

# Teaching medical interviewing in vocational training

B. S. COLE, MB, MRCP

General Practitioner, Norwich

**SUMMARY.** A study of the content and methods of medical interview teaching is reported and proposals made for conducting this training in vocational training schemes for general practice.

### Introduction

IT has been suggested that the consultation or medical interview (MI) should lead the doctor not just to a diagnosis, but to a complete understanding of the patient's problems (Balint, 1964). Unfortunately, the evidence is that medical students and doctors make important omissions when conducting medical interviews (Sanson-Fisher and Maguire, 1980), despite efforts in most medical schools to teach at least history-taking. Not surprisingly, trainees are not exempt from this tendency; Knox and colleagues (1979) showed that a group of trainees actually performed worse than a group of medical students. Whatever the rights and wrongs of undergraduate education, trainees need to be taught MI skills. Those well taught in medical school will need to adapt their skills to general practice and to the undifferentiated presentations, the constraint of time and the continuing, personal doctor-patient relationships unique to our branch of medicine.

The MI depends on six variables:

1. The trainee's skill in the MI.
2. The time available to deploy skill.
3. The trainee's motivation to display skill.
4. The trainee's personality and attitude to psychosocial and interpersonal factors in family medicine.
5. The trainee's physical, personal and emotional environment.
6. The type of problem.

This paper addresses the first of these—skill—but the other variables make equal claims on our attention as teachers.

If an instrument were available for measuring MI skill, then one could design studies to investigate the effects of different types of training while controlling the other variables. Such an instrument should ideally be validated by both clinical outcomes such as symptom relief, morbidity and mortality, and by behavioural ones such as patient satisfaction, patient concern and overall functioning. Compliance with medical advice, an outcome which may relate to some of the above, could also be used. It is unfortunate that no such instrument exists, and good research which could tell us what and how to teach is lacking. Apart from this, Sanson-Fisher and colleagues (1981) have shown that most of the work which has been done falls down on method, either by failure to have a proper control group or to control adequately the other variables listed above.

### Aim

To develop guidelines for medical interview training which will be useful to course organizers and trainers.

### Method

Two sources of data were used. Firstly, the literature was searched and reliable and useful findings extracted. Secondly, while on prolonged study leave, I discussed the issues with MI teachers and researchers and watched MI teachers in action. The resulting impressions and observations are reported.

### Results

The results are described and discussed under two headings, 'learning objectives' and 'teaching methods', although, as in any system, these relate to each other. A major difficulty is that in educational research into MI training, workers use different learning objectives with different teaching methods, so that it is impossible to tell whether changes are due to the material taught or the method of teaching it.

*Learning objectives*

*Research into MI learning objectives*

I found very little work relating directly to content or objectives; most had to do with the effects of doctor attitudes and patient factors on MI skill, as measured by such things as diagnostic accuracy or time spent with psychological problem patients (Marks *et al.*, 1979; Raynes and Cairns, 1980).

One morbidity outcome study does have a bearing on content. Stewart and colleagues (1979) measured doctors' awareness of all the problems of their chronic sick patients, comparing it with the patients' problems as judged independently. Where the doctors knew all about the physical, psychological and social problems, and all mixtures thereof, their patients had significantly better outcomes. This paper is compelling evidence for establishing the collection of a broad range of information as an objective for the MI.

There also exists published work on the relationship between the process of the MI and certain outcomes. Compliance with medical advice relates directly to the patient's feeling that the doctor has shown understanding and concern, by establishing the patient's own beliefs and concerns about the problem (Becker, 1979). Both compliance and patient satisfaction have been shown to be related to the patient being encouraged to be actively involved in making decisions about his or her own health (Krantz *et al.*, 1978).

*Evidence from other disciplines*

Rogerian counsellors have shown that good outcomes for clients relate to the counsellor achieving accurate empathy with the client, having warmth or unconditional respect and being able to be genuine and personally authentic in the relationship (Traux and Mitchell, 1971). It is suggested that these three conditions are highly relevant to family medicine, since it is accepted that counselling of this type is an important part of the doctor's job.

*Research into the decision-making process in medicine*

It is of the utmost importance that what is taught should be faithful to the way in which doctors try to solve problems in the MI.

