generally mild; cutaneous petechiae were seen in 14%, transient haematuria in 3%, mild pancreatitis in two patients, and biliary colic (the presenting symptom) in 35%.

These results are exciting, but we must be cautious. There is no treatment that will dissolve fragments from stones containing calcium, and only patients with stones that are predominantly radiolucent (presumed cholesterol rich) can be considered for this treatment. The gall bladder must be radiologically functioning—that is, it must opacify during oral cholecystography and contract in response to a fatty meal. With the further restrictions on stone size and number, the Munich group thinks that perhaps only 5-10% of patients with gall stones referred for shock wave lithotripsy are in fact suitable for this treatment.[11] Some modification may be necessary to the management after lithotripsy. Treatment with bile acids after stone fragmentation may speed dissolution and may reduce the incidence of biliary colic, but its inhibitory effect on gall bladder contraction might hinder expulsion of the residual debris.[12] Comparable rates of recurrence of gall stones to those seen after dissolution with bile acids alone seem probable, although the follow up is thus far too short to provide data on recurrence. Finally, the technology is extremely expensive, with some systems costing more than £1m.

Less expensive systems are being developed. The Wolf lithotripter generates piezo-electric pulses that are transmitted through a water bath container. This obviates the need for the patient to be immersed in water and is so well tolerated that neither analgesia nor sedation is required. The Wolf device is being evaluated in the department of surgery at Sheffield University and also at the London Bridge Hospital.

The place of this product of the white hot technological revolution in managing patients with gall stones needs careful evaluation in a cool hour. For most patients cholecystectomy, which carries a mortality of 0·4% and a morbidity of 7%,[13] still looks like a good option.

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Greeks bearing gifts

As early as 1980 the Royal College of General Practitioners and other organisations were predicting that the computerisation of general practice would produce a rich harvest of much needed information.[1,2] Unfortunately the Department of Health and Social Security has not been convinced of the need to sponsor high quality software for practitioners that would promote standardisation and facilitate the collection of information. In Scotland, in contrast, the Scottish Home and Health Department has supported a system that has gained wide acceptance.[3] Some drug companies, particularly Ciba-Geigy, have offered free or cheap software to general practitioners, and the latest development is that VAMP Health, a major supplier of general practice computer systems, has offered 1000 free computers to practices and AAH Meditel, another supplier, has offered 2000. If these offers are taken up then the number of computerised practices will be increased sixfold.[3] In exchange, the companies will collect and sell data centrally. When these two companies are willing to offer as much and more than our negotiators have been requesting of the DHSS it may seem churlish to raise doubts, but we must look carefully at the offers. Indeed, the General Medical Services Committee has already drawn attention to the benefits and disadvantages, issued guidelines, and is to coordinate an independent advisory body to oversee the schemes.[4]

The first concern is confidentiality. Although isolated practice microcomputers are as secure as manual records, one third of patients perceive them as threatening confidentiality.[5] Doctors must ensure that not only is confidentiality preserved but that it is seen to be preserved. The protocols for information exchange between the practices and the external organisation must be strictly applied.[6] Patients must not be identifiable, and the practice's identity must be hidden from the user who buys the information; the external organisation should never interactively quiz the practice's database through electronic links.

If the information from these systems is to be valuable it must be of high quality. The purchasers are unlikely to pay the high charges envisaged for information that is incomplete or inaccurate. Data collection is difficult and requires a change in working habits; many practices have not yet adapted to manual recording. Yet in one scheme practices will default on their contracts if any partner fails to record 95% of all prescriptions and encounter diagnoses, and the financial penalties for failing will be substantial. The problem of motivating all partners to record to high standards was illustrated in one research practice, where at the end of the first year three partners had virtually abandoned using the computer during consultations and the other two used it in under half their consultations.[6,7]

Recording of encounters and prescriptions by doctors during consultations, as envisaged in both these schemes, creates another potential problem—time. Each minute added to the average consultation means over 100 extra hours a year for the average doctor. This must either be an addition to his normal workload or must squeeze the patient's consulting time.[8] The sacrifice of consulting time might be acceptable if the benefits were clear, but they are not. Computers can be effective at prompting prevention[8,9] and have been beneficial in some systems for repeat prescribing.[10] But the "Micros for GPs" scheme showed no overall time saving for practices from computerised repeat prescribing,[11] and benefits to individual patient care from computer encounter recording have not been shown.

