delay or even prevent the onset of diabetes. Researchers in the DPP trial also found that intensive counselling on effective diet, exercise, and behaviour modification reduced the risk of developing diabetes by almost 60%. This finding applied to all ethnic groups, and for both males and females. These lifestyle changes had their greatest impact on older age groups where the interventions led to a 70% reduction in risk. These findings underline the importance of having diabetes prevention and management programmes embedded in primary care settings.

Figure 5.2.1 shows that there are large variations in admission rates for uncontrolled diabetes across OECD countries. Austria, Hungary, Korea and Mexico have rates that are more than double the OECD average. Spain, Israel, Australia and New Zealand have very low admissions rates for uncontrolled diabetes. Despite having high disease prevalence, Canada has moderately low admission rates. This may be indicative of the impact of Canada's Integrated Strategy on Health Living and Chronic Disease and the Canadian Diabetes Strategy (PHAC, 2005). Male admission rates for uncontrolled diabetes are around 20% higher than females, though several countries, notably Finland, Sweden and Denmark, have considerably higher male admission rates compared to females.

Austria has taken steps to improve diabetes care via its disease management programme (DMP) which was implemented in 2007. Findings from a recent study showed that the Austrian diabetes DMP improved process quality and enhanced weight loss, but did not significantly improve diabetes control (Sönnichsen *et al.*, 2010). The same research also noted that quality depends more on the care offered by a specific family physician than on the widespread implementation of a programme.

In Korea, the high rate of admissions can only be partly explained by higher diabetes prevalence related to changing lifestyle brought about by recent economic development (Cho, 2010). It is also linked to a less developed primary care infrastructure (Chun *et al.*, 2009).
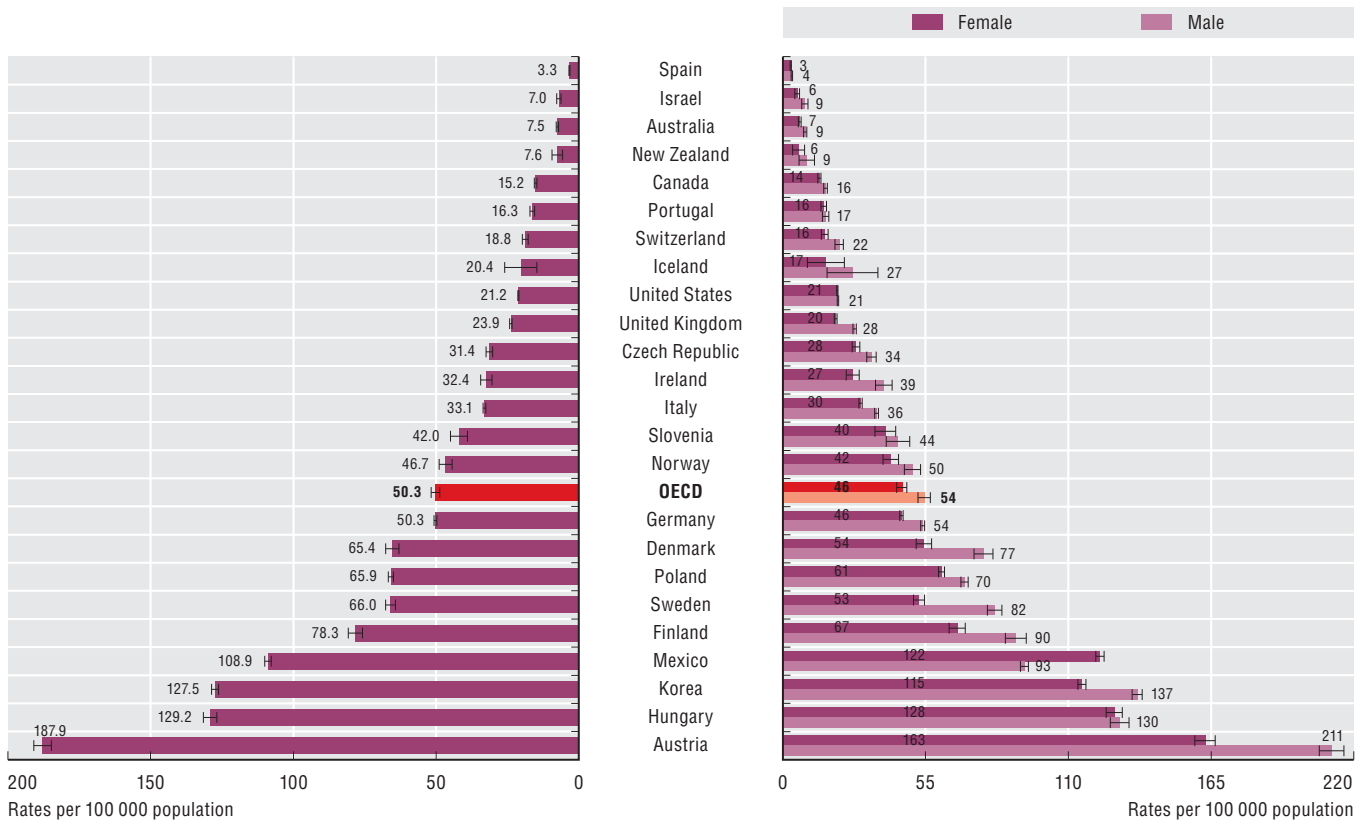
Figure 5.2.2 shows that uncontrolled diabetes admission rates do not appear to be strongly correlated with diabetes prevalence, with some countries such as Canada, Portugal and the United States having high prevalence rates but low admission rates. Conversely, Finland, Sweden and Denmark have lower prevalence rates but higher admission rates. The absence of any meaningful correlation suggests that factors other than disease "volume" are at play when explaining hospital admissions.

