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

mobility. A reduction in dependence is a notable feature to aim for to decrease the level of disability. Even though patients who are able to walk after amputation may become wheelchair dependent within five years, they have a good quality of life for up to five years and may maintain this from a wheelchair.

The suggestion that it is best to forgo prosthetic rehabilitation and issue a wheelchair to elderly patients who have had a lower limb amputated is incorrect. Minerva is right, however, to say that the home environment needs to be adapted for wheelchair independence.

J R KULKARNI

Consultant in rehabilitation medicine

University Hospital of South Manchester,
Nell Lane,
Manchester M20 8LB

1 Minerva. *BMJ* 1995;311:578. (26 August.)

2 Collin C, Collin J. Mobility after lower-limb amputation. *Br J Surg* 1995;82:1010-1.

Scientific and letter fraud in the Victorian era

EDITOR,—The issues of scientific and letter fraud^{1,2} were closely linked in the Victorian era, as is exemplified by the actions of Sir Edwin Chadwick and Sir John Simon. These two men dominated public health and were known for their unusual approaches.

Chadwick was influential in government circles. He packed committees with people sharing his views and altered the results of investigations.³ Simon, the chief medical officer and an opponent of Chadwick, refrained from airing his differences with the government in public.⁴ Nevertheless, he believed strongly that the political issues needed to be debated openly. By sending anonymous letters to the *Times* he ensured a balanced public debate of crucial issues, such as the registration of medical practitioners, without undue bias from the influence of his position.⁵

Whereas Chadwick might be chastised for scientific fraud, Simon should not be associated with letter fraud. Unsigned contributions still have a place in peer reviewed professional journals, whether as letters to the editor, viewpoints, or editorials.

LINDSAY EDOUARD

Professor of community health and epidemiology

College of Medicine,
University of Saskatchewan,
Saskatoon S7N 0W8,
Canada

1 Lock S. Lessons from the Pearce affair: handling scientific fraud. *BMJ* 1995;310:1547-8. (17 June.)

2 Craft N. Letter fraud. *BMJ* 1995;311:523-4. (26 August.)

3 Brockington CF. *A short history of public health*. London: Churchill, 1956;23, 27, 36.

4 Simon J. *English sanitary institutions, reviewed in their course of development, and in some of their political and social relations*. 2nd ed. London: John Murray, 1897;230-4, 272, 465.

5 Cule J. *A doctor for the people—2000 years of general practice in Britain*. London: Update Books, 1980:94.

A living will is not euthanasia

EDITOR,—We were concerned to read Ian Robertson's description of living wills.¹ He states that they are "quasilegal," but this is untrue. In the landmark Canadian case of *Malette v Shulman* Dr Shulman was found liable in battery for ignoring Mrs Shulman's advance refusal of treatment.² In the more recent English case of *Airedale NHS Trust v Bland* three judges in the House of Lords confirmed the legal effect of advance statements.³

Robertson states that "the whole concept of the living will is...based on the very naive notion of the basis of motivation, emotion, and intent in the human mind." In fact, the basis of the living

will is the principle that any adult has the right to refuse medical treatment for reasons that may be "rational, irrational or for no reason"⁴ and that "the same principle applies where the patient's refusal has been expressed at an earlier date."⁵ If this is what Robertson means by "motivation, emotion, and intent" then we would take issue with his description that such factors are "very naive."

Robertson confuses living wills with euthanasia. Euthanasia is illegal in Britain, and a living will cannot demand an illegal act. An adult of sound mind can, however, legally refuse any medical treatment, including nutritional support and hydration. A living will that refuses life supporting treatment under certain circumstances does no more than allow a mentally competent person to extend his or her present rights to a future period when he or she no longer has the mental capacity to make decisions.

To argue that injury to the brain changes one person into another is to strike at the heart of individual autonomy. It leaves the fate of the mentally incapacitated adult entirely in the hands of his or her doctor, whose judgment about treatment might be far from what the person would have desired.

No adult is obliged to complete a living will. But it is surely right that a legal mechanism exists to allow mentally competent adults to make advance refusals about medical care that will be respected if they later lose the capacity to make those decisions themselves.

STEVEN LUTTRELL

Senior registrar

CELIA BIELAWSKA

Consultant physician

Department of Health Care for Older People,
Whittington Hospital,
London N19 5NF

1 Robertson I. A will to live. *BMJ* 1995;311:457. (12 August.)

2 *Malette v Shulman* (1991) Med LR 162 (Ont CA).

