

simple as Ronald E LaPorte and colleagues make out.

Firstly, a number of journals have been largely electronic for nearly a decade. The creation of the joint academic network (JANET) and its successor, SuperJANET, has meant that many articles from people based primarily at universities have been submitted and refereed electronically for a number of years. Only in the final stage, when the journal was printed, did these articles meet with paper.

Secondly, citation indices are a poor replacement for peer review so the delay (and cost) in publication due to peer review is likely to remain even with journals on the Internet. New authors have yet to establish a citation record, and to appreciate the value of truly original work takes time. Indeed, a recent paper in *Nature* looked at evidence of whether peer review or citation indices are better tools for judging how original articles are and concluded that, with regard to indicators of the originality of research proposals, citation is not necessarily as reliable as peer review.² The situation gets worse if electronic access is used as a criterion comparable to citation. Like LaPorte and colleagues, the Institute of Biology has found that access by others to its electronic publication on the Internet far outstripped its original expectations, but further analysis has shown that the duration of a large number of accesses was short; this leads to the conclusion that there is a lot of browsing (or surfing?) on the net.

Then there is the misconception that the Internet is free. LaPorte and colleagues refer to subscription to the four big medical journals costing \$400 each, but the Internet is far from free, even if the costs are often largely hidden from the end user. A recent article reported how scientists in the central Brazilian Amazon fear that their Internet connection will be cut as the telephone bill alone comes to \$15 000 a month.³

So far only a few journals appear solely on the Internet despite the advantages that LaPorte and colleagues cite. One of the main reasons for this is that a mechanism has yet to be determined for paying for standardising copy into a house style, arranging for books to be reviewed, and papers refereed (the time delay here being due largely to the referee and his or her selection, not the postal system), and the other costs not related to print and post that go into producing journals.

These reasons and others (for example, my copy of the *BMJ* is far more portable than a portable personal computer, let alone a portable net site, and so can be read on the train, etc) mean that we are a long way from the time when the Internet even begins to kill off paper journals.

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1 LaPorte RE, Marler E, Akazawa S, Sauer F, Gamboa C, Shenton C, et al. The death of biomedical journals. *BMJ* 1995;310:1387-90. (27 May.)

2 Van den Beemt FCHD, van Raan AFJ. Evaluating research proposals. *Nature* 1995;375:272.

3 Amazon scientists seek funds for InterNet link. *Nature* 1995;375:269.

Most consultants deviate from asthma guidelines

EDITOR,—The British Thoracic Society recommends that children who need anti-inflammatory treatment should be given cromoglycate in the first instance (rather than inhaled steroids).¹ We investigated our impression that few British consultant paediatricians use cromoglycate as first line treatment. We sent a questionnaire to 100 randomly selected general paediatricians. They were asked to consider "children aged

between 3 and 7 years old who have never had preventive treatment before and who you think need it now." They were asked to estimate "roughly what proportion of such children would you start off by prescribing sodium cromoglycate for?" There were four responses to choose from: almost all, more than half, less than half, and hardly any. Those who reported using sodium cromoglycate in less than half of the children described were then asked to circle one or more of five reasons for not using cromoglycate more.

Ninety two questionnaires were returned, of which 90 were complete. Respondents estimated the frequency with which they used cromoglycate as first line treatment in the proposed context as follows: almost all, 19; more than half, 30; less than half, 21; and hardly any, 20. The reason most commonly cited for not using more cromoglycate was that it was "less effective than inhaled steroids" (29/41 (70%)). Other reasons included the frequency of doses (24/40 (58%)) and problems with inhalers (12/41 (29%)).

The British Thoracic Society's guidelines state that "patients should start treatment at the step most appropriate to the initial severity." Nevertheless, the spirit of the guidelines is that cromoglycate should be the first step in children. We found that only 21% of British paediatricians use cromoglycate as the first step in "nearly all" children in the context we proposed. Thus, according to their responses to our questionnaire, 79% of British paediatricians deviate from the guidelines.