It has been assumed that the MI proceeds by collecting information (history, examination, tests), which allows a diagnosis to be made only when complete; in its turn a diagnosis allows treatment to be planned. However, it has been shown that all doctors, both young and experienced, behave quite differently (Barrows *et al.*, 1978; Elstein *et al.*, 1978). Table 1 sets out the steps involved, and the following example illustrates them.

A 60-year-old single man who last attended his general practitioner eight years ago presents looking miserable and complaining of central upper abdominal pain. The initial cues (Step 1) are his age, single status, infrequent attendance, unhappy appearance and the

**Table 1.** Sequential steps in the decision-making process.

1. Identification of initial cues from the patient and his or her environment.
2. Rapid early generation of up to four working hypotheses.
3. Application of inquiry strategies (history, examination, tests) to refine, rule out, rank in order of likelihood and verify the hypotheses.
4. Making an overall assessment of the patient's problems.
5. Making therapeutic and/or diagnostic decisions before ending the interview.

pain. The early hypotheses, or proposed diagnoses, might be depression with or without alcoholism, major new organic disease such as abdominal cancer, and acute stress such as bereavement or job loss. Elstein and colleagues have shown that the quality of these initial hypotheses is a very strong predictor of the quality of the outcome of the MI. It is the doctor's past learning and experience of similar patients which determines the quality of the hypotheses in terms of probability, seriousness and treatability. Step 3, the inquiry strategies, employs time-honoured clinical routines, but it has been shown that lines of inquiry not related to the hypotheses in Step 2 make little or no contribution to the outcome of the MI and are not an efficient use of time (Elstein *et al.*, 1978). In our example, the lines of inquiry would be directed towards depression (history, feelings, precipitants), alcohol abuse (history, examination, tests), life crisis (history, counselling) and abdominal cancer (history, examination, tests and x-rays). New information such as dyspnoea and chest pain, if it arose, would need an additional hypothesis. In Step 4, the overall assessment might be "lonely, single man, recently unemployed, at risk of depression and alcohol abuse, possible peptic ulcer", and the MI would end in Step 5 with therapeutic and diagnostic decisions designed to manage and elucidate this.

This stepwise decision-making process is commonly called 'hypothetico-deductive', or colloquially 'guessing and testing'.

*The evidence of expert opinion*

Finally, there exists expert sources of opinion about the content and objectives of MI learning. Although unsupported by evidence, there is good consensus (Jason *et al.*, 1971; Royal College of General Practitioners, 1972; Gazda *et al.*, 1975; Freeman and Byrne, 1976; Maguire and Rutter, 1976; Bacal *et al.*, 1979; Stott and Davis, 1979; Verby *et al.*, 1979; Nuffield Working Party on Communications With Patients, 1980). Such content is being used in teaching programmes, some teachers using checklists overtly or otherwise.

*A proposed new checklist*

Putting this evidence and current practice together, I propose that there is a need for a comprehensive list of

**Table 2.** Comprehensive checklist of the objectives of the medical interview.

1. Doctor-patient relationship.
  - a) Rapport-building.
  - b) Helping patient express him- or herself.
  - c) Achieving conditions for therapeutic relationship.
  - d) Controlling interview.
2. Accurate identification of initial cues.
  - a) From the presenting problem.
  - b) From background data about the patient.
  - c) From non-verbal behaviour of the patient.
3. Generation of initial hypotheses.
  - a) Adequacy.
  - b) Consideration of psychological and social factors.
  - c) Consideration of serious illness possibilities needing immediate attention.
4. Inquiry strategies focused on the hypotheses.
  - a) History—presenting problems.
    - other problems.
    - past and family history.
    - impact of problem on patient's life and reason for attending
    - patient's own beliefs and concerns about the problem.
    - treatment to date, personal and other resources used and available.
  - b) Physical examination—need to examine, quality, rigour, appropriateness.
  - c) Investigations—necessity and appropriateness.
    - need to temporize or refer.
  - d) Need to introduce additional hypotheses.
5. Overall assessment of patient's problems.
6. Clinical management plan.
  - a) Further investigation.
  - b) Management. Definiteness and reasonableness of management goals. Range of resources used.
  - c) Agreement with and involvement of patient in management decisions; exposition to and education of patient.
  - d) Consideration of cost/risk/benefit factors.
  - e) Need to modify care-seeking behaviour.
  - f) Review of possible complications, associated conditions, needs of family.
  - g) Opportunity for preventive health measures.
  - h) Closure, follow-up plan, accessibility of care, medical recording.
7. Overall efficiency and use of time.

