The MRCGP examination and its methods. II: MCQ paper

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THE multiple choice question (MCQ) paper is directed to sampling the candidate's abilities in the cognitive domain (mainly at the level of (a) in the Charvat, McGuire and Parson's classification; rarely reaching and never exceeding (d). See part I, page 662, October issue of the *Journal*.) Thus it is almost entirely concerned with testing factual recall.

Until 1982 the MCQ paper in the MRCGP examination consisted of 90 questions of the independent true-false format, in which an opening statement or stem is followed by five items, each of which may be correct or is a plausible distractor. As negative marking operates for incorrect responses, the candidate is provided with the option of answering 'don't know'.

The subject matter of the 90-question paper conformed approximately, to the proportions shown in Table 1. From the autumn of 1982 the number of questions was reduced to 60 and the proportion is shown in Table 2.

Marking is performed automatically by the optical scanning of sheets on which the candidate has entered his preferred completions. The mark awarded to the candidate for each question is the result of the positive and negative scores of the items; the 'don't know' or uncompleted response attracting no score. This raw score is subsequently amended (see below).

Questions are constructed by the MCQ compilers, by a group of examiners and recently by a group composed of invited Members who have performed outstandingly in the examination. To be accepted, all questions must be supported by substantial references.

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These draft questions are looked at briefly by a small group of examiners before being circulated more widely to members of the Panel of Examiners. Each question in draft form is submitted to at least four examiners in full-time general practice. They are asked to comment specifically on relevance, clarity of wording, level of difficulty and acceptability for the examination. This process results in the rejection of some questions and the amendment of many others.

Table 1. The number of questions allocated to each subject in the 90-question paper.

General medicine	20
Psychiatry	18
Obstetrics and gynaecology	12
Therapeutics	10
Paediatrics	10
Surgical diagnosis	5
ENT, opthalmology, dermatology	10
Community medicine	5

Table 2. The number of questions allocated to each subject in the 60-question paper.

General medicine	12
Therapeutics	8
Obstetrics and gynaecology	6
Paediatrics	6
Psychiatry	6
Surgical diagnosis	4
ENT	4
Dermatology	4
Eyes	3
Social and legal aspects	3
Epidemiology and statistics	2
Practice organization	2

1. The following are recognized manifestations of Crohn's disease of the large bowel:

a) Anal fissure **True**
b) The presence of faecal occult blood **True**
c) Recurrent pyelonephritis **True**
d) Recurrent constipation **False**
e) Erythema nodosum **True**

2. Recognized manifestations of alcohol abuse include:

a) Accident proneness **True**
b) Recurrent temporary loss of consciousness **True**
c) Repeated attempted suicide **True**
d) Generalized pruritis **True**
e) Macrocytic anaemia **True**

3. Maternal serum alphafetoprotein:

a) Level is raised in the presence of a fetus subsequently found to have exomphalos **True**
b) Attains a maximum level at about 30 weeks gestation **True**
c) Should be estimated at 18–20 weeks gestation **False**
d) Level is characteristically raised in the presence of fetal microcephaly **False**
e) Level is typically higher when the mother does not take oral multivitamin supplements during pregnancy **True**

4. Prerequisites of effective screening in general practice include:

a) A latent or early symptomatic phase of the disease **True**
b) The test used must be highly sensitive **True**
c) The test must have high validity **True**
d) Application of the programme to 100 per cent of the population at risk **False**
e) Problem-orientated medical records **False**

5. A patient driving a private motor car should be advised to inform the Driver and Vehicle Licensing Centre if:

a) A disability which has already been notified to the Centre has become worse **True**
b) The disability is expected to last less than three months **False**
c) He develops diabetes mellitus which is satisfactorily controlled by diet alone **False**
d) A fit occurs after a fit-free period of more than three years **True**
e) He suffers a typical relapse of multiple sclerosis **True**

6. Following partial loss of vision in one eye, the pupil of the affected side:

a) Characteristically is dilated in occlusion of the central retinal vein **False**
b) Typically reacts sluggishly to light in retrobulbar neuritis **True**
c) Reacts normally to light in the presence of a partially detached retina **True**
d) Typically is fixed and constricted in the presence of a vitreous haemorrhage **False**
e) Reacts normally to light if there is an embolus in a branch of the retinal artery **True**

