patients to reduce their cigarette consumption and review smoking policies in psychiatric inpatient units.

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Competition continues in the NHS

EDITOR,—The NHS that Chris Ham describes¹ bears no resemblance to the one in which I work. Far from “slipping away quietly in the night,” competition is a powerful factor in many clinical and managerial decisions. Here are a few examples of competition—not contestability—that I have come across recently. “Business opportunities” (the attempt to take work from colleagues) determine who is seen and how quickly; clinical practice shifts to emulate what “competitors” (colleagues) offer whether or not it is considered to be best or most cost effective practice; and even the drafting of a new disciplinary code is influenced by the desire to “protect” (hide) “commercially sensitive information” (the fact that a doctor is the subject of disciplinary action) from competitors.

Competition no doubt has positive as well as negative effects, but these will remain impossible to disentangle because the dispassionate systematic studies that inform changes in our clinical practice are never undertaken into changes in management practice. Ham’s opinion seems to be based wholly on what politicians say or do not say. His references are to political speeches,^{2 3} and I wonder what corroborative evidence he has from purchasers, providers, or consumers. What Ham shows is not a “middle path for health care” but the massive disparity between the rhetoric of the reformers and the experience of clinicians, managers, and patients involved in the real work of the NHS.

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The Internet

Facilities on the Internet may be abused

EDITOR,—Two recent articles have described the use of electronic mail and the worldwide web.^{1,2} In his editorial on the Internet Enrico Coiera raises the problem of the disclosure of personal information³; we support what he wrote and offer the following additional comments, which are based on abuses of these facilities that we have witnessed that give rise to serious concerns.

● Patients may join discussion groups on, and seek information by using, the worldwide web. They obtain advice that sometimes seems to be given on the basis of little information or on questionable clinical grounds

● Bogus professionals and worldwide web sites with information of unknown validity have inappropriately advised members of the public, who may believe that such advice has sound scientific and clinical substance to it

● In email groups people may give detailed personal and medical information about themselves, relatives, or friends or (in the case of medical professionals) about patients that clearly breaches confidentiality. This information allows people to recognise acquaintances or to seek patients out if they do not already know them. Parents have also openly discussed their child’s psychiatric condition on lists such as the open but professional child and adolescent psychiatry list, described elsewhere⁴

● Advice may be inappropriate because the person giving the advice, or the worldwide web site, is in a different country and subject to different jurisdictions

● One mailing list specifically announces forthcoming clinical trials to people interested in participating as patients in clinical research. This potentially biases the designs used in these trials (for example, through failure to obtain representative samples)

● Virtual support groups exist on the Internet for discussion of specific symptoms or disabilities. Some are dedicated to the discussion of suicidal ideation, and one of these has a high frequency of expression of suicidal ideation and regular discussion of the most efficient techniques for completing a suicidal act. This has legal implications in Britain.

We are concerned about the possible abuse of this facility. We propose that the relevant regulatory bodies of countries on the Internet discuss this issue together to arrive at a universal set of guidelines that should safeguard all those concerned. The Internet is clearly a powerful tool, and thus extra care should be taken in its use.

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Editorial made extravagant claims

EDITOR,—The Internet is a truly marvellous way for computers to communicate with each other, and indirectly it allows people to communicate as well. As one who uses the Internet daily as part of my work, I am an enthusiast. I am surprised, however, by the extravagant claims made by Enrico Coiera.¹

Coiera states that, as a result of the Internet, the provision of information on health will no longer be the exclusive remit of health care professionals. This statement is obviously false: other well known providers of information on health include grandmothers, busybodies, sick people, magazines, and libraries—and all of them have been around for much longer than the Internet. Other features of the Internet that Coiera identifies—accessibility, uncontrollability, lack of confidentiality, and variability with regard to the quality of information provided—apply equally well to the sources I have listed. There is nothing new here.