objectives for the MI (Table 2) and for a checklist which focuses on the doctor-patient relationship (Table 3). By way of explanation in Table 3, 'personal issues' refers to emotionally laden topics which can give rise to embarrassment in patients or doctors. The doctor should introduce such issues in a natural and logical way; it should be asked what effect the presenting problem has on the patient's sexual function rather than asking in an unconnected way whether the patient has a sexual difficulty. Similarly in his or her question style, the doctor will ask which of a set of possible examples of concerns bothers the patient most, rather than whether the patient has any such concerns.

It is also possible to focus more deeply on individual items in Table 3, such as the achievement of empathy,

**Table 3.** Checklist of objectives of doctor-patient relationship.

1. Rapport-building.
  - Cordial, courteous beginning to interview.
  - Appropriate seating arrangement and body posture.
  - Appropriate eye contact.
  - Avoidance of jargon.
2. Helping patient express him- or herself.
  - Appropriate question style (open, closed, leading), option not to respond given, clear explanation of purpose of questions given.
  - Appropriate use of facilitation, clarification of what patient says and what doctor explains, silences and confrontation.
  - Response to patient's leads, verbal and non-verbal.
  - Psychosocial areas and personal issues dealt with.
3. Achieving conditions for therapeutic relationship.
  - Accurate empathy.
  - Warmth and unconditional respect for patient.
  - Doctor able to be 'natural' and personally authentic.
4. Control.
  - Balance between excessive interruption of patient and keeping patient to relevant matters.
  - Ending of interview definite, but allowing patient to bring up late extra problems.
  - Clear explanation to patient, acknowledging any uncertainties and involving patient in decision-making.

using specially constructed scales (Truax and Carkhuff, 1967).

### Teaching methods

#### *Educational research into teaching methods*

I found useful evidence about methods in my search of the literature. In a review, Carroll and Munroe (1979) concluded that practical experience in the MI with later feedback is the best method of learning; most teachers would agree with this, but the question remains: what type of material and what type of feedback? Using trainees' subjective reports about their work is not good enough; there are vast discrepancies between reported and actual behaviour in such areas (Ajzen and Fishbein, 1977). Maguire and colleagues (1978) compared the effects of giving feedback alongside normal clinical teaching with normal clinical teaching alone. The feedback was in the form of videotapes, audiotapes or a report on the MI as observed through a one-way screen. The group given feedback achieved significantly higher skill than the control, those using videotapes doing the best. This study was done with medical students; in a controlled study on trainees, Goldberg and colleagues (1980) showed that individual tuition on videotape feedback produced an increase in ability to recognize psychiatric illness in patients. In a study of older doctors Verby and colleagues (1979), using peer review of videotapes as feedback, showed that a group given this facility significantly improved MI skills compared with controls, but in doing so spent twice as long on their MIs.

Prescribing Information

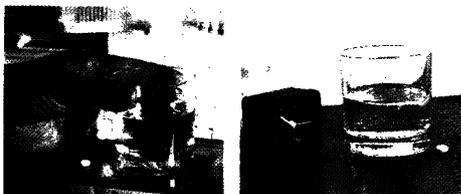
# Zantac

RANITIDINE

**Uses**

*Indications:* Zantac Tablets are indicated for the treatment of duodenal ulcer, benign gastric ulcer, post-operative ulcer, reflux oesophagitis and the Zollinger-Ellison syndrome.

*Mode of action:* Zantac is a highly effective, rapidly acting histamine H<sub>2</sub>-antagonist. It inhibits basal and stimulated secretion of gastric acid, reducing both the volume and the acid and pepsin content of the secretion. Zantac has a relatively long duration of action and so a single dose effectively suppresses gastric acid secretion for twelve hours.



**Dosage and administration**

*Adults:* The usual dosage is one 150 mg tablet twice daily, taken in the morning and before retiring. It is not necessary to time the dose in relation to meals. In most cases of duodenal ulcer, benign gastric ulcer and post-operative ulcer, healing occurs in four weeks. In the small number of patients whose ulcers have not fully healed, healing usually occurs after a further course of treatment. Maintenance treatment at a reduced dosage of one 150 mg tablet at bedtime is recommended for patients who have responded to short-term therapy, particularly those with a history of recurrent ulcer.