7. Criteria for claiming a Night Visit Fee include:

a) The visit must be requested and performed during the appropriate hours **True**
b) The visit must take place beween the hours of 23.00 and 08.00 hours **False**
c) The visit must be performed by the doctor claiming the fee **False**
d) Visits in connection with maternity medical services attract the fee **True**
e) The patient must confirm the visit by his signature **False**

8. Clinically significant interactions should be anticipated during concurrent administration of:

a) Chlorpromazine (Largactil) and metoclopramide (Maxolon) **True**
b) Oxytetracycline and aluminium hydroxide **True**
c) Benzhexol (Artane) and amitriptyline **True**
d) Diazepam and cimetidine (Tagamet) **True**
e) Chlorpropamide and cotrimaxozole **True**

9. Sensorineural deafness is a recognized sequel of:

a) Glue ear **False**
b) Mumps **True**
c) Kernicterus **True**
d) Otosclerosis **False**
e) Measles **True**

10. Scaling lesions are characteristic of:

a) Psoriasis **True**
b) Lichen planus **False**
c) Pityriasis rosea **True**
d) Erythema nodosum **False**
e) Roseola infantum **False**

11. Recognized causes of haemoptysis include:

a) Mitral incompetence **False**
b) Upper respiratory tract infection **True**
c) Acute left ventricular failure **False**
d) Uncomplicated asbestosis **False**
e) Sarcoidosis **False**

Figure 1. *Examples of multiple choice questions and answers.*

At all stages from draft to printer's proofs the wording of questions is scrutinized for ambiguity. Although more care goes into the construction and evaluation of questions, there is no substitute for the process of testing them in the examination setting. At the present time the MCQ paper contains roughly equal numbers of new and previously used questions.

As a by-product of computer marking, a considerable amount of statistical information becomes available soon after each examination. This information is important in two areas. The first of these is the calculation of a correlation coefficient for each question. The coefficients are used to derive the final (or amended) percentage mark of each candidate. The details need not concern us, but the effect of this is to reduce the weighting of questions which do not discriminate between high-scoring and low-scoring candidates. This is a good example of peer referencing. Data from the computer are also used to scrutinize the discriminating power of questions and items, in order to improve them for future use. Some questions with low overall correlation are rejected; the majority need attention to one or more items. Item analysis like that of questions is based on correlation with overall score, but provides in addition information on the distribution of candidates between 'correct', 'incorrect' and 'don't know'. Thus difficulty and discrimination may be assessed. This process of question refinement is protracted and time consuming, but is an essential complement to the process of question construction. With the present system of amending candidate scores, correlation coefficients of a high order of significance must remain the aim of the MCQ compilers.

The large number of candidates and the use of automatic marking means that the MCQ paper is inherently reliable. Content validity is potentially high also, but (like all questions of validity) requires judgements to be made on matters such as relevance or difficulty, if it is to be optimal. In the MRCGP examination, as we have seen, these judgements are shared between the compilers of the paper and about 20 members of the Panel of Examiners. If, despite this, some questions of low discriminating power are used, their weighting in the final mark is reduced by a process involving peer referencing.

This balanced arrangement is not of course perfect. Examiners may disagree about relevance. A poorly discriminating question may have other functions, for example, to extend the curriculum into areas not seen by the candidates as relevant. It has been known for some time that the process of amending scores tends to increase the difficulty of assessing factual knowledge seen as peripheral by the majority of candidates. This has led other examining bodies to abandon the process. While a significant proportion of new, and therefore untested, questions was in use, the amended score provided an important safeguard for the candidate. The issue is now being reconsidered because of the more efficient use of questions in a smaller 60-question paper.

Examples of current multiple choice questions and answers, provided by Dr Andrew Belton, the present MCQ Coordinator, are shown in Figure 1.

III: TEQ or short notes paper

THE MRCGP examination has contained traditional essay questions (TEQ) since its inception. These are designed to test candidates in the cognitive domain but also to a lesser extent assess attitudes. The technique has two main advantages: the questions provide the opportunity to test the candidate's abilities in organizing his knowledge and expressing it in written form and are comparatively easy to construct.