Definition and comparability

The indicator for uncontrolled diabetes is defined as the number of hospital discharges of people aged 15 years and over with diabetes Type I or II without mention of a short-term or long-term complication per 100 000 population. The rates have been adjusted to take account of the age and sex composition of each country's population structure. Differences in coding practices between countries may affect the comparability of data. Variations in disease classification systems, for example between ICD9-CM and ICD10-AM, may also affect comparability.

Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

5.2.1 Uncontrolled diabetes hospital admission rates, population aged 15 and over, 2009 (or nearest year)

Legend: ■ Female ■ Male

Country	Female	Male
Spain	3.3	3 / 4
Israel	7.0	6 / 9
Australia	7.5	7 / 9
New Zealand	7.6	6 / 9
Canada	15.2	14 / 16
Portugal	16.3	16 / 17
Switzerland	18.8	16 / 22
Iceland	20.4	17 / 27
United States	21.2	21 / 21
United Kingdom	23.9	20 / 28
Czech Republic	31.4	28 / 34
Ireland	32.4	27 / 39
Italy	33.1	30 / 36
Slovenia	42.0	40 / 44
Norway	46.7	42 / 50
OECD	**50.3**	**46 / 54**
Germany	50.3	46 / 54
Denmark	65.4	54 / 77
Poland	65.9	61 / 70
Sweden	66.0	53 / 82
Finland	78.3	67 / 90
Mexico	108.9	122 / 93
Korea	127.5	115 / 137
Hungary	129.2	128 / 130
Austria	187.9	163 / 211

Rates per 100 000 population

Note: Rates are age-sex standardised to 2005 OECD population. 95% confidence intervals are represented by ├──┤.
Source: OECD Health Data 2011.

StatLink ᵃᵐˢ http://dx.doi.org/10.1787/888932525077

5.2.2 Uncontrolled diabetes hospital admission rates and prevalence of diabetes, 2009 (or nearest year)

Admissions per 100 000 population. $R^2 = 0.05$. Prevalence of diabetes (%)
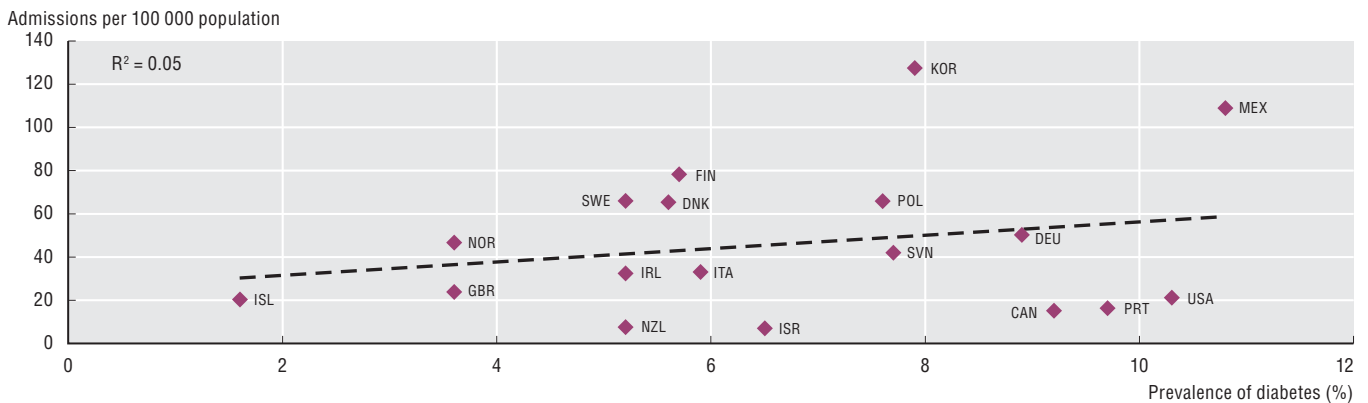
Note: Prevalence estimates of diabetes refer to adults aged 20-79 years and data are age-standardised to the World Standard Population. Hospital admission rates refer to the population aged 15 and over and are age-standardised to 2005 OECD population.
Source: IDF (2009) for prevalence estimates; OECD Health Data 2011 for hospital admission rates.

StatLink ᵃᵐˢ http://dx.doi.org/10.1787/888932525096