In the management of reflux oesophagitis, the recommended course of treatment is one 150 mg tablet twice daily for up to 8 weeks.

In patients with Zollinger-Ellison syndrome, the starting dose is 150 mg three times daily and this may be increased, as necessary, to 900 mg per day.

*Children:* Experience with Zantac Tablets in children is limited and such use has not been fully evaluated in clinical studies. It has, however, been used successfully in children aged 8-18 years in doses up to 150 mg twice daily without adverse effect.

**Contra-indications**

There are no known contra-indications to the use of Zantac Tablets.

**Precautions**

Treatment with a histamine H<sub>2</sub>-antagonist may mask symptoms associated with carcinoma of the stomach and may therefore delay diagnosis of the condition.

Accordingly, where gastric ulcer is suspected the possibility of malignancy should be excluded before therapy with Zantac Tablets is instituted.

Ranitidine is excreted via the kidney and so plasma levels of the drug are increased and prolonged in patients with severe renal failure. Accordingly, it is recommended that the therapeutic regimen for Zantac in such patients be 150 mg at night for 4 to 8 weeks. The same dose should be used for maintenance treatment should this be deemed necessary. If an ulcer has not healed after treatment for 4 to 8 weeks and the condition of the patient requires it, the standard dosage regimen of 150 mg twice daily should be instituted, followed, if need be, by maintenance treatment at 150 mg, at night.

Although the incidence of adverse reactions in clinical trials of one year's duration and longer has been very low and no serious side effects have been reported with Zantac treatment, care should be taken to carry out periodic examinations of patients on prolonged maintenance treatment with the drug as a safeguard against the occurrence of unforeseeable consequences of drug treatment.

Like other drugs, Zantac should be used during pregnancy and nursing only if strictly necessary. Zantac is secreted in breast milk in lactating mothers but the clinical significance of this has not been fully evaluated.

**Side effects**

No serious adverse effects have been reported to date in patients treated with Zantac Tablets. There has been no clinically significant interference with endocrine, gonadal or liver function, nor has the drug adversely affected the central nervous system even in elderly patients.

**Further information**

*Drug interactions:* Ranitidine does not inhibit the cytochrome P450-linked mixed function oxygenase enzyme system in the liver and therefore does not interfere with the effects of the many drugs which are metabolised by this enzyme system. For example, there is no interaction with warfarin or diazepam.

*Pharmacokinetics:* Absorption of ranitidine after oral administration is rapid and peak plasma concentrations are usually achieved within two hours of administration. Absorption is not impaired by food or antacids. The elimination half-life of ranitidine is approximately two hours. Ranitidine is excreted via the kidneys mainly as the free drug and in minor amounts as metabolites. Its major metabolite is an N-oxide and there are smaller quantities of S-oxide and desmethyl ranitidine. The 24-hour urinary recovery of free ranitidine and its metabolites is about 40% with orally administered drug.

*Use in renal transplants:* Zantac has been used without adverse effect in patients with renal transplants.

Product licence number 0004/0279

Basic NHS cost (exclusive of VAT) 60 tablets £27.43.

References: 1. Data on file, Glaxo Group Research. 2. Borjes, P. *et al.*, *Lancet* 1980; 2 (8197):755. 3. Peden, N.R. *et al.*, *Acta Endocrinologica* 1981; 96:564-568. 4. Nelis, G.F. and Van de Meene, J.C.C., *Postgrad. Med.J.* 1980; 56:478-480. 5. Henry, D.A. *et al.*, *Br.Med.J.* 1980; 2:775-777.

Zantac is a Glaxo trade mark.

# Glaxo

Glaxo Laboratories Ltd., Greenford, Middlesex UB6 0HE.

Fast

Simple

Specific

It is good educational practice for trainees to be aware of (and involved in deciding) the content of their learning, but how important is this in helping learning? Rutter and Maguire (1976), in evaluating a feedback method, found some evidence that provision of a content model of the MI was more important than the feedback teaching itself in improving skill. Although this finding needs substantiation, it suggests that providing a model is important.