The author suggests that the Internet will introduce a “free market in information” (the

implication is that, until the Internet came along, health professionals were able to monopolise the information). Since there is already a free market in health information, this hardly seems a possibility. Grandmothers, busybodies, and the other sources I mentioned, including libraries, participate in an existing free market in health information. What, if not a free market, is the vast global enterprise of medical publishing with which we are so familiar? It seems to me that if you make claims like “the changing nature of information delivery brings with it enormous implications” then you should be able to show that the nature of information delivery has changed. My view is that it has not changed: email is not different in principle from an ordinary letter; putting the *BMJ* on the Internet only provides another avenue for people who wish to read it. This may give the *BMJ* a wider readership, but it hardly constitutes a “challenge to health care provision.”

The really big impact of computing on information delivery, which was never so widely heralded as the Internet, resulted from a much more important innovation than a mere communications system. This was the introduction by librarians of computerised indexes such as Medline, which provide access to information through the use of search tools based on multilevel thesauruses and boolean logic (neither of which can readily be used in a printed index). This occurred 30 years ago.

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- 1 Coiera E. The Internet’s challenge to health care provision. *BMJ* 1996;312:3-4. (6 January.)

Encryption algorithms are effective in maintaining security

EDITOR,—Many doctors know little about the Internet, and while David Sellu is right to be concerned about the security issues relating to the increasing use of the Internet by doctors and other health care workers, his short piece does not give a realistic picture of the situation.¹

The suggestion that “Pentagon computers can be infiltrated by hackers almost to the point of starting a nuclear war” owes more to Hollywood than to any documented event. His comment that “once you connect your computer to the Internet the files on your system can be retrieved by anyone with the right resources. If your computer is connected to a network—for instance, in a hospital—the entire information on that network is vulnerable” is couched in such general terms that it is at best misleading and in many circumstances untrue, akin to talking about orchidectomy as the cure for cancer.

Sellu raises concerns about the security of email messages and concludes by dismissing passwords “as one of the least innovative ways of protecting access to computer data.” He seems to ignore the fact that the use of robust public key encryption software can prevent email messages from being read by anyone other than the intended recipient(s) and provide a digital signature, allowing verification that the message is truly from who it seems to be from, and verification that the contents of the message have not been changed.² Such software exists in the form of a programme called PGP (pretty good privacy). So effective are the encryption algorithms used by this program that the United States government forbids its export from the North American continent. Several “kludges” have been used to ensure that an international version is available to anyone. In the “cash strapped NHS” it will be reassuring for people to know that this program is available free from a variety of sources, including anonymous ftp (file transfer protocol) from <ftp://ftp.ox.ac.uk/pub/crypto/pgp/>

pc/dos/pgp262i.zip. Use of this software has been advocated by Ross Anderson, who has drawn up for the BMA interim guidelines on maintaining security in computerised information systems.³

The Internet presents many challenges to the provision of health care,⁴ but our responses as doctors must be based on critical examination of the facts rather than knee jerk responses to media myths and gross generalisations.

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Accessing it is easy

EDITOR,—T J David would advise only serious computer enthusiasts with plenty of spare time to access the Internet from home and states that access is far from easy.¹ Our experience has been entirely to the contrary: we have had few problems with connecting to the Internet from home through a major Internet service provider. Installing a modem and getting a connection took one of us about an hour, using the free trial access software that came with the modem. We have since tried other software and have not found them to require any great computer skill or a lot of spare time. We have found the software to be friendly and connecting to and surfing the worldwide web intuitive. Although the telephone helplines do tend to be overloaded, online forums provide good interactive support, both from their staff and from interested volunteers who are willing to share information and help. The numerous news groups are a lively forum for discussions. We look forward to receiving our daily "Ophthalmic Digest" (emailed from a server in Buffalo, California).

Our experience has been largely trouble free and extremely enriching. We would encourage everyone to explore this new technology providing a timely information source with global reach and to join in the lively discussions in the various news groups. It is true that until now this new medium has been dominated by computer technophiles, but with the simple and effective worldwide web browsers that are currently available and the fall in prices it is now affordable and easy to join and participate. You can safely ignore the jargon, net etiquette, and acronyms in the beginning. It is time to lay to rest the myth that the Internet is only for computer wizards.