When audit shows a gap between protocol and practice then either the guidelines or the practice, or both, should change. Unless more evidence supporting the use of cromoglycate is produced, its use seems unlikely to increase. Thus we believe that the British Thoracic Society's guidelines should be changed to match more closely what paediatricians do.

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1 British Thoracic Society, British Paediatric Association, Research Unit of the Royal College of Physicians of London, King's Fund Centre, National Asthma Campaign, Royal College of General Practitioners, General Practitioners in Asthma Group, British Association of Accident and Emergency Medicine, British Paediatric Respiratory Group. Guidelines on the management of asthma. *Thorax* 1993;48(suppl):S1-24.

Management of cardiac arrest by ambulance technicians and paramedics

Paramedics have other uses beside attending cardiac arrests

EDITOR,—The paper by U M Guly and colleagues, of Edinburgh, shows the wisdom of the former managers of the Scottish Ambulance Service who in 1989, before the widespread introduction of paramedic training in Scotland, resolved to equip all frontline ambulances with defibrillators and train staff in their use.¹ Since the start of the "Heartstart Scotland" programme about 1000 patients have recovered completely after a cardiac arrest outside hospital. The fact that the grade of staff using defibrillators does not materially influence such excellent results causes no great surprise because, in the chain of survival after cardiac arrest, the link of early defibrillation is the most positive discriminator and it matters little who provides it.

It might, however, be useful to analyse why paramedics in Edinburgh have not achieved significantly better outcomes for patients. Firstly, the study coincided with the deployment of paramedics in rapid response units; they could not

transport patients. With successful defibrillation a delay often occurred before a vehicle became available for transport, resulting in the paramedics spending longer at the scene, as reported. Secondly, paramedics were often deployed as a secondary response when cardiac resuscitation was initiated by an ambulance technician because breathing and consciousness had not returned after defibrillation. Patients in such cases are less likely to survive. The paramedics' only relevant extended skill at the time of the study was tracheal intubation, which alone is unlikely to be of major benefit in these high risk patients. The immediate survival of such patients receiving a secondary response from the authors' hospital based medical team (a group of patients excluded from this analysis) may be little better than that ascribed to early defibrillation by ambulance technicians.

This study examined only cardiac resuscitation and in a city setting close to a major teaching hospital. It took no account of the contribution of paramedics to the management of other emergencies, including trauma, asthma, and diabetes, especially in remote localities. From the authors' narrow perspective, we fail to see how they can support their conclusion in the key messages box that "the outcome of patients treated by technicians v paramedics does not justify the government's plans." Only a comprehensive review of all aspects of the delivery of services will be sufficient to justify or challenge the government's investment.

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1 Guly UM, Mitchell RG, Cook R, Steedman DJ, Robertson CE. Paramedics and technicians are equally successful at managing cardiac arrest outside hospital. *BMJ* 1995;310:1091-4. (29 April.)

Paramedics were not used effectively

EDITOR,—U M Guly and colleagues found that ambulance technicians with a few hours' additional training performed basic life support with defibrillation as effectively as highly trained paramedics.¹ Their study, however, has several flaws. Allocation to type of ambulance staff was not random. The delay before the arrival of a paramedic as a secondary response, which the authors believe to be detrimental, would not occur if a paramedic was in each frontline ambulance. Our main criticism of the study is that the paramedics were not permitted to use their full training. If the authors wished to prove that cardioactive drugs are ineffective they needed a third arm of the study, in which paramedics were allowed to provide full advanced life support.

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1 Guly UM, Mitchell RG, Cook R, Steedman DJ, Robertson CE. Paramedics and technicians are equally successful at managing cardiac arrest outside hospital. *BMJ* 1995;310:1091-4. (29 April.)

Benefit of paramedics in non-ventricular fibrillation arrests is transitory

EDITOR,—We agree with U M Guly and colleagues' conclusion that intervention by paramedics does not improve the outcome of cardiopulmonary arrest occurring outside hospital when compared with intervention by ambulance technicians using