*Observations of current teaching methods*

I was able to observe in detail methods used at the universities of Western Ontario and Minnesota and to discuss methods with a variety of medical teachers from other centres in North America. MI training often begins with demonstrations, discussions and reading, related more to tradition than to evidence of efficacy. Nevertheless, the initial discussion of attitudes and objectives, and the provision of a model, appeared to me to be of value.

There was no doubt that learners, after initial apprehension, valued the experience of being able to see themselves with the help of video-recording. Remarks such as "Now I know what I really do" were commonplace. They preferred using genuine patients to simulated ones, and many programmes are equipped for the unobtrusive, routine taping of MIs. High-level cameras and suspended microphones are used, requiring no more effort than pressing a button. Using these allows trainees to obtain feedback with or without peer or supervisory help on an almost daily basis, and to select problem patients for later teaching sessions. The economic and ethical implications of this technique are such that trainers may need some convincing that it is valuable. Unfortunately, where such facilities do not exist, the experience many have when they begin taping in the surgery does nothing to foster enthusiasm. Schedules are disrupted and the portable equipment brought in can be obtrusive unless great care is taken. Where model set-ups have been installed, however, visiting trainers usually seem impressed and covetous.

I did not find that audiotape ever had the same impact, and one-way screens allow no record and thus no direct self-observation.

The assisted MI was becoming popular with some teachers. In this technique the trainer sits with the trainee during the interview, intervening and prompting at intervals, perhaps to pick up a lead or to point the MI in a new direction. Special skills are required to do this without throwing the trainee off balance and taking the interview over.

If genuine patients only are used, certain more difficult and infrequent types of pattern, for example hostile patients and family groups, could be missed. Simulated MIs get round this difficulty and seem to be acceptable to trainees. Several types of simulation have been tried. Requiring trainees to role-play their own patients, with a colleague playing doctor, is found helpful as an

empathy exercise for the patient role, but fully scripted simulations are less convincing. My own experience is that an effective and realistic way of simulating a difficult patient is to use an actor to role-play a medical situation well known to himself either by personal experience or contact with that of a friend or relative. An amateur actress was able to role-play a wide variety of difficult patients on her own, including an aggressive, guilty patient and a grieving patient, briefed only by mere role outlines.

Most programmes I observed had at some time explicitly used a model of the MI similar to the checklist proposed in Table 2. Many teachers had given this up, however, and in their review of a tape with a trainee would make teaching points which the trainee could not put into context. While these points were good ones, whole areas of the MI were not commented on by either party. Some trainers would, at extremes, persistently ride personal hobby-horses and it was easy for important issues to be overlooked. Those using a comprehensive checklist seemed to achieve more effective results, but had to take care to avoid giving the trainee the idea that such a checklist is a rigid protocol precluding spontaneous and adventurous MI strategies.

Finally, I observed the actual process of teaching, using tapes of the trainee's MIs. It was usual to start by asking the trainee what he or she would like to focus on and to obtain his or her impression of the MI. Then, during the playback, the trainer would stop the tape and ask questions like: "How did you feel at this point?", "What diagnosis were you considering then?" and so on. This process is called 'stimulated recall' and aims to elicit the trainee's relating and reasoning processes. When this was done in a peer group it was felt important that the trainee being questioned should have the first say about any issue. No group member was allowed to make an adverse criticism without making a constructive comment also, and the group leader would concentrate on the good aspects of the MI, reinforcing these, before addressing the less good aspects.

A more learner-orientated method called 'interpersonal process recall' (Kagan, 1975) requires the trainee to explain his or her feelings and thoughts as the tape is played back, stopping it if need be. The teacher helps to interpret the interaction and compare the trainee's thoughts and feelings with what is apparent on the tape. If this is used with simulated patients, then the patient too contributes to the recall. Controlled studies have confirmed the efficacy of the method and an instructional package of tapes and a manual is available (Kagan, 1975). Both these methods can be used in small group teaching, when the benefit of peer review is added.

