dispatches the results a day or so later. The result is solemnly filed by the medical secretary in the notes, where it is forgotten until the patient's return some months later—at which time it is ignored as irrelevant and out of date.

In general clinicians are relatively indifferent to technological changes so long as they get a high quality rapid analytical service from the laboratory. Clinical biochemistry now has the potential to move nearer the patient. Whether clinical biochemists accompany it is largely a matter for themselves. There will be those who make things happen, those who watch things happen, and those who wonder what has happened.

STUART E EVANS

Principal Biochemist,
Birmingham Maternity Hospital,
Birmingham B15 2TG

BRENDAN M BUCKLEY

Senior Registrar,
Clinical Chemistry Department and Regional Poisons Unit,
Dudley Road Hospital,
Birmingham B18 7QH

[1] Marks V. Clinical biochemistry nearer the patient. *Br Med J* 1983;**286**: 1166-7.

Computing in child health: significant progress

The Child Health Computing Committee was commissioned in the mid-1970s to develop a computer system for health care for children. At that time the only computer systems available within the National Health Service were regional mainframe units, and hardware was expensive. The National Child Health Computer System started, therefore, with a batch mode registration and vaccination and immunisation module with clinical information sent to the computer centre for processing. This is used today in about 60% of districts in England and Wales and by three health boards in Scotland.

While the other modules of the system (preschool and school health) were being developed, however, substantial changes took place in both attitudes to computers in medicine and in computer technology. Nevertheless, these other mainframe modules had virtually been completed by the time locally operated (distributed) techniques became readily available at a realistic cost; and, since all the regions seemed unlikely to convert to microcomputers immediately, the mainframe programs have been completed for the ICL 2900 series computers, which all regions have or will have in the near future. Though not as accessible to the user as an "on site" terminal, the mainframe has considerable advantages. It has a greater capacity and flexibility, provides a greater variety of options, and, paradoxically, batch mainframe systems are in many ways easier to set up and operate. The preschool module has now undergone successful trials and very soon will be available to districts, and the school health module trials are starting in September 1983 for release about 12 months later.

During the preparatory stages of the preschool module trial, the BMA asked that independent observers should be appointed. The Health Visitors' Association had also expressed some reservations, so the Child Health Computing Committee invited both bodies to scrutinise the conduct of the trial, especially for confidentiality and security. Both the Central Ethical Committee of the BMA and the Health Visitors' Association have accepted favourable reports from their observers, with the proposals in the trial report all being found to be ethically acceptable.

When the Child Health Computing Committee was well into the preparation of this child health system, the Secretary of State inaugurated the Steering Group on Health Services Information chaired by Mrs Edith Körner, and it became obvious that many of the objectives of the two groups were virtually identical. The close liaison which was soon established has ensured that the minimum basic data sets required by the Körner steering group can be obtained through the modules of the child health system, now formally proposed by the steering group as the computer system with which child health data should be obtained. After Körner system trials and official approval for national use the Child Health Computing Committee will further modify both modules to ensure that the Körner and Child Health Computing Committee data sets will be compatible. Integration is already taking place: the next phase of one of the Körner trials (standard maternity information system; SMIS) is expected to use data sets similar to those of the child health system. Thus, while the outsider might think that the various developments in medical information techniques may seem to be at variance, where child health is concerned they are all coming together to produce a comprehensive record system which will suit the needs of clinicians, epidemiologists, statisticians, and managers within the NHS.

The Child Health Computing Committee has been criticised for not using more up to date techniques with minicomputers and microcomputers, but in fact progress towards this objective has been made as fast as circumstances have allowed. A nationwide inquiry asked all districts for opinions on local computing systems and found that by no means all were planning early development of this kind—and of those which did, most favoured a system run on "VME," a method with network and microlink capability. This allows input and retrieval with a locally controlled and secure method and provides links for the passage of data to the existing regional mainframe for epidemiological, statistical, and management purposes. This development, which is supported by the NHS Computer Policy Committee, is well under way and should be available by mid-1984. No district could design and develop its own system in so short a time.

While the Child Health Computing Committee keeps in close touch with professional and NHS requirements by having members representing every region, the BMA, the General Medical Services Committee, and other key professional bodies, the day to day work is done by small subcommittees of experts in the function of each module. A further group organises training of personnel in districts taking on the system and looks after general information and publicity, while yet another specifically serves the needs of authorities for statistics and epidemiological information. Once the initial programs are complete, the computer centre of responsibility (Welsh Health Technical Services Organisation, Cardiff) will provide maintenance and continuous development of the system in response to demand. A central service of this kind should prevent district computer staff duplicating program work unnecessarily and will provide a centre through which local developments may be publicised and shared.

In 12 to 18 months there will be, therefore, combinations of both batch and data link systems from which both clinicians and administrators can make a choice and which have sufficient flexibility to provide optional extra items and capacity which should satisfy all those with additional particular re-

quirements of their own. It might be to their advantage, therefore, if districts were to contact the Welsh Health Technical Services Organisation before embarking on the expensive and time consuming task of developing their own system locally. Those who already have working systems will no doubt be asked to add any missing items of the Körner steering group minimum data sets and to devise means for extracting these data for district or regional use. The complete child health system is one of the very few national systems that provide a comprehensive and flexible computerised programme for child surveillance and preventive care from birth to school leaving age.

