substantially increase the cost per admission. In addition, we are responsible for transporting and escorting our patients for court appearances; this cost would otherwise be met by the Home Office. Should local purchasers be responsible for these costs in future?

We are convinced that the proper place for mentally disordered prisoners requiring hospital treatment is hospital. We have shown that the problems described by Needham-Bennett and Cumming are not insoluble; the solution is not legislative but financial. The delays inherent in the resolution of serious cases inflate our costs. We have expressed our concerns to the Home Office but have received only an acknowledgement. In the absence of any acceptance of joint responsibility by the Department of Health and the Home Office for funding services for mentally disordered remand prisoners, we believe that the current situation is a disaster that is already happening.

KEVIN MURRAY
Consultant forensic psychiatrist

MARTIN LOCK
Clinical research fellow

Bentham Unit,
West London Healthcare NHS Trust,
Southall,
Middlesex UB1 3EU

AKINTUNDE AKINKUMNI
Senior registrar

Camlet Lodge Regional Secure Unit,
Chase Farm Hospital,
Enfield,
Middlesex EN2 8JL

TIM WEAVER
Research fellow

ADRIAN RENTON
Senior lecturer in public health medicine

Department of Epidemiology and Public Health,
Imperial College of Science, Technology, and Medicine,
St Mary's Hospital Medical School,
London W2 1PG

- 1 Needham-Bennett H, Cumming I. Waiting for a disaster to happen. *BMJ* 1995;311:516-7. (19 August.)
- 2 Robertson G, Dell S, James K, Grounds A. Psychotic men remanded in custody to Brixton prison. *Br J Psychiatry* 1994;164:55-61.
- 3 Home Office and Department of Health and Social Security. *Report of the committee on mentally abnormal offenders (the Butler report)*. London: HMSO, 1975. (Cmnd 6244.)
- 4 Department of Health and Home Office. *Review of health and social services for mentally disordered offenders and others requiring similar services (the Reed report)*. London: HMSO, 1992. (Cm 2088.)

Transverse myelitis unlikely to be due to measles, mumps, and rubella vaccine

EDITOR,—K A Joyce and J E Rees report on a 20 year old man who developed subacute transverse myelitis two to three weeks after immunisation with measles, mumps, and rubella vaccine.¹ Five days after vaccination he developed a feverish exanthematous disease, which fluctuated for two weeks and preceded the onset of the neurological symptoms. Postvaccination transverse myelitis was diagnosed when a significant rise in titres of rubella antibodies was observed. The authors suggest that antibody status should be checked before vaccination.

The course of events is incompatible with rubella related to the vaccine. Rubella-like disease related to vaccination develops nine days after vaccination at the earliest and does not last as long as two weeks. An increase in rubella IgM antibodies is possible after vaccination. Measurement of the titres cannot differentiate between wild virus and the attenuated vaccine strain. As the incubation period of wild rubella is 14-21 days² the patient may have had natural rubella.

Postvaccination transverse myelitis is diagnosed by exclusion, and serological tests should include tests for viruses such as echovirus and herpes simplex virus as well as coxsackievirus groups A

and B—particularly because the patient had a transient rash over his upper body.

Behringwerke has distributed about 8.8 million doses of monovalent rubella vaccine and measles, mumps, and rubella vaccine in the German market since 1980. No case of suspected transverse myelitis has become known to us. On the assumption that the yearly incidence of transverse myelitis in Germany is similar to that in Minnesota (approximately 7.4/100 000 people),³ postvaccination transverse myelitis after rubella vaccination is unlikely. Furthermore, the three other published cases of myelitis to which Joyce and Rees refer occurred after the administration of vaccines other than those currently used. There is insufficient evidence to indicate a causal relation between the currently used human diploid cell rubella vaccines and neuropathy.⁴

In conclusion, Joyce and Rees do not provide sufficient evidence to show that this case of transverse myelitis was caused by measles, mumps, and rubella vaccine. The need to check the patient's antibody status before vaccination cannot be deduced from this case report.