The main disadvantages include the fact that constraints of time limit the number of questions, and thus the range of content which can be tested, and that marking is time consuming, and to a considerable extent subjective and less reliable than that of some other written techniques. English expression and legibility are important, and most doctors who wish to express their knowledge logically in written form find this difficult to achieve without the opportunity for redrafting—impossible in the context of an examination.

The College has made several attempts to minimize these disadvantages. Content validity has been increased by careful selection of questions from the five areas of clinical practice. Of the three questions, one is usually selected from area 1—clinical practice, health and disease. By subdividing the question and at times using the short notes format, a single question can be based on areas 2 or 3—human development or human behaviour, and the third on areas 4 or 5—medicine and society or the practice.

Questions are constructed by members of the Panel of Examiners and are refined and edited at examiners' workshops by subgroups who also construct and weight the marking schedules. Each script is marked by two independent examiners using schedules which allocate approximately 70 per cent of the marks to content. Up to 30 per cent of the marks are available at the examiner's discretion, and the process is facilitated by the use of marking grids. The marks for each candidate are collated by the computer, which produces a printout

identifying any discrepancy between examiners. When a discrepancy is capable of affecting a candidate's performance overall, the script can be assessed by a third examiner.

The validity of the TEQ is satisfactory. Its reliability has been increased by careful construction of marking schedules and the use of marking grids. Criticisms of relevance have usually been based upon a restricted view of the competences of the general practitioner, for the TEQ has the same potential as the MCQ for extending the curriculum into those areas deemed relevant by the College. Recent efforts have been made to define the attributes which are most appropriately tested by this form of examination and continuing development should improve both its effectiveness and efficiency.

Figure 2 shows essay questions which appeared in recent examinations, followed in each case by an example of an answer regarded by the examiners as excellent.

Question

You suspect that the skin lesions of a two-year-old child brought to the surgery by his mother may be due to cigarette burns. Discuss your management of this situation.

Answer

Introduction

Child abuse, also known as nonaccidental injury or child/baby battering, is an increasing problem in today's society. It is necessary when faced with a potential case to elucidate all the information available and to decide on a plan of action which has the future well-being of the child at the centre—this will involve the rest of the primary health care team and the social services, as well as the general practitioner.

History

Primary care. The mother should be questioned without arousing antagonism or suspicions. It is necessary to find out what has prompted the mother to bring the child, for example, sepsis of the lesions, comments from friends or neighbours; she is most unlikely to volunteer that the injuries could be inflicted by an adult on the child. The duration of the lesions should also be noted. It would be a good opportunity to ask about the general health of the child—respiratory and cardiovascular systems, appetite and development, if time permits, as well as enquiring about the child's general behaviour.

Social. The home situation should be explored in detail—? one-parent family, the mother is more likely to injure a child than the father (though with the latter's knowledge usually), the marital situation, any unemployment, housing conditions and any financial problems should be asked about; the ages of the other children (if any) should be checked on, and their welfare; it is also worth asking if there is any extended family support—for example, grandparents.

Examination

A thorough examination is needed, to include all the systems, as well as checking the skin for any other lesions, such as old bruises, and the limbs for any evidence of fractures. The fundi should be examined for retinal haemorrhages (a sign of repeated shaking). During the examination, the relationship of the child to the mother should be noted—most abused children relate well to the adult who has injured them, but some exhibit fear and apprehension.

Counselling

After the history and examination are complete, the mother should be given the opportunity to ask the doctor any questions—to air any worries or fears—to see if she will offer any information about the lesions which she has not already done. The fact that she has come to the surgery indicates that she recognizes a need for help either for herself or the family as a whole.

Continuing management

At the conclusion of the history and examination, the doctor will have decided whether or not the child is in immediate danger of further serious abuse—if this is likely, the admission to a local paediatric unit (after consultation with consultant, if possible) will have to be arranged. The mother may voluntarily agree to this—if it is explained that it is in the child's best interest and that 'a time in hospital for observation and any necessary investigations' is needed. If not, and legal action has to be taken, the child will have to be placed under a Place of Safety Order after application by a social worker to a magistrate if immediate action is needed, or under a Care Order by application of a social worker to a court if action need not be taken immediately.

