

5.2. Avoidable admissions: diabetes complications

Driven by the rise in obesity rates, diabetes has become one of the most important public health challenges of the 21st century. Over 150 million adults are affected worldwide, with the number expected to double in the next 25 years (King *et al.*, 1998; IDF, 2006). Across OECD countries, prevalence is estimated to be more than 6% of the population aged 20-79 years in 2010 and ranges from less than 5% in Iceland, Norway and the United Kingdom to more than 10% in Mexico and the United States, (see Indicator 1.12 “Diabetes prevalence and incidence”). Diabetes is 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. Individuals with type II diabetes have a two-to-four times greater risk of cardiovascular disease (Haffner, 2000).

There is evidence that lifestyle changes such as weight loss and increased physical activity can prevent diabetes in high-risk individuals (Tuomilehto *et al.*, 2001). Better glycaemic control limits organ damage and vascular complications over time (Diabetes Control and Complications Trial Research Group, 1996). Empirical data, however, reveals that such practices are under-utilised (McGlynn *et al.*, 2003).

Hospital admissions for lower extremity (or limb) amputation reflect the quality of long-term diabetes treatment. Non-traumatic amputations are 15 times more frequent in diabetic patients than in the general population and 80% of amputations could be prevented, according to WHO estimates (Ollendorf *et al.*, 1998; WHO, 2005). Appropriate diet, exercise and drug treatment combined with proper foot care can reduce the risk of lower extremity amputation. Since most related services are delivered or ordered by primary care providers, both admissions for acute diabetic complications and lower extremity amputations are suitable measures of the quality of primary care.

Figure 5.2.1 reveals that many countries have rates of diabetes-related lower extremity amputation close to the OECD average of 15 amputations per 100 000 population, but the United States has more than twice that rate with 36 admissions. Korea and Austria, on the other hand, have only about half the average admission rate.

Admission rates for amputations are higher for men, even though diabetes is slightly more prevalent in women. Figure 5.2.1 reveals that diabetic males are admitted for lower extremity amputations at a rate nearly threefold that of females. This likely reflects the higher rates of vascular risk factors other than diabetes in men (AHRQ, 2009).

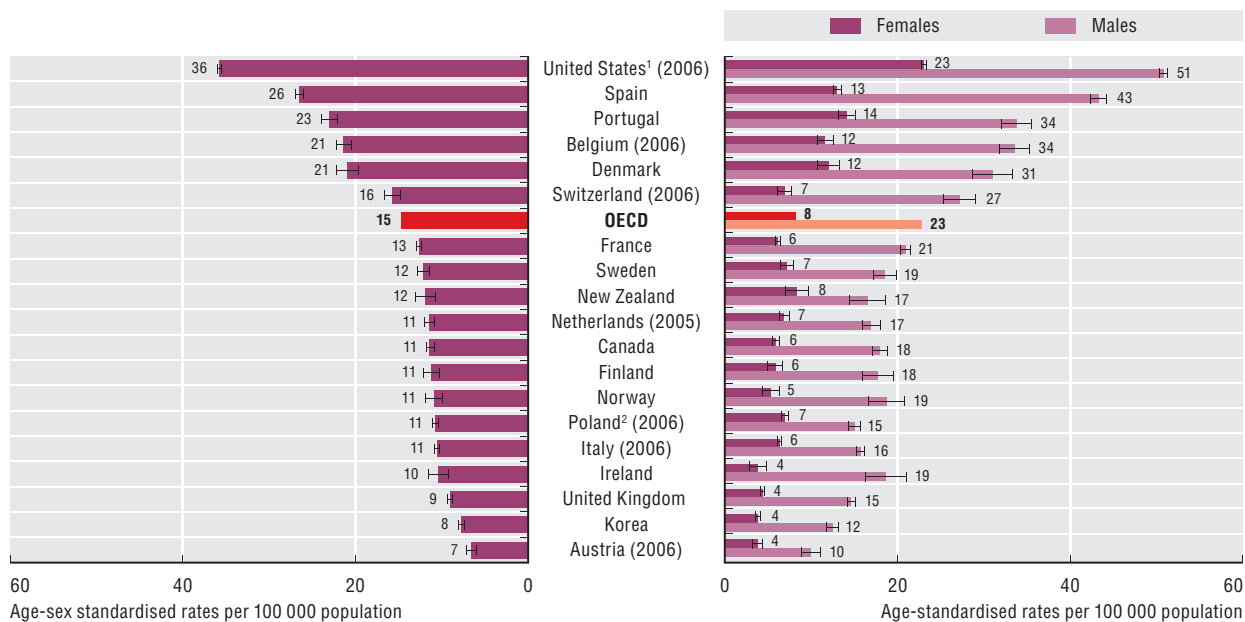
Figure 5.2.2 illustrates that the United States has the highest admission rate for acute diabetic complications, with almost 60 admissions per 100 000 population or almost three times the OECD average rate of 21. The rate is below ten admissions in New Zealand and the Netherlands. Some countries have explicit targets to improve diabetes treatment at the primary care level. For instance, New Zealand has established a service target to increase the percentage of people with diabetes who attend a free health check and have satisfactory diabetes management (Ministry of Health, 2007).