I found no evidence about how much MI training should be given, or when, but it was my overwhelming impression that the most effective learning occurred when MI training was built into everyday learning rather than put on as a special event once or twice a

year. Knowledge about how to help a trainee when his specific learning needs become apparent is scanty. Many teachers do not assist trainees further after their deficiencies had been exposed and accepted, as though that in itself will help in learning new behaviours and skills. Others, however, are experimenting with counselling techniques and with the prompted practice of new skills and behaviours in simulated situations. It seems to be generally accepted that positive reinforcement, or the affirmation of good skills and behaviours observed in the trainee, is very beneficial. Not only does this method increase confidence, but it helps to ensure that such skills, once acquired, are not lost.

## Conclusions

Bearing in mind the incompleteness of the evidence, I suggest the following conclusions and proposals:

1. Objectives and attitudes should be discussed at the outset with trainees, and checklists with explicit MI objectives provided (Tables 2 and 3). These should be true to the decision-making process doctors use.
2. The checklists must be comprehensive and can be used as such. Alternatively, specific subsections can be focused on according to a trainee's needs.
3. Feedback is the teaching method of choice, videotape being by far the best medium. The best material is the real MI, but simulations are needed in some circumstances. Playing patient roles derived from personal experiences is very useful in this context. More experience is needed with the assisted MI as a teaching tool; rooted in the traditional apprenticeship model, this may prove effective.
4. When reviewing videotaped MIs in peer groups, certain rules of conduct for the group are helpful when conducting stimulated recall. Interpersonal process recall should also be used, since it promotes self-evaluation, a necessary skill to be carried forward into independent practice.
5. MI training by feedback and tape review should be built in as a routine part of practice-based training. If shared portable equipment has to be used, then the utmost care should be taken to avoid obtrusiveness and disruption. Each practice should have the equipment for long enough to become totally familiar with using it. At least one practice in each programme should install fixed equipment, providing a good model for others.
6. Special strategies must be used to help trainees when their deficiencies have been identified. The methods can include counselling and the prompted practice of items of behaviour in simulated MIs.
7. Research into the efficacy of various teaching methods in improving MI skill requires the development of a good measuring instrument for the MI.

The next decade in vocational training is likely to see an improvement in the educational content of programmes, and nowhere is this so badly needed as in medical interviewing.