It it is thought that the child will be able to remain at home, it will have to be explained to the mother that involvement of other paramedical persons is needed—the health visitor attached to the practice will provide support and counselling, likewise a social worker. The other members of the practice should be involved in the situation so that there is a unified approach. The family will need close follow-up, frequent visits from staff, and will need to know that they are free to contact the doctor at any time for support, advice and counselling.

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Figure 2. *Examples of traditional essay questions and answers (continued on pp. 736 and 737).*

Long-term management

If the family are observed closely, with understanding and help, so that they know they are not to blame for the situation, all may be well for the child. If events proceed to further child abuse, either admission or fostering will need to be considered—a full case conference with all interested and concerned personnel should be held to make any definite decision.

Conclusion

The suspicion of child abuse in a toddler usually leads to involvement of all paramedical and medical staff working with a general practitioner. Admission to hospital is not always needed, but if care in the community continues, then much time and effort is needed to avoid potential tragedy.

Question

How can the general practitioner aid the integration of the physically handicapped within the community?

Answer

The report *Patients first* and the subsequent announcement of the NHS reorganization emphasized the need, both social and financial, to return to community care of the sick and disabled. The third aim which came from the Short report was to improve the quality of life and facilities for the disabled. On the widest scale, then, the general practitioner can begin this integration by his interest and action in political matters, supporting and helping to introduce these measures. For most, this will be through the official professional bodies, rather than involving us personally, but each must take his share of the thought and discussion leading up to major political and social discussions.

Recent reports from the RCGP concerning the prevention of illness emphasize that health education will lead to the individual taking responsibility for his own health. For the physically handicapped, this responsibility is shared by his family, but if they are to accept such a responsibility they need the care and support of the many health support professions.

If he is to help, the general practitioner must first identify the physically handicapped. This may be through good knowledge of his patients, diagnostic registers, or information from health visitors and district nurses. He will need to keep a record of their existence and arrange regular communication with them by visiting himself or by visits of other members of the team.

If the physically handicapped are to be integrated, they must achieve their maximum physical potential. Medical intervention is essential here. Appropriate and early referral to specialists' units must be arranged, and physiotherapists or occupational therapists will improve function and advise about aids. Occupational therapists are available in the community via social services. The Disablement Resettlement Officer should be involved to consider whether employment is possible—perhaps in sheltered workshops.

The general practitioner should make himself aware of all possible aids and support for the handicapped. This may involve housing, nursing, special aids in the home and certainly financial benefits including travel expenses and attendance allowances for relatives.

In order for the handicapped to live at home, their families require support and encouragement. The general practitioner can provide this in both a practical and emotional sense. The latter is achieved by his attitudes and the former by action—for example, arranging hospital admission for the disabled person to allow relatives a short rest. Day care could be an alternative here, as would special workshops.

The relatives may also be helped by support groups. The general practitioner should be informed of the existence of such groups and inform the relatives of them. Examples include groups for stroke and multiple sclerosis patients. Discussion can help them to cope and useful practical advice be obtained.

Staying at home is the first step to integration but the physically handicapped should then enter the community itself. The first step here may be transport—supplying wheelchairs, cars, etc. Work has been mentioned above. Vitally important here is the attitude of the community itself—and we must militate against the 'Does he take sugar?' mentality. Here again we return to health education. The general practitioner must be a major source of health education to change people's attitudes. Here health visitors, school talks, and even patient participation groups have a major role to play.

The physically handicapped themselves have a part to play and many are very determined to take a full role in society.

Essentially, the general practitioner needs awareness, enthusiasm, sympathetic attitudes and good information to help and support the disabled. He must also educate the community to receive them.

Question

'Patients should be at liberty to consult specialists of their choice, without reference to their general practitioner.' Discuss.

Answer

From the patient's point of view this may have the following advantages: it saves time because only one appointment is necessary; they achieve a specialist opinion at every visit and so a more informed opinion as to immediate management; they have quicker access to investigations and more elaborate forms of treatment.

