

Reviewer's report

Title: Counting drugs to understand the disease: The case of measuring the diabetes epidemic

Version: 2 Date: 11 November 2006

Reviewer: Robert J Glynn

Reviewer's report:

General

Simple approaches to obtain reliable estimates of incidence, prevalence and death rates due to diabetes are valuable. Use of databases of prescription claims for this purpose are controversial.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. The authors acknowledge the limitations of their approach related to undiagnosed and untreated diabetes. The relevant literature should be discussed. For example, F Sartor and D Walckiers (Am J Epidemiol 1995; 15: 782-787) argue that their approach may be reasonable.
2. Current estimates for the prevalence of undiagnosed diabetes should be included. In the US, the current estimate is 30% (CC Cowie et al. Diabetes Care 2006; 29: 1263-1268). Some discussion of the expected number of diabetics who are controlled by diet is also needed. Will the percentage of diet-controlled diabetics vary by age or gender? The prevalence of diabetes among people age 65 or older in the current study is about half the prevalence in this age group in the US. How much of this difference is due to undiagnosed and untreated diabetes vs differences between countries?
3. Some studies suggest that there are systematic differences between those who are treated and untreated and this limits the usefulness of estimates of diabetes prevalence and incidence based on records of filled prescriptions (e.g. RJ Glynn et al. Am J Epidemiol 1999; 149: 541-549 and RJ Glynn et al. J Clin Epidemiol 1999; 52: 781-790). Is it likely that the systematic discrepancies observed in those papers are lessened in the more homogeneous population in Denmark?
4. It is important to evaluate whether increased prevalence in diabetes is due more to increased incidence or greater survival among previously diagnosed diabetics. However, the finding of increased incidence with time is subject to potential bias if detection of diabetes is improving with time. This possibility requires discussion. For example, in the US it used to be said that half of all diabetes was undiagnosed but now the percentage is 30%. The paper needs to consider the biases that would arise from greater attention to detection and treatment over time.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.