

**Table 1.** Mean differences in patients immunization rates (%).

|                        | Confidence interval           |                               | P (pairs method of Schwartz) |
|------------------------|-------------------------------|-------------------------------|------------------------------|
|                        | 1991 rate 95% (2898 patients) | 1992 rate 95% (2919 patients) |                              |
| Tetanus immunization   | 55.8 (52.2–59.4)              | 66.5 (62.9–70.1)              | <0.001                       |
| Influenza immunization | 76.7 (74.5–78.9)              | 80.9 (78.6–83.2)              | <0.01                        |
| Double immunization    | 45.0 (41.3–48.7)              | 57.6 (53.7–61.5)              | <0.001                       |

marked deviation from the pre-defined standards for tetanus and double immunization (Table 1). This led to the development of consensus recommendations distributed in July 1992 to all participating physicians. The second data collection was carried out in December 1992. In 1992, 2919 and 2135 patients were recorded, respectively. The immunization rates are shown in Table 1.

Regression analysis of the change in immunization rate compared to the 1991 immunization rate in the patient groups seen by each physician showed an improvement in the rates for tetanus alone, influenza alone, and for double influenza and tetanus immunizations. The improvement was more obvious when the physicians had a low percentage of immunized patients during the first year.

We have shown that it is perfectly possible to conduct a self-administered clinical audit in the special setting of general practice in France. Data collection was prospective. Use of a rapidly completed notebook (30 per patient in our study) facilitated both the conduct of the survey and acceptance of the additional workload during the consultation. We observed considerable modification of the physicians' clinical practice. In accordance with the recommendations, the tetanus immunization rate and double immunization rates increased significantly from 1991 to 1992. The increase was greater for physicians who had a low percentage of immunized patients during the initial data collection.

In the absence of a randomized control group, the observed increases cannot be definitively attributed to the audit, to a spontaneous trend or to other factors. For influenza, the changes in immunization rates from 1991 to 1992 could have been caused by the impact of influenza immunization campaigns. This is certainly not the case for tetanus since there was no large-scale public campaign during the study period. The volunteer physicians who accepted the initial guidelines may have thought that their practice was close to these standards. The discovery of a considerable difference between the standards and their actual practice, as observed during the first data collection, may have

been the deciding reason for them to modify their clinical practice.

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### Night visiting rates

Sir,

The paper by Majeed *et al*<sup>1</sup> examining night visit rates in 129 practices in Merton Sutton and Wandsworth FHSAs uses a similar method of analysis to work which we have been doing in East London, and raises comparable questions about the potential sources of bias in this type of analysis.

Our analysis is based on 2 years (1992/3 and 1993/4) of FHSAs night visit claims data from 155 practices in East London and the City Health Authority. Unlike Majeed *et al*'s data, we were able to categorize claims into high and low payment rates (corresponding to visits done 'in house' and by a deputizing service, respectively).

Our data showed no association between the total night visit rate and practice characteristics (partnership size, practice manager, practice nurse, training status and computerization), but suggested an inverse relationship with indices of social deprivation. Like Majeed *et al*, we have used crude rates, as data is not available that enables us to age standardize; however, we found no relationship between the total night visit rate and percentages of the population in different age bands.

All practices for which we have data claim for some visits done by a deputizing service. The correlation between total night visit claims and proportion claimed as deputized ( $r = -0.29$ ,  $P < 0.01$ ) suggests that, contrary to commonly held opinion, practices using a deputizing service for the greater proportion of their visits have lower total night visiting rates. Whether these are valid findings, or simply relate to differences between practices in claiming rather than visiting is open to debate.

The potential sources of bias in this type of analysis need clear enumeration. The analysis is based on financial claims, which Majeed *et al* considers a reasonably accurate estimate of the number of visits carried out, but in their study, four practices apparently claimed none, raising the possibility that claim rates may be associated with organisation within the practice. The claims analysed by Majeed *et al* were based on Merton Sutton and Wandsworth FHSAs residents. Practices will have a variable mix of FHSAs residents, depending on their boundary policies and their geographic location, but no account is taken of this in the analysis. A further source of bias lies in the estimate of list inflation for practice. Imputing list inflation from census variables takes no account of the influence practice organization may have;<sup>2</sup> for example, practices which achieve high targets are likely to have lower list inflation.

Descriptive studies such as this have the potential for explanatory power which needs to be carefully balanced against a range of sources of bias. Undoubtedly, further collection of individual patient and practice data would reduce many of these sources of inaccuracy.

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### References

1. Majeed FA, Cook DG, Hilton S, Poloniecki J, Hagen A. Annual night visiting rates in 129 general practices in one family health services authority: association with patient and general practice characteristics. *Br J Gen Pract* 1995; **45**: 531–535.
2. Robson J, Falshaw M, and the 'healthy eastenders' project. Audit of preventive activities in 16 inner London practices using validated measure of patient population, the 'active patient' denominator. *Br J Gen Pract* 1995; **45**: 463–466.

### Setting standards of prescribing performance

Sir,

Bateman and his colleagues (January *Journal*, p. 20) describe setting and applying standards of prescribing performance in primary care. A consensus group of general practitioners agreed and set the standards which were then applied to the Prescribing Analyses and Cost (PACT) data of practices in their region.

The quality of prescribing is a reflection