The disadvantages are that they receive a less personal service; they may see a different doctor every visit. The doctor looks, usually, at only the illness presented. It is more difficult for the patient to explain or hint at other contributory factors, and the illness is treated in isolation without reference to social or psychological circumstances. The presenting complaint may be over and intensively investigated in

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Figure 2. *continued.*

a futile attempt to find a physical cause. Finally, the patient may choose the wrong specialist and waste a great deal of everybody's time.

From the community's point of view the advantages might be that general practitioner surgeries are less crowded, and less paperwork and time is involved in getting patients to specialists. The disadvantages are that hospital outpatient departments will be even more crowded, waiting lists will become even longer, the primary care team will be bypassed more often, preventative medicine will be practised less, an opportunity for the development of community spirit will be lost and resources will be wasted.

From the general practitioner's point of view the advantages will be saving of time, letter writing, paperwork, investigations. The disadvantages will be loss of a doctor–patient contact and undermining of relationships; poor communication about what has happened to his patients involving diagnosis and management; more work when presenting problems are not solved by specialists due to lack of background knowledge; loss of the 'family doctor' role.

From the specialist point of view the advantages are limited to perhaps some earlier referrals of illnesses where progression leads to irreversible deterioration. The disadvantages consist of time wasted by inappropriate referral, lack of baseline information and investigation into social psychological and physical state of patient. Difficulty with continued care as 'he who starts must usually be bound to continue'. Lack of continuity because the extra work would induce a time factor which would weigh against this. Lack of time to perform the specialist role of total assessment of a single problem.

In summary, I feel that this would be a marked backward step along the road that general practice is now treading. It would undermine the role of the general practitioner and cause chaos in an established system of primary health care. The service to the patient would deteriorate in most cases, and in most cases only, the patients would suffer. The general practitioner, the specialists and community would also be the losers as job satisfaction in a worsening service would deteriorate. In simple cases of obvious diagnosis well-known to the public, it might be of benefit, but these will be very much in the minority.

Figure 2. *continued.*

GENERAL PRACTICE LITERATURE

LIVING WITH DYING. THE MANAGEMENT OF TERMINAL DISEASE

Cicely Saunders, Mary Baines

Oxford University Press, Oxford (1983)

74 pages. Price £4.95

There is no doubt that the quality of care now being given to the dying has improved in the last 10 years. Much of the credit for this must go to the research and teaching of these two ladies whose new book surpasses all previous ones from St Christopher's Hospice. Thousands of British doctors and nurses still have much to learn about pain and symptom control and have yet to be convinced that there is strong scientific rather than anecdotal evidence for the principles applied.

General practitioner trainees, junior doctors and nurses will find here almost all they need to know about care in cases of terminal cancer. They may be disappointed that no reference is made to partial antagonists such as buprenorphine and only scant reference to indications for neurolytic and neurosurgical procedures. Possibly too idealistic a picture is presented of anaesthetists, psychiatrists, radiotherapists and others who are available and ready to advise in St Christopher's and other large hospices. Ideals are, however, what we should aim for and all who read this modest 74-page text will certainly be inspired as well as helped.

I would recommend this book for all trainees and community nurses, after the general practitioner principals have read it for themselves.

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EMERGENCIES IN GENERAL PRACTICE

A. J. Moulds, P. B. Martin, T. A. I. Bouchier-Hayes

MTP Press Ltd, Lancaster (1983)

215 pages. Price £9.95

Any 'how to do it' textbook will inevitably generate criticism but there could be few disagreements with the points of management outlined in this book.

Answering the telephone receives considerable emphasis; in addition to a general chapter, suitable telephone advice is suggested for each emergency dealt with later in the book. But the doctor may not always be available to answer the telephone so it is a pity that there is no mention of the need for delegation to practice staff, nor of the possible role of the doctor's spouse. There is an excellent chapter devoted to paediatric emergencies, with clear notes on paediatric prescribing followed by a comprehensive account of the emergencies likely to be encountered in general practice. A series of chapters each devoted to a particular functional system covers emergencies in the adult population.

The book is small enough to fit easily into the doctor's bag; during the first two weeks of a trainee's attachment in general practice it would, I believe, prove most useful. It might also enable the trainer to sleep more peacefully! This book represents good value and any trainer would be well advised to consider adding it to the practice library.

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