REINHARD FESCHAREK
Head of pharmacovigilance

HERMANN DASS
Assistant director

Behringwerke AG,
Drug Surveillance Department,
PO Box 11 40,
35001 Marburg,
Germany

- 1 Joyce KA, Rees JE. Transverse myelitis after measles, mumps, and rubella vaccine. *BMJ* 1995;311:422. (12 August.)
- 2 Peter G, Lepow ML, McCracken GH, Phillips CF, eds. *Report of the committee on infectious diseases*. Elk Grove Village: American Academy of Pediatrics, 1991.
- 3 Beghi E, Kurland LT, Mulder DW. Incidence of acute transverse myelitis in Rochester, Minnesota, 1970-1980, and implications with respect to influenza vaccine. *Neuroepidemiology* 1982;1:176-88.
- 4 Howson CP, Howe CJ, Fineberg HV, eds. *Adverse effects of pertussis and rubella vaccines*. Washington: National Academy Press, 1991: 199.

General practitioners' depression

EDITOR,—The Personal View giving a general practitioner's account of her depression and her reflections on her work is honest and courageous.¹ I found it helpful and encouraging. I am a 37 year old full time female general practitioner who is married with two small children. While I view my job as secure and have no immediate plan to move, I find it depressing to think that I may be in the same place for 30 years. Five years is as much as I can cope with. For a while I felt guilty about this abandonment of the accepted norm for general practice—but no longer. The NHS is changing so rapidly that we must all embrace the possibility of career changes, as the new registrars in general practice seem to be doing.

HESTER DUNLOP
General practitioner

Fieldhead Surgery,
Golcar,
Huddersfield HD7 4QQ

- 1 I should have been more selfish. *BMJ* 1995;311:957. (7 October.)

Notification of tuberculosis is compatible with venereal diseases regulations

EDITOR,—The Department of Health shares Alexander S Pym and colleagues' concern that undernotification of cases of tuberculosis, particularly in association with HIV infection, could have important public health consequences.¹ Undernotification causes difficulties for con-

sultants in communicable disease control when they carry out their responsibilities for local monitoring and control of tuberculosis and may result in contacts of infectious patients not being screened for the disease.

Concern about confidentiality has been given as one reason for failure to notify patients with HIV infection who have tuberculosis. Some clinicians are thought to be under a misapprehension that the NHS Venereal Diseases (1974) Regulations take legal precedence over the legislation on notification. This is not the case, nor is notification incompatible with the regulations, since the purpose is to identify and prevent further cases. The HIV status of the patient does not need to be stated on the notification form.

In response to concerns about possible under-notification of tuberculosis, last April I wrote to all consultants in genitourinary medicine, consultant physicians, and consultant paediatricians to remind them of their statutory duty to notify known or suspected cases of tuberculosis under the provisions of the Public Health (Control of Disease) Act 1984.

J S METTERS
Deputy chief medical officer

Department of Health,
London SW1A 2NS

- 1 Pym AS, Churchill DR, Coker RJ, Gleissberg V. Reasons for increased incidence of tuberculosis. *BMJ* 1995;311:570. (26 August.)

Problem based learning at medical school

Some people think it's thrilling . . .

EDITOR,—Having survived a traditional medical education in Britain, I have spent the past 14 months working at McMaster University, during which time I tutored a problem based learning group. I am glad to learn from John Bligh's editorial on problem based learning that the attitude of some universities to undergraduate medical study has changed greatly.¹ Continued learning should be an integral part of a professional career. Medical students in a traditional programme fill folders with lecture notes giving the currently accepted "facts," but this method of learning is unavailable after graduation. Doctors must develop a new learning strategy if learning is to continue in their postgraduate years, but, often, they stick to the strategies that they used as medical students.

Problem based learning allows students to develop a learning strategy that is effective throughout their professional life, but it is not practised in a vacuum. As in professional life, previous knowledge is not ignored but used by the tutorial group to formulate group and individual learning objectives. Once these have been agreed by the group the individual students are free to address those objectives in ways that are relevant to them. They may use books, computerised literature searches, or journals or spend time in a clinic talking to patients and family; many will also talk to relevant staff. This new knowledge is then brought back to the group.