To be effective in postmarketing surveillance of drugs the new systems must record prescriptions and patient encounters to a high standard. The current VAMP prospectus, however, envisages recording only consultation diagnoses that result in a prescription or admission: all potential side effects that result in neither will thus be missed. This would be less serious if the new computer systems were to have no impact on the current manual systems, but this diffusion of activity might reduce reporting through the Committee on Safety of Medicines' yellow card scheme and the Drug Safety Research Unit's prescription event monitoring scheme.

Finally, taking up the offer of these free computers may affect the future development of general practice itself. The information gathered in these schemes will yield detailed statistics on workload and efficiency and offer insights into the care received by certain patient groups, especially those with chronic diseases. General practitioners will have no control over the analysis and presentation of these figures and will be vulnerable to selective misrepresentation. The alternative of the profession collecting, paying for, and controlling the information is probably, however, unrealistic.

The potential revolution in general practice computing represented by the offer of 3000 free computer systems must be judged therefore against substantial non-financial costs and some financial risks. To be effective this exercise must recruit many practices with little or no previous computer experience, which must then collect consistently high quality information for many years. This is unlikely to be achieved without substantial disruption of consultations and working practices, and this new initiative must therefore be viewed with extreme caution.

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Gold treatment for rheumatoid arthritis: reassurance on proteinuria

Gold shares the problems of other second line drugs for rheumatoid arthritis in that its benefits are a long time coming but its toxicity is more quickly and readily apparent. In patients with rheumatoid arthritis gold reduces the concentration of immunoglobulins, the erythrocyte sedimentation rate, the number of circulating lymphocytes, and the phagocytic activity of macrophages and polymorphonuclear leucocytes. All of these effects suggest an anti-inflammatory action, but the ability of gold to halt erosive changes in bone is hardly proved. Some trials have shown functional and clinical improvement but have not shown that erosive changes to bone have been modified.[1,2] Other trials have suggested a slowing of bony damage,[3,4] but nobody has shown that such damage can be reversed.

Until the recent introduction of an oral preparation[5] gold was usually given intramuscularly as sodium aurothiomalate or aurothioglucose. Both have serious toxic side effects in about a third of patients, including a rash, exfoliative dermatitis, eosinophilia, thrombocytopenia, agranulocytosis and aplastic anaemia, jaundice, proteinuria, and lung changes. In total deaths from gold treatment are rare, but Girdwood has suggested that in Britain deaths caused by sodium aurothiomalate related to the number of prescriptions exceed those caused by any other drug.[6]

Proteinuria occurs in 2-19% of patients being treated with gold and is sufficiently severe to cause the nephrotic syndrome in 10-30% of those affected. Proteinuria may appear at any time during gold treatment, and its severity and duration are not related to the total amount of gold received.[7] Thus a monthly blood sample to exclude agranulocytosis and a dip stick test for proteinuria are needed for all patients taking gold from the outset of their treatment. Proteinuria may be prolonged even after withdrawal of gold, and it has not been clear whether the proteinuria is reversible in all cases. Patients with persistent proteinuria have been followed up for as long as 26 months, and in these patients the condition was thought irreversible. Conventional treatment has been withdrawal of gold followed by treatment with high dose steroids in those with high protein loss.

Reassuring news now comes from the findings of Hall *et al* (p 745). They investigated gold nephropathy in 21 patients for up to 130 months, and in each case the proteinuria