Figure 5.2.3 shows that amputation rates are not strongly correlated with estimates of diabetes prevalence, indicating that the underlying rate of diabetes does not explain most of the variation in amputation rates. This, together with the magnitude of the variations for both acute complications and amputations, indicates that further investigation of systems of care is warranted.

Definition and deviations

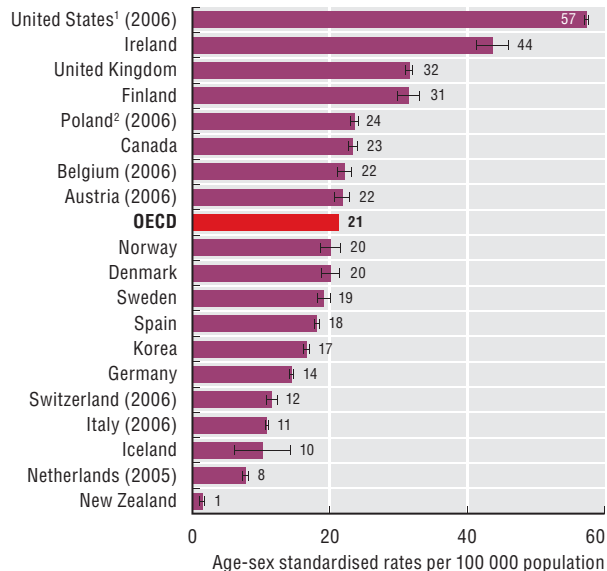
Avoidable diabetes acute complication and lower extremity amputation hospital admission rates are defined as the number of hospital admissions of people aged 15 years and over per 100 000 population in that age group per year. Coding practices for primary and secondary diagnoses between countries might affect indicator rates. The rates have been adjusted to take account of differences in the age and sex composition of each country's population. The definition of the lower extremity amputation indicator includes amputation of the foot and toes in addition to more major amputations, such as above ankle, through knee and up to hip amputations. Minor amputations of the toe and foot do not necessarily indicate poor quality of care, as they may be carried out to prevent major amputations. In addition, given some minor amputations can be performed in certain primary care settings, clinical practices between countries might also affect indicator rates. Since definition rely on specific procedure codes, different classification systems in use across countries may impact on the comparability of the data.

5.2.1 Diabetes lower extremity amputation rates, population aged 15 and over, 2007



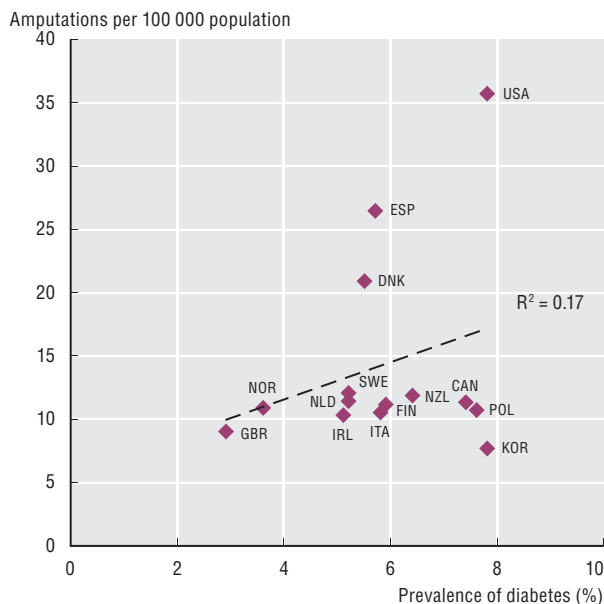
1. Does not fully exclude day cases. 2. Includes transfers from other hospital units, which marginally elevates rates.

5.2.2 Diabetes acute complications admission rates, population aged 15 and over, 2007



1. Does not fully exclude day cases. 2. Includes transfers from other hospital units, which marginally elevates rates.

5.2.3 Diabetes lower extremity amputation rates and prevalence of diabetes, 2007



Source: OECD Health Care Quality Indicators Data 2009. Rates are age-sex standardised to 2005 OECD population. Diabetes prevalence (aged 20-79 years) are from the International Diabetes Federation (2006). 95% confidence intervals are represented by |—|.

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