Students recognise that their educational development is best served by cooperation within the group and by a free exchange of ideas and uncertainties. Removing formal examinations from the undergraduate course so that students see their peers as colleagues rather than competitors encourages this. A dual track system exists as examinations throughout the undergraduate course are usually considered important by proponents of the traditional approach. With the traditional approach students are tempted to spend more time on the part of the course that leads to examinations and to compete against each other rather than strive toward understanding.

Self evaluation and group evaluation also play an important part in the efficient running of a problem based learning group: they allow students to identify their own strengths and weaknesses and thus help to modify individual and group learning processes. Tutors' effectiveness is also scrutinised. Evaluation not only helps to improve individual and group function but also identifies those students who are having difficulties, so that remedial strategies can be started.

Students do learn effectively in a problem based learning system. They learn not only about the basic science of a problem but also about the many ethical considerations of modern medicine and the impact of disease on the family and community. It is thrilling to work with a group of students who enjoy learning medicine: the tutor learns a lot too. Having read Bligh's editorial, I will return to Britain with more optimism about the direction of medical education there.

RICHARD FARROW
Clinical fellow

Department of Radiology,
Faculty of Health Sciences,
McMaster University,
Hamilton, Ontario,
Canada

1 Bligh J. Problem based, small group learning. *BMJ* 1995;311:342-3. (5 August.)

... but not all do

EDITOR,—John Bligh informs us that problem based learning is the cynosure of contemporary pedagogy.¹ His editorial is replete with vogue phrases: "preferred active learning" (what is inactive learning?), "interpersonal skills," "learning involvement," etc. As a member of the academic staff of a Canadian medical school I can assure Bligh that not all Canadian academic staff share his admiration for McMaster University's teaching methods. Medical educators cannot avoid the responsibility for inculcating many facts, and medical students cannot be expected to function in a factless vacuum while trying to become knowledgeable through heuristic osmosis. McMaster University realised this several years ago and changed its methods because of problems that its graduates had in passing the examination to become a licentiate of the Medical Council of Canada.

In my student days at Sheffield University I wondered about the relevance of what we were taught, but now I marvel at how perspicacious my teachers were. Francis Davies's lectures on neuroanatomy were a paradigm of clear thinking, free of jargon and adorned by mordant wit. Nowadays, when I attend some of the problem based learning sessions I am left feeling that many members of the academic staff have as much charisma as Uriah Heep pontificating on a slag heap in Wales on a wet January morning.

When graduates of McMaster University move to other medical schools and become house officers their knowledge is usually less than that of other Canadian graduates, though they soon catch up. Bligh suggests that this is because of the "McMastery" and that they retain more. I suggest that it is because they were taught less and therefore have less to forget. Since most students at McMaster University are older than those elsewhere and have often held down a position in a profession such as pharmacy or music or have been on the academic staff of a university, they work harder and are better motivated than students elsewhere, and their interests are more catholic. Canadian schools could learn from McMaster University's method of selecting medical students.

I note that Bligh also refers to Weatherall's paper entitled "The inhumanity of medicine."² That paper is an indictment of modern medicine. When I was in training in the 1950s I never heard of, or saw, anything as callous and heartrending as the

events described by Weatherall. I notice that residents now do not have the dedication to providing service that was apparent 30 to 40 years ago.

Lastly, the General Medical Council, with its enthusiasm for change, would do well to remember Burke's dictum, "To innovate is not to reform."

W K C MORGAN
Professor of medicine

University of Western Ontario,
University Hospital,
London,
Ontario,
Canada N6A 5A5

1 Bligh J. Problem based, small group learning. *BMJ* 1995;311:342-3. (5 August.)

2 Weatherall DJ. The inhumanity of medicine. *BMJ* 1994;308:1671-2.

Problem based learning has been used for years in general practice in London . . .

EDITOR,—We were interested to read in John Bligh's editorial that problem based, small group learning "seems at last to be coming in from the cold."¹ This method of learning has been used successfully in both postgraduate and undergraduate education for general practice in south London for over 20 years. Local half day release courses (a statutory part of vocational training for general practice) have spawned many young practitioner groups, which meet regularly for continuing education and mutual support using problem based, small group learning.

Why has this method of education not taken root in British medical schools? Could it be because it is fundamentally different from the teachers' traditional, top down approach? It values their views and prior experience and empowers them to direct their own learning. Students value the knowledge and experience of their peers, which thus allows collaborative rather than competitive learning.

