Mortality rates in primary care: comments on an article and some general views

This short paper has been prepared following Sir Liam Donaldson's invitation to provide comments on an article together with views on how mortality monitoring might be brought into the CMO Review of Medical Revalidation. Although there are technical problems to be overcome before a system to monitor mortality rates in primary care is introduced, a system is necessary; at present investigations are being undertaken in an informal and therefore unsatisfactory way. Steps are needed to design and introduce the most practical, cost-effective approach.

Billett et al (2005).

The authors undertook a detailed review of the mortality rates of patients of five GPs, found the review to be time-consuming and costly, and advised caution about the introduction of a national system to monitor general practice mortality rates. In general I do not disagree with the author's conclusions, although believe there are likely to be solutions to many of the difficulties they encountered.

1. Death rates were calculated by combining information from the Exeter patient registration database with information from the Public Health Mortality File. This is a protracted process. Some areas have introduced local information systems, however. Leicestershire is an example, where the information system links registration data with deaths and information on hospital admissions. This facilitates the calculation of mortality rates at practice or GP level, and also enables adjustment for the age and sex distribution and deprivation level of the patient population, and comparison with mortality rates in the locality. I am enagaged in a project with colleagues using the Leistershire information system to provide a sample of practices with these data and explore the use of the data in planning practice clinical policies. I do not know how many SHAs have information systems similar to that in use in Leicestershire.

2. Billett et al reported on the numbers of deaths in nursing homes, but were not able to estimate a mortality rate for patients in homes. The Leicestershire system can provide reasonably complete information about place of death (including identification of care and nursing homes), but information on the numbers of registered patients living in homes is not available. Mortality rates among patients in care or nursing homes cannot, therefore, be provided.

3. The statistical analysis reported by Billett et al is relatively straightforward. They have not reported on mortality rates in the practices over an extended period such as five years, although such an analysis was included in the paper by Aylin and colleagues which led to the investigation in West Sussex. The opportunity for error is greater when the analysis is limited to a single year because the numbers of deaths in a practice population in a year is small.

4. The record review was thorough. In order to save time and costs, it would have been reasonable to have reviewed only a sample of records (the review being extended to include all records if concerns had been identified from review of the sample). The finding that some practices had not routinely ensured that a printout of the computer records had been inserted into the paper records prior to archiving may indicate the need for practices to be reminded about this requirement.

General views

1. A number of primary care organisations are interested in the mortality rates of practice populations, and have collated information about their practices. Others have instituted reviews of mortality rates when concerns have been raised. I am being asked for advice on conducting reviews and interpreting findings between one and three times a year. A formal way to deal with such enquiries is required. I have encouraged enquirers to contact the Healthcare Commission, and have begun discussions with the NPSA on the development of a standard, systematic approach. Whilst academics such as myself may have something to contribute to reviews of mortality rates, it should be in the context of a secure and explicit NHS framework. The current rather informal approach is unsatisfactory and must be sorted out.

2. There is an undue emphasis on the statistical approaches to use in identifying outliers. Although there is a legitimate debate about the most appropriate statistical techniques, it is the clinical rather than statistical significance that is of greatest importance in interpreting mortality rates. For example, some of the enquiries I have received were not prompted by a concern about an observed mortality rate but by other concerns about the clinical practice of a general practitioner.

3. A systematic approach to investigations would be helpful, including the specification of clear aims and objectives, and a plan that stipulates the steps to be taken as the findings emerge. An example of an investigation plan has been published by Mohammed et al (2004). The hypotheses that may explain the findings at each stage of an investigation are key. If a legitimate clinical explanation is most likely, a continued clinical investigation is justifiable. However, if poor or criminal performance appears to be a real possibility, a clinical investigation is no longer justifiable; a NHS review of performance or a criminal investigation will be required, along with action to ensure patient safety. Decisions about which type of investigation to pursue can be difficult. Much progress has been made by primary care trusts in recent years as experience has accumulated. Nevertheless, guidance on the conduct of investigations into mortality rates might be useful.

4. In addition to enquiries about death rates in general practice, I have been asked to advise on mortality patterns in nursing homes or community hospitals. In considering steps to introduce a scheme to monitor mortality in general practice, the additional steps needed to facilitate monitoring in nursing homes and community hospitals should be identified and if possible addressed.

5. In my view, it is now impossible to justify ignorance by the NHS of mortality rates in general practice. If monitoring is not introduced in some form, those practices that have higher than expected mortality rates – whatever the explanation – will remain undetected. Furthermore, we should explore the utility of information on general mortality rates for local clinical policy. For example, in meetings with local practices in Leicestershire at which we have presented practice mortality data, general practitioners have debated the impact of their policy on use of statins and adoption of guidance on coronary heart disease on the differences between their practice mortality rates and other practices.

6. There are problems to be overcome before a monitoring scheme would be possible. Some problems would be resolved in the first years of a monitoring scheme, during which understanding of the population characteristics and expected mortality rates in primary care populations will accumulate. This will enable the informed selection of appropriate comaprison practices/rpoviders or doctors, and allow factors such as the proportion of people in nursing homes to be taken into account. In addition to linkage between the Exeter system and the mortality file, methods for accounting for registration with a practice or provider rather than a named doctor, the mobility of locums and others will need piloting. Nevertheless, the current somewhat ad hoc arrangements for detection and investigation of high mortality rates in general practice need replacing. Pilot schemes would enable the exploration and development of a more systematic approach.

7. Some consideration has already been given to the preparations needed for the introduction of a monitoring scheme, and much work may have been undertaken of which I am unaware. It would be helpful if the review were to

   a. summarise what progress has been made, for example in developing the linkage between the Exeter system and the mortality file
   b. conider what further steps are needed before a scheme can be introduced
   c. set a timetable for the introduction of a scheme, including arrangements for pilot/developmental phases
   d. recommend, or promote the development of recommendations by the NPSA and/or Healthcare Commission of, guidance for primary care trusts and SHAs on the conduct of investigations into mortality rates in primary care and in community hospitals and nursing homes.

8. Mortality rate monitoring is unlikely to have a role in revalidation in the immediate future. Once a mortality monitoring scheme is established, it may be possible to take account of patient mortality information in revalidation (of general practitioners), but this would demand careful consideration following an evaluation to determine practicality and validity.

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References

Billett J, Kendall N, Old P (2005). An investigation into GPs with high patient mortality rates: a retrospective study. J Pub Hlth (advanced access: http://jpubhealth.oxfordjournals.org/papbyrecent.dtl)

Mohammed MA, Rathbone A, Myers P, Patel D, Onions H, Stevens A (2004). An investigation into general practitioners associated with high mortality flagged up through the Shipman inquiry: retrospective analysis of routine data. BMJ 328:1474-7.

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