3 Per Lord Keith, Lord Goff, and Lord Mustill. *Airedale NHS Trust v Bland* (1993) 1 All ER 821.

4 Per Lord Templeman in *Sidaway v Board of Governors of the Bethlem Royal Hospital* (1985) AC 871.

5 Per Lord Goff. *Airedale NHS Trust v Bland* (1993) 1 All ER 821.

Accident and emergency doctors lack proper training in trauma

EDITOR,—Since the Royal College of Surgeons reported on 1000 deaths from trauma in 1988¹ the upgrading of trauma care in Britain has been widely debated. Training in advanced trauma life support (ATLS) is seen by many people as a vital part of this upgrading process.^{2,3} Skinner, writing on behalf of the Royal College of Surgeons in 1993, stated that "all doctors involved in the initial resuscitation and subsequent management of patients with major injuries should possess a current ATLS provider certificate from the RCS."⁴ Senior house officers form the majority of the workforce staffing accident and emergency departments. They should be trained in advanced trauma life support in accordance with the college's guidelines.

Thirteen major accident and emergency departments provide trauma care for the several million people who live in the Southwest region. An audit was conducted in June 1994 to establish the proportion of senior house officers working in accident and emergency in the region who had a certificate in advanced trauma life support. The audit was repeated 12 months later. It was found that only 11 (16%) of the 68 senior house officers working in the 13 departments in 1994 and only nine (11%) of the 70 working there in 1995 had a certificate in advanced trauma life support.

There are several possible reasons for this lack of certification. The Royal College of Surgeons' data on the career stage at which doctors received their

training in advanced trauma life support suggested that only 0.25% were trained before full registration. Most senior house officers work in accident and emergency in their first or second post-registration job and hence have not had access to a course when they start their job. The problem is exacerbated because having passed a part 1 examination of a recognised college is a prerequisite for being allowed on to many courses. Many senior house officers are on the waiting list for courses while doing their accident and emergency attachments, but waiting times can be up to a year, and in a lot of cases trainees have moved on from accident and emergency before they receive their training. This is despite the expansion in the number of courses available.

The principles of advanced trauma life support help relatively inexperienced doctors to deal with complicated clinical situations in a controlled and structured way.⁵ They thus improve the overall standard of patient care. Senior house officers working in accident and emergency should be trained in advanced trauma life support; a gold standard would be certification as a prerequisite for applications to work as a senior house officer in accident and emergency posts, or official training in advanced trauma life support could be built in to induction courses in accident and emergency. To achieve this, access to the courses needs to be improved. This has major implications in terms of resources.

We are conducting a national audit to record the numbers of senior house officers in Britain who have been trained in advanced trauma life support. It will be interesting to see if the figures from the south west reflect a more widespread problem.

A J PRICE

Senior house officer, general surgery

G HUGHES

Consultant in accident and emergency

Bristol Royal Infirmary,
Bristol BS2 8HW

1 Royal College of Surgeons. *Management of patients with major injuries. Report of a working party*. London: RCS, 1988.

2 Driscoll PA. Trauma: today's problems, tomorrow's answers. *Injury* 1992;23:151-8.

3 Teanby DN, Gorman DF, Boot DA. (1993). Regional audit of pedestrian accident care. *Injury* 1993;24:435-7.

4 Skinner DV. Advanced trauma life support. *Injury* 1993;24:147-8.

5 Drummond F. ATLS courses. *Arch Emerg Med* 1993;10:386.

Review of prescribed treatment for children with asthma

Weaknesses in methods and analysis limit conclusions

EDITOR,—Analysis of a computerised prescribing database showed that 9362 children were prescribed some form of preventive treatment for asthma. Of these, 1358 received sufficient repeat prescriptions to suggest that they were consistently receiving prophylactic treatment.¹ Several weaknesses in this analysis limit the interpretation and conclusions reported.

Firstly, the author assumes that all children remained on the practice list for a whole year. Morton-Jones and Pringle estimated that 30.6% of people on a practice list registered or de-registered within one year.²

Secondly, there is an implicit assumption that asthmatic patients require preventive drugs continuously, and this may indeed be stated in guidelines. Some, however, will be newly diagnosed during the year, while for others the problem will no longer be active and treatment will be stopped. The increased proportion of patients using inhaled steroids and the decreased proportion using inhaled sodium cromoglycate identified during this study emphasises the dynamic nature of patient management. In addition, there will be