## References

- Ajzen, I. & Fishbein, M. (1977). Attitude-behavior relations; a theoretical analysis and review of empirical research. *Psychological Bulletin*, **84**, 888-918.
- Bacal, H. A., Molineux, J. E. & Shaw, B. F. (1979). The assessment of training in Balint Groups. In: *The Human Face of Medicine*, Ed. Hopkins, P. Tunbridge Wells: Pitman Medical.
- Balint, M. (1964). *The Doctor, His Patient and the Illness*. London: Pitman Medical.
- Barrows, H. S., Flightner, J. W., Neufeld, V. R. *et al.* (1978). *An Analysis of the Clinical Methods of Medical Students and Physicians*. Hamilton, Ontario: McMaster University.
- Becker, M. (1979). Understanding patient compliance: the contributions of attitudes and other psychosocial factors. In: *New Directions in Patient Compliance*. Ed. Cohen, S. J. Lexington, Mass.: Lexington Books.
- Carroll, J. G. & Monroe, J. (1979). Teaching medical interviewing: a critique of educational research and practice. *Journal of Medical Education*, **54**, 498-500.
- Elstein, A. S., Schulman, L. S. & Sprafka, S. A. (1978). *Medical Problem Solving: An Analysis of Clinical Reasoning*. Cambridge, Mass.: Harvard University Press.
- Freeman, J. & Byrne, P. S. (1976). *The Assessment of Vocational Training for General Practice. Reports from General Practice, No. 17*. London: *Journal of The Royal College of General Practitioners*.
- Gazda, G. M., Walters, R. P. & Childers, W. C. (1975). *Human Relations Development: A Manual for Health Sciences*. Boston: Allyn and Bacon.
- Goldberg, D. P., Steele, J. J., Smith, C. *et al.* (1980). Training family doctors to recognise psychiatric illness with increased accuracy. *Lancet*, **2**, 521-523.
- Jason, H., Kagan, N., Werner, A. *et al.* (1971). New approaches to teaching basic interview skills to medical students. *American Journal of Psychiatry*, **127**, 1404-1407.
- Kagan, N. I. (1975). *Interpersonal Process Recall: A Method of Influencing Human Interaction*. Mason, Mich.: Mason Media Inc.
- Knox, J. D. E., Alexander, D. W., Morrison, A. T. *et al.* (1979). Communication skills and undergraduate medical education. *Medical Education*, **13**, 345-348.
- Krantz, D. S., Baum, A. & Wideman, M. (1980). Assessment of preferences for self-treatment and information in health care. *Journal of Personality and Social Psychology*, **39**, 977-990.
- Maguire, P., Roe, P., Goldberg, D. *et al.* (1978). The value of feedback in teaching interviewing skills to medical students. *Psychological Medicine*, **8**, 695-704.
- Maguire, P. & Rutter, D. (1976). Training medical students to communicate. In: *Communication Between Doctors and Patients*, Ed. Bennett, A. E. London: Oxford University Press for the Nuffield Provincial Hospitals Trust.
- Marks, J. N., Goldberg, D. P. & Hillier, V. F. (1979). Determinants of the ability of general practitioners to detect psychiatric illness. *Psychological Medicine*, **9**, 337-353.
- Nuffield Working Party on Communications With Patients (1980). *Talking With Patients: A Teaching Approach*. London: Nuffield Provincial Hospitals Trust.
- Raynes, N. V. & Cairns, V. (1980). Factors contributing to the length of general practice consultations. *Journal of The Royal College of General Practitioners*, **30**, 496-498.
- Royal College of General Practitioners (1971). *The Future General Practitioner—Learning and Teaching*. London: *British Medical Journal*.
- Rutter, D. R. & Maguire, G. P. (1976). History-taking for medical students II. Evaluation of a training programme. *Lancet*, **2**, 558-560.
- Sanson-Fisher, R., Fairbairn, S. & Maguire, P. (1981). Teaching skills in communication to medical students—a critical review of the methodology. *Medical Education*, **15**, 33-37.
- Sanson-Fisher, R. & Maguire, P. (1980). Should skills in communicating with patients be taught in medical school? *Lancet*, **2**, 523-526.
- Stewart, M. A., McWhinney, I. R. & Buck, C. W. (1979). The doctor-patient relationship and its effect upon outcome. *Journal of the Royal College of General Practitioners*, **29**, 77-82.
- Stott, N. C. H. & Davis, R. H. (1979). The exceptional potential in each primary care consultation. *Journal of the Royal College of General Practitioners*, **29**, 201-205.
- Truax, C. B. & Carkhuff, R. R. (1967). *Toward Effective Counseling and Psychotherapy: Training and Practice*. Chicago: Aldine.
- Truax, C. B. & Mitchell, K. M. (1971). *Handbook of Psychotherapy and Behavioral Change*, Ed. Bergin, A. E. & Garfield, S. L. New York: John Wiley.
- Verby, J. E., Holden, P. & Davis, R. H. (1979). Peer review of consultations in primary care: the use of audiovisual recordings. *British Medical Journal*, **1**, 1686-1688.

## Acknowledgements

I should like to thank the many people who gave generously of their time to me while engaged in this study, and especially Dr Ian McWhinney of London, Ontario, and Dr Jack Verby of Minneapolis, for welcoming me into their departments.

## Address for reprints

Dr B. S. Cole, 27 West Parade, Norwich NR2 3DN.

## Record number of general practitioners

In 1980, there were 28,000 general practitioners in the UK, more than ever before. List size was down to 2,200 patients, a reduction of 8 per cent since 1971, but expenditure on general medical services fell from 10 per cent of total NHS costs in 1950 to 6 per cent.

Source: Office of Health Economics. *Compendium of Health Statistics*. 4th edition. London: OHE.

## Post-operative dental pain

In a double-blind, randomized, placebo-controlled trial, the efficacy of single doses (25 mg and 50 mg) of intravenous dihydrocodeine was evaluated in 24 patients who had undergone removal of their bilaterally impacted lower third molars. After both doses of dihydrocodeine, patients reported significantly more pain ( $p < 0.05$ ) than after placebo. The hyperalgesia after 50 mg dihydrocodeine was greater and of longer duration than after 25 mg dihydrocodeine.

Source: Seymour, R. A., Rawlins, M. D., & Rowell, F. J. (1982). Dihydrocodeine-induced hyperalgesia in postoperative dental pain. *Lancet*, **1**, 1426-1427.