To be successful, these radical changes in educational methods have to be supported by teachers and the structures in which they work. Teachers have to become facilitators of learning as well as transmitters of knowledge. This entails a transfer of power and control to students, which is perhaps harder to sustain in traditional hierarchical medical schools. Changes in learning methods will be successful only if teachers can be motivated and trained to acquire the new skills required.

The culture and structure of postgraduate education for general practice support problem based learning in small groups. Introducing similar changes in medical schools will require major changes in the schools' organisation and finance. Inevitably, more teaching will be done by clinicians, especially in primary care. Jones and Higgs recently gave a more detailed account of the resources needed for such a change.²

The change could be an exciting challenge, involving greater collaboration between undergraduate and postgraduate teachers as they seek to optimise the balance between the use of didactic teaching and problem based, self directed learning. It would be a shame if these valuable educational initiatives were stifled by being absorbed into the present rigid medical school structure or withered because medical schools were not sufficiently motivated to change.

RICHARD SAVAGE
Course organiser, Guy's and St Thomas's
vocational training scheme
SUZANNE SAVAGE
Associate adviser, South Thames region (east)

53 Dalkeith Road,
London SE21 8LT

1 Bligh J. Problem based, small group learning. *BMJ* 1995;311:342-3. (5 August.)

2 Jones R, Higgs R. The impacts of increased general practice teaching in the undergraduate medical curriculum. *Education for General Practice* 1995;6:218-25.

. . . and has been introduced successfully in Manchester

EDITOR,—John Bligh's editorial on problem based learning sets out the current developments in undergraduate medical education in Britain.¹ The lead time for change is long. In Manchester the seeds of reform of the curriculum date back to 1987, and in 1994 the medical school became the first in Britain to introduce problem based learning as the main learning strategy for first year students, with its continuation throughout a new curriculum.

As Bligh states, an important element in developing the curriculum is identifying the core content. We have conducted a major exercise, involving over 200 people in 40 specialties and work settings. The first step was to agree on a list of 206 index clinical situations in which we would expect our newly graduated doctors to have some competence. These were then broken down into over 11 000 items of skills, attitudes, and knowledge in four different domains. There is a large amount of overlap, and the core content is being condensed from the material submitted. We have found that in one semester a quarter of the index clinical situations are embraced, to some degree, by the working problems.

Our experience of introducing problem based learning mirrors that of others, with initial apprehension being slowly overcome. As part of an extensive evaluation we found that the proportion of medical students who dislike the method of learning has fallen during the year from 9% (17/187) to 5% (7/155), while the proportion of those who like it has increased from 37% (69/187) to 59% (91/155) (the total numbers are the numbers of students who returned our questionnaire (semester 1, 77%, and semester 2, 64%; 243 students in the year)). It is important to match the assessments to the learning styles, and to do this we have introduced a new integrated system.

Bligh does not discuss use of the library. Students now spend a much greater proportion of their time using the library's resources, and 136 of 155 students said that, when using the library, they were stimulated to find out more than simply met their learning needs. We involved the library staff in planning the curriculum from an early stage.

As in Maastricht, we think that it is important to have a skills programme running in parallel with problem based learning. We have established skills laboratories and used the core content exercise to determine what core skills should be acquired.

The inception of a new problem based learning curriculum in Manchester has been successful; the key has been having a team of people dedicated to curriculum reform.

P A O'NEILL
Curriculum facilitator

Faculty of Medicine,
University of Manchester,
Manchester M13 9PT

1 Bligh J. Problem based, small group learning. *BMJ* 1995;311:342-3. (5 August.)

Mobility after amputation of a lower limb

EDITOR,—Minerva's synopsis¹ of a review on mobility after amputation of a lower limb² is misleading. Data collected by our subregional prosthetic centre indicate that 85% of patients have amputations because of peripheral vascular disease and diabetes and that the overall prevalence of diabetes in patients with amputations is in the region of 35%. After assessment for rehabilitation and prosthetic management even the elderly patients become less dependent on other people because they can transfer themselves from their bed to a chair, stand, and achieve some indoor