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National health services, whether funded by government or by personal insurance schemes, are being strained by the exponential rise in cost, substantially due to the huge developments in diagnosis and treatment over the last few years. Cancer drug therapy in particular has made major strides in recent years with the promise of more individually tailored treatment protocols. The population is living ever longer and morbidity related to aging is requiring increased and improved interventions both in surgery with joint replacements, coronary bypass surgery and stents, increasing use of transplants and in drug therapy particularly to combat mental deterioration.

Diagnosis has been required to parallel and in many cases lead these therapeutic advances with the result that both imaging and laboratory studies have become increasingly sophisticated, and in many circumstances, complex. It is natural that patients are keen to partake of these advances and for the media to expound their virtues enthusiastically.

Unfortunately, there is a limit to the resources that can be devoted to healthcare even in the most sophisticated and wealthy societies and thus a careful appraisal of the benefit of each advance must be made. This appraisal must take the form of a comprehensive evaluation of the value of a new treatment or diagnostic modality or test against established best practice preferably against a robust gold standard.

This process of assessing cost effectiveness has been a source of much debate both within the scientific community and in the public at large. Apart from the actual cost of the advance, issues surround the numbers of people that may benefit, the level of improvement over existing therapies and the length of time that the benefit may last.

In imaging we have had huge developments in our ability to investigate those with symptoms, and as a screening procedure, through whole body imaging. We are now evaluating physiological processes and matching them with anatomy and pathology through fusion images, the evaluation of functional brain activity is becoming more widely utilised and evaluation of molecular targeting of therapy through imaging is becoming a reality.

All these developments require considerable investment in time, staff and sophisticated hardware and each hospital must decide whether they fit within the strategic plan and that the numbers of patients benefiting will justify the investment. Managers must also be mindful that all these investments are time limited due to the continued developments that will inevitably require a rolling replacement process. It is therefore essential that evaluation of clinical efficacy and cost effectiveness go hand in hand and both are essential to enable informed decision making by all healthcare professionals and managers. This edition looks at some examples of how evaluation of cost effectiveness may affect purchasing decisions.

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