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*We received six other letters about accessing the Internet: three agreed with T J David that it was difficult to do and three thought, like Somdupt Prasad and Paul McCormack, that it was easy.—EDITOR

Access is now available in Romania

EDITOR,—I was interested to read Mark Pallen's article about distributing medical information on the Internet.¹ Online access to the Internet is now available in Romania and is widely used, especially

by young doctors. Local medical libraries still lack essential printed medical information, but doctors realise now that electronic data are easier to obtain and much cheaper.

One of the most useful sources for locating Internet medical resources is "Medical matrix—Internet clinical medicine resources guide," a project of the Internet Working Group of the American Medical Informatics Association. It is offered in text form and as an Internet hypertext, hyperlinked database accessible with world wide web browsers. Gopher access to this document is available at the URL (Uniform Resource Locator): gopher://una.hh.lib.umich.edu:70/00/inetdirstacks/medclin:malet.

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- 1 Pallen M. Guide to the Internet. Logging in, fetching files, reading news. *BMJ* 1995;311:1626-30. (16 December.)

MSc in general practice can be done over the Internet

EDITOR,—Mark Pallen calls on medical practitioners to realise the Internet's full potential.¹ The medical world's first masters degree programme to be fully delivered by multimedia teaching and learning has just become available. This MSc in general practice from the University of Derby delivers many of its lessons by the Internet, and all interaction between students and tutors is by email.

Only 50 out of 30 000 general practitioners in Britain are currently undertaking an MSc.² The Royal College of General Practitioners has called for increased and innovative use of new technology to deliver learning based in the home and workplace³ and has criticised the lack of input by learners into the content and running of current courses.⁴ Smith has criticised the inflexibility and inappropriate content of those courses.⁵

The programme in Derby is unusual in being entirely produced by, and having as tutors, a group of working general practitioners, all but one of whom remain in full time general practice. Learners, who are in continuous contact with tutors via the Internet, are encouraged to contribute to the continuing development of the programme. The programme consists of 12 modules, including four for independent study. Subjects such as clinical reasoning, the consultation, and practice and self development are studied.

The programme's aim is to provide mastery over the job of general practice by developing the learners' thinking skills. The multimedia teaching and learning (the use of text, graphics, video, and audio in computer applications) have been developed to simulate the decision making and thinking environment of daily life in general practice. Students can play with the various theories and models that constitute the science of medicine through video and graphical interaction. Critical evaluation of these models and theories represents the hallmark of masters or postgraduate work. The opportunity to test these models in simulated situations is the great strength of multimedia teaching and learning. The programme uses electronic discussion in the exploration of some themes. Students are encouraged to develop their own assignments through the Internet.

The advantages of short periods of intense interactive study when and where the learner chooses remain to be proved. So too does whether such a programme can be run by full time practitioners for full time practitioners. We are confident that we are tapping a huge unmet need for professional development among today's general practitioners and hope to transform the

culture of higher professional training in general practice.

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Health Query Language can be used for collecting data from general practices

EDITOR,—D C Newrick and colleagues make several important points about the need for standardisation in the collection of health data from general practice.¹ These points are relevant to our experience in operating the morbidity and epidemiology data interchange and comparison (MEDICS) scheme, which collects health data from 33 general practices in Northumberland.^{2,3} The health commission feeds back to practices comparative data that illustrate their own data alongside those for other (anonymised) practices.

The authors' paper understates the extent to which it is currently possible to gather data from general practices in a form that is readable by computers. The morbidity information query and export syntax (MIQUEST) project was funded by the NHS Executive Information Management Group and the former Northern Regional Health Authority to develop methods of gathering data from multiple computer systems in general practice.⁴ A specification was developed for the Health Query Language, which can express a wide range of queries.⁵

Health Query Language has been implemented on two major general practice computer systems and is under development for at least two others. In Northumberland it is used to extract data from around half of the practices that participate in the MEDICS project. Its use allows precise specification of the data to be extracted and eliminates the need for rekeying of data for analysis. The workload at the practice is greatly reduced compared with that when questionnaires are used. The language also provides a framework for security and confidentiality.

The use of Health Query Language eases the technical problems associated with the collection of data from general practice, allowing all parties to concentrate on issues such as coding standards, analysis, and interpretation of data.

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