
COMMENTARY

NUCLEAR MEDICINE: PROCEDURAL AND COGNITIVE

In response to efforts by government and third party payers to control medical care costs, various medical specialties have turned on one another, rather than respond to the challenge to provide



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affordable, quality care. As one witty observer stated, "When physicians are under attack, they circle the wagons and fire inward."

While it is clear that there are inequities in current reimbursement schemes, some have chosen to denigrate procedure-oriented specialties, which are preferentially reimbursed, according to this logic, at the expense of specialties based on cognitive skills. Since

nuclear medicine is involved in performing "procedures," it is at risk of being characterized by the primary clinical specialties and their representatives as a procedure-based specialty rather than a cognitive one. Nothing could be further from the truth.

Apparently our clinical brethren assume that during a nuclear medicine exam, the patient is placed under an instrument and some type of brief exposure is made, almost like cooking a pre-packaged microwave meal. It is assumed that the results are obtained instantly. The picture produced is glanced at, and a reflex interpretation is provided. Perhaps it is believed that interpretation is not even necessary in some instances, since computer outputs of ejection fraction values or bone mineral density, for example, are already available. This type of reasoning, of course, completely ignores the diagnostic and discriminating skills involved in analyzing a series of images, activity-time curves, or numerical readouts. As with a history and physical examination, the quality of the impression derived from a nuclear medicine study will vary, with the physician's cognitive skills, i.e., the mental admixture of facts and experience of the physician involved. The quality of the results will also vary with the technical quality of the examination, which in the case of the nuclear medicine physician or radiologist, requires knowledge of a whole host of special information: nuclear medicine technology, nuclear pharmacy and pharmacology, principles of count-

ing and detector instrumentation, and perhaps even cognitive or receiver-operator dynamics and the influence of perception and logic on interpretation and the evolution of a clinical impression.

Even in centers fortunate enough to have trained staff technologists and basic scientists to assist in patient studies, recruiting and coordinating personnel with these skills is a time-consuming and challenging task. The responsibility for in-service education of ancillary staff, in addition to the usual continuing medical education of the physician, is an ongoing activity. Furthermore, there is considerable time and effort necessary to develop skills in preparing and justifying an adequate table of organization to respond to the service needs of the facility, in developing strategies to recruit and maintain staff, in selecting equipment and in obtaining funds for equipment acquisition and maintenance. Finally, the nuclear physician must integrate the observations garnered from the radionuclide study with the pretest clinical findings, the history, physical, and laboratory results, in order to make a diagnosis. When radionuclide procedures are used in the evaluation of a patient's clinical progress, the nuclear physician must correlate the findings with the pathophysiologic expression of the natural history of the disease and the potential effect of therapy. Could clinical nuclear medicine, the examination of the patient based on radionuclide distribution, exist without all of these intellectual skills? Why do some primary care practitioners assume that only their activities require cognitive skills? Such a position is arrogant; it is unfair and it is wrong.

Organized medicine in the US has a responsibility to adapt to economic realities, but also to continue to provide quality patient care, which in this era includes access to and appropriate use of high technology examinations. These procedures can only be provided by physicians and support teams expert in the delivery of these services. Specialty societies and interest groups would better preserve quality in medical care by addressing how to deliver these services even in a restrictive atmosphere than by seeking a scapegoat.

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