OUT-OF-HOURS WORK

Sir,

I found your editorial and Dr Lockstone's paper (January *Journal*) interesting. I have no doubt that your " extended cover system " gives the patients better medical care and is best suited to a group practice, certainly a practice working in a town away from conurbations. This can be clearly deduced from comparing Dr Lockstone's paper with Dr Gabriel's (p. 74) in the same issue, on an emergency call system.

In a study of night calls I made in my group practice of four doctors from 1 January 1960 to the 31 December 1965 (excluding midwifery) our call rate was 6·6 per 1,000 patients (Pritchard, 1966) as compared with Dr Lockstone's rate of 10·7 in 1974. Our present night call rate is lower still and Dr Lockstone's paper further confirms an interesting fact, which has not been fully explained, that the further north a practice is in the United Kingdom the higher the night call rate, according to the papers so far published.

I consider Dr Lockstone's paper completely demolishes the curious statement he quotes from the *BMA News* that " night work merely satisfies the doctors delusions of grandeur ". . . Anyone who wrote that has not been pulled from his warm bed to drive through a cold and snowing night to see a patient. The statement goes on to say that night calls . . ." could be withdrawn permanently without serious loss " . . . Dr Lockstone proves conclusively that this is totally incorrect. His total of " irresponsible " calls totalled 11 (seven per cent). Ours I labelled " frivolous " and totalled 13 (2·5 per cent) of 325 calls in six years. In other words the vast majority were necessary and many were literally life saving.

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COLOUR TAGS FOR ABUSED CHILDREN

Sir,

In view of the widespread interest in non-accidental injury and neglect to children, and the odium which has occurred with slip-ups, I feel it is essential to have a colour tag on the medical records of families at risk. We have started to use the pink tag with a little hammer drawn on it, but I feel that something should be agreed on a national basis.

Your readers' comments would be appreciated.

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NOMINATIONS FOR FELLOWSHIP

Sir,

May I enlist the services of the *Journal* to ask those of our colleagues who are nominating members for the Fellowship to ensure that their nomination forms are completed in typescript, on grounds both of legibility and of economy?

At present, many nomination forms are received completely in manuscript; valuable time and effort are then spent by our secretariat at Princes Gate in retyping these forms so that they may be made legible for the members of the Committee on Fellowship. As you will know, each nomination requires three sponsors, each of whom completes a form; with an average of some 50 nominations to digest each time, the members of the Committee have to study some 150 forms in detail.

It would therefore be most helpful if all forms were received already typed, when they can be readily photocopied. To avoid wasting time and effort at Princes Gate, our secretariat have now been instructed to return forms received in manuscript to their originators, with a request that they be typed. It is well realised that this may impose a disappointing delay in some nominations, but the necessity for economy has now become so acute that your Committee on Fellowship feels that this procedure is fully justified.

One final point, may I re-iterate that sponsors should be Fellows of the College or members of more than five years' standing?

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THE DISTRIBUTION OF EPISODES OF ILLNESS

Sir,

Dr Kilpatrick's empirical finding that the frequency of episodes of illness per patient per year has a geometric distribution (September *Journal*), though interesting, is not as useful as his subtitle ' a research tool in general practice? ' would seem to suggest.

When comparing real data with a theoretical statistical distribution, it is customary to carry out a statistical significance test (often referred to as a ' goodness-of-fit ' test) to see how well the data fit the distribution. On this occasion such a test identifies a discrepancy between the data of the National Morbidity Survey and the geometric distribution advocated by Dr Kilpatrick ($\chi_8^2 = 536$). In particular the number of patients who suffered ten or more episodes was some 18 per cent less than predicted (1,577 compared with 1,908).

However, it would be unfair to describe the geometric distribution as a mediocre fit for these data without first proposing a distribution which would provide a better model for the data. Such a distribution is provided by the negative binomial distribution, which has been shown by Ashford and

Hunt (1974) to provide good estimates of the number of episodes in a year for all patients but the very old and the very young. The negative binomial distribution enjoys three clear advantages over the geometric.

First, as Dr Kilpatrick points out, the geometric distribution is merely a special case of the negative binomial (in much the same way as, for example, the square may be regarded as a special case of the rectangle). Consequently, however well the geometric distribution fits the data, the negative binomial will fit them at least as well (and often very much better, as demonstrated by Ashford and Hunt).

Secondly, it may be argued that the negative binomial distribution has more intuitive appeal as a model for episodes of illness in general practice. For it is equivalent to a compound form of the Poisson distribution known as the Poisson-gamma distribution (Johnson and Kotz, 1969). The relevance of such an apparently obscure distribution becomes clear when one realises that, if all patients were equally likely to fall ill, the resulting distribution of episodes of illness would be the more familiar (simple) Poisson distribution. However, as every general practitioner knows, patients vary widely in their susceptibility to illness. Hence the intuitive appeal of the Poisson-gamma distribution, which adapts the (simple) Poisson distribution by making explicit allowance for 'illness-proneness' (Greenwood and Yule, 1920).

By the same token, Dr Kilpatrick might argue that his geometric distribution is also equivalent to a compound Poisson distribution—the Poisson-exponential distribution—and therefore also allows for 'illness-proneness.' However, the references already quoted provide convincing evidence that the Poisson-exponential distribution is a poor substitute in this respect, as in almost all others, for the Poisson-gamma. This point may be illustrated by recalling one of the basic definitions of the geometric distribution—the distribution of the number of 'trials' (e.g. tosses of a coin or throws of a dice) required to obtain the first 'success' (e.g. the first head or the first six, respectively) in a sequence of repeated trials; this is not a distribution whose relevance to general practice is at all easy to visualise!

Thirdly, the geometric distribution lacks the flexibility which it seems reasonable to ask of a 'research tool.' For example, if we accept Dr Kilpatrick's finding that the number of episodes in one year is geometrically-distributed, then the number of episodes in two years has, not a geometric distribution as one might expect, but a negative binomial distribution!

To summarise, Dr Kilpatrick has had the good fortune to discover that his square hole (the geometric distribution) provides a tolerable fit for one particular member of a family of pegs whose general shape, previous work suggests, is rectangular (i.e. distributed in a negative binomial fashion). However, the fact that all squares are rectangles does not imply that all rectangles are squares. Thus it would be wrong to deduce from this single chance occurrence that the frequency of episodes of illness is not best represented in general by the more flexible (and therefore more useful) negative binomial distribution.

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JARGON

Sir,
How much longer must general practice be exposed to the propaganda and brainwashing of sociological concepts, and such jargon as " The Team ", " Care-givers ", " Rôle-play ", and " Decision-making abilities "?

The condescending tone of much of this exposure seems to be part of a contrived conflict between doctors and social workers, where the merit of the latter is often obtained at the expense of the former. Perhaps when social workers have their own lists of clients and open-ended contracts, real conflict might begin, but by then general practitioners might willingly exchange " roles ". Meanwhile, each of these humane professions should co-operate when it is in the interest of the patient, without betraying the principles of their respective disciplines.

There seemed little evidence in the article that the psychotherapy and introspective jargon were any more beneficial than insulin coma therapy was once considered to be in the treatment of schizophrenia. Indeed at times I wondered who really was the patient—the patient, the social worker, or the general practitioner?

Our aim surely is to develop a robust sensitivity and an informed professional detachment, which all professionals hope to realise in their maturity. This maturity will be a long time coming if your contributors' attitudes prevail.

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