Editorial

Diagnosis and decisions – can we do better?

The need for accurate diagnosis in clinical practice is self-evident but only in recent years has much attention been paid to understanding the processes involved. There is general agreement that the effective clinician generates hypotheses and submits them to refutation and corroboration on the basis of deductions that flow from them, the hypothetico-deductive method.1 Inductive reasoning is generally limited to the process that provides the initial working hypothesis.

Nevertheless the traditional teaching of medical students based on complete history and examination and a systems review is essentially inductive. This approach lacks direction and provides large quantities of often irrelevant information which is known to interfere with hypothesis generation and to obscure diagnosis particularly for the individual with a small knowledge base.2

The need to teach students clinical methods as an exercise in problem solving that reflects the realities of clinical practice34 has yet to be widely appreciated. The following note from three professors of medicine and surgery was sent to consultants due to teach the 1985–86 clinical student entry to a distinguished London medical school.

'The objective of the first firm attachments is to teach the student how to take a history and examine a patient. This is very important, as it will form the basis upon which he will build his clinical skills over the ensuing two and a half years. This, of course, does not exclude teaching on diagnosis, treatment etc but it is hoped that this will take second place to the practice of history taking and physical examination'. (my italics).

This remarkable example of dissociating the information-gathering process from the purposes to which the whole exercise is directed seems designed to leave the bemused students wondering what it is all about, and a lack of direction and economy in the care of their eventual patients. It leads to the attitude, often costly for the patient, that treatment can only follow firm diagnosis reached in the prescribed cook-book way.5

Apart from considerations of how information is to be collected and marshalled, the goals of the decision-making process ever need defining. Medical practice—and teaching—has long been determined by the primacy of diagnosis as an end in itself from which all else stems, hence the predominance of disease orientated teaching and text-books. Yet we all know that traditional diagnosis is beset by nosological arguments and that in many of our patients there is no conventional diagnosis to be made. We appreciate that 'diagnosis' has an operative significance and is made at a degree of lack of uncertainty that is acceptable in any one case in relation to the risks and benefits of the investigative and therapeutic options.

Decision analysis provides a rigorous approach to the realities of clinical practice, including primary care, in its concern for the choice and use of tests and therapies, in screening for disease and its prevention. A recent review by Kassirer and his colleagues6 provides an up-to-date and balanced assessment of current methodology and future prospects. The essentially mathematical basis of decision analysis has ensured that it has stayed on the periphery of clinical practice in the 15 or so years since its introduction into medicine. Our ability to deal with most of our patients without recourse to decision tree and sensitivity analysis can only mean that in its formal applications decision analysis is very likely to stay there. However, the discipline of a decision analysis approach without the need for precise numerical values of probabilities that, generally, we simply do not have, provides a framework for structuring clinical decisions.7

There are also real benefits to be won in teaching and training programmes. Decision analysis principles lead to the teacher having to expose in detail how he arrives at a decision.8 As information is only useful if it can be employed in solving clinical problems, decision analysis discourages the mindless gathering of facts, be it the routine systems review of the student9 or biochemical profiles without regard to clinical evidence in an individual patient.4 Decision analysis, far from dehumanizing the patients’ problems, is also sensitive to his or her rights to be involved in the decision-making process.9

But there is work to be done in the here and now. This issue of the Journal carries the first of a series of articles on 'Difficult Decisions', in areas of clinical practice where some of the above considerations could be of especial relevance.

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References

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