COLIN H M WALKER

Consultant Paediatrician and Chairman,
Child Health Computing Committee,
Ninewells Hospital and Medical School
Dundee DD1 9SY

Can we still recommend meditation?

The enthusiasm of the 1960s for meditation as a "cure all" has mellowed. The passing of time and a large number of research studies now allow us to define the place of meditation with more certainty. The techniques advocated by different groups vary from the quiet sitting with a still mind to the whirling of the Sufi dervish, making definition difficult, but in a recent comprehensive review article[1] Shapiro defines meditation as "a family of techniques which have in common a conscious attempt to focus attention in a non-analytical way and an attempt not to dwell on discursive ruminating thought." It should be added that although Westerners undertake meditation in the hope of obtaining peace and tranquillity, religious devotees use it as a means of obtaining religious enlightenment.

The physiological effects of meditation include a reduction in respiratory rate, heart rate, blood pressure, muscle tone, and skin conductance. These changes form a pattern of decreased arousal.[2] The electroencephalographic changes are consistent with this, as a slowing of the alpha, concurrent alpha and theta, and beta spindles are found during relaxation and on the borders of sleep.[3] Thus there is no doubt that meditation relaxes, but it is not a unique form of relaxation, and several studies using other techniques of relaxation,[4] muscular relaxation, or hypnosis have shown no difference between these and meditation. Most of these studies have been carried out on novice meditators and studies on experienced meditators might possibly yield different results.

Some evidence has been published suggesting that meditation may confer long term benefits on health. Meditators' heart rates and blood pressure have been found to respond more rapidly and recover more quickly than controls after seeing a stressful film, and a study of galvanic skin responses showed that long term meditators were less aroused than controls.[5] Published studies also suggest that beneficial changes in personality may occur. People who have practised meditation may be less anxious and less neurotic than they were before starting to meditate.[6] A recent study by Throll[7] confirms this, and suggests that meditation is more effective than relaxation techniques in effecting these changes on a long term basis.

Early uncontrolled studies led to a very optimistic picture of the therapeutic effects of meditation but these results have not been confirmed. Several groups have compared the effects of meditation with relaxation techniques, hypnosis, biofeedback, and pseudomeditation in different populations of patients. Meditation is effective in treating anxiety, anxiety and alcoholism, alcoholism, mild hypertension, and insomnia, but in most studies it is no more effective than the control techniques. One or two studies did find it to be superior. Difficulties in matching other techniques with meditation and time spent at the task could account for this effect, however, and future studies must be adequately controlled.[1 6] At present there are indications that meditation is an effective form of treatment but not necessarily better than more orthodox regimens. If patients who suffer from stress related disorders are motivated to learn and practise meditation they may be expected to do well. In some studies, however, the dropout rate has been high and those starting meditation have tended to be the more neurotic and anxious patients.

What then are the contraindications to this form of treatment? Borderline or frankly psychotic people should be excluded as should those with a history of psychosis who are still receiving drug treatment, as meditation may terminate a remission.[1 6 8] Prolonged periods of meditation have occasionally been shown to lead to psychotic episodes, acute anxiety, depression, and suicide, and prolonged meditation should be undertaken only in groups where there is adequate care and knowledge of the likely effects. Those who find the process produces negative results should not be pressed to continue, since their symptoms tend to get worse with time. One final group who may run into trouble are patients with epilepsy whose seizures are intensified by the reduction in the level of alertness which occurs during the meditation session.[9]

To whom should a patient be referred to learn the techniques of meditation? Medical practitioners are clearly unwilling to let their patients be taken over by any likely guru down the road who raises unrealistic expectations. They are best referred to a well established group and preferably one which does not charge and has a good system of supervision and aftercare. The technique chosen should be one with which the patient feels comfortable—for example, mantra meditation (sitting still) or hatha yoga (body exercises) and so on. Alternatively "clinically standardised meditation" (CSM) may be learnt from tapes.[10] If support from a peer group is thought to be important then the transcendental meditation movement could be considered, although the patient should be warned about the pressure on initiates to attend "advanced" classes.

PETER FENWICK

Senior Lecturer and Consultant Psychiatrist,
Maudsley Hospital,
London SE5 8AZ

1 Shapiro DH. Overview: clinical and physiological comparison of meditation with other self-control strategies. *Am J Psychiatry* 1982;**139**:267-74.
2 West M. Meditation. *Br J Psychiatry* 1979;**135**:457-67.
3 West M. Meditation and the EEG. *Psychol Med* 1980;**10**:369-75.
4 Fenwick PB, Donaldson S, Gillis L, *et al.* Metabolic and EEG changes during transcendental meditation: an explanation. *Biol Psychol* 1977;**5**: 101-18.
5 West M. Physiological effects of meditation: a longitudinal study. *Br J Clin Psychol* 1979;**18**:219-26.
6 West MA. The psychosomatics of meditation. *J Psychosom Res* 1980;**24**: 265-73.
7 Throll DA. Transcendental meditation and progressive relaxation: their psychological effects. *J Clin Psychol* 1981;**37**:776-81.
8 Walsh R, Roche L. Precipitation of acute psychotic episodes by intensive meditation in individuals with a history of schizophrenia. *Am J Psychiatry* 1979;**136**:1085-6.
9 Donaldson S, Fenwick PBC. Effects of meditation. *Am J Psychiatry* 1982;**139**:1217.
10 Carrington P. *Clinically standardised meditation.* Kendal Park, New Jersey: Pace Systems, 1978.