

tion. These personnel are almost invariably first on the scenes of accidents and medical emergencies, and appropriate early action may be lifesaving for the patient with severe hypovolaemia, airways obstruction or hypoxaemia. This is also the rationale for the existence of the British Association of Immediate Care Scheme (BACICS), which is a general practitioner based national organization with about 1,350 members which attempts to respond rapidly to medical emergencies. However, very few of these doctors have access to defibrillators, so that they are unlikely to make much contribution to the treatment of out-of-hospital cardiac arrest. We must now look to the DHSS for direction in the development of advanced training for ambulance-men. The Department, by the same token, must look to those schemes which receive their blessing for good evidence that their funds are being well spent.

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Decisions and errors

IN the working day of the general practitioner, many decisions have to be made in a short time, with the knowledge of possible serious consequences. When the significance of signs and symptoms is clear, decisions are easy to make, deductions are straightforward and courses of action simple. However, such situations are unusual: more often the signs and symptoms are equivocal, the deductions at best are statistical probabilities, and the courses of action have serious potential hazards.

During our years of training and practical work, our internal computer has been programmed to calculate the odds of many factors and to add them up in order to arrive at highly complex solutions. Decision theory helps to sort out and list the various components of a patient's problem, to give appropriate weight to each according to probability and seriousness, and to find the course of action which involves the least risk. This step-by-step approach reveals stages where irrational impulses and emotions might have played a part in our assessment. Of course, emotions are important factors in decision-making: 'objectivity' is not served if emotions are ignored. They should be recognized and discussed.

In making decisions we have to remember that errors arise out of every human activity. Primary errors stem from bad perception, from faults in the brain computer's estimation of perceived signals, from mistakes in the 'computer program', and of course from the interactions of idiosyncrasies of patient and doctor. No amount of postgraduate education can eradicate the inherent uncertainty of human perception and thought, nor fill all the gaps in our knowledge. It is necessary to admit this fact to ourselves, to our students and, with due caution, to our patients. It is easier to accept this

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fact if we eliminate moralistic or puritanical attitudes about making mistakes. By admitting the inevitability of primary errors we will not avoid them, but we will learn to detect them earlier and so avoid secondary errors. Fortunately primary errors rarely cause the patient any serious harm.

Secondary errors arise from the non-recognition of primary errors and from wishful thinking. In the fervent hope that a mistake has not been made, wishful-thinking clouds our perception and judgment. The possibility of a primary error is denied and the mistake is compounded with new erroneous interpretations.

The attitude, bordering on arrogance, that doctors must be perfect and omniscient is not only a conceit of medicine; patients also have these fantasies about doctors. Ill-health may allow a patient to regress to a child-like pattern of behaviour, a feeling of absolute trust in the people who care for him, viewing them as godlike and omnipotent. To deny a patient the benefit of this regression would be unkind, since it is one basis for the therapeutic effect of the drug 'doctor'. What the doctor must avoid is letting himself be seduced by the patient into sharing this delusion.

In order to deal with the emotions evoked by this subject, related sciences like psychology and statistics can be brought in to assist. It is still necessary to have the moral courage to admit our mistakes and to stop being ashamed of them. This will enable us to learn to deal with mistakes as we have learned to deal with other difficult problems in the exercise of our art.

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