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between or among parties; it is also a function of the respective institutional goals viewed over time and within local ground rules. For example, the actions of the purchasers of medical care—government at federal, state, and local levels; Blue Cross and Blue Shield; more than 1000 commercial insurance carriers—can determine many cost allocation decisions. The many regulatory agencies also exert considerable influence, and their regulations change with great frequency.

Cost allocation must necessarily be directed at assuring the viability of the complex organization in all its parts. If a purchaser or a regulatory agency suddenly decides that it will no longer pay for a segment of the product line, one must either discontinue that segment or, alternatively, reallocate the costs to other segments. This becomes a continuous juggling process, often dictated by expediency rather than by rational approaches. If the priorities change in Washington or in the state house, the medical center must respond. This is just as true in the research and education sectors as it is in the medical care sector, but the latter is the largest component.

How much should be charged to the patient, to the student, to the house officer, to the research fellow, to the community, to the nation for each item of service? How much is each prepared to pay, and through which vehicles of payment? Costs must be allocated in part on the basis of willingness of someone to pay.

In the absence of clear, consistent policy, and in the presence of a myriad of categorically financed activities, the finances of the medical center and its criteria for cost allocation will continue to be chaotic.

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Pain Inhibition

Current Occidental interest in analgesia by acupuncture should be integrated with recent work on the inhibition of pain and temperature perception in humans.

White sound (a random mixture of frequencies ranging from 50 to 45,000 cycles per second) was found to block pain caused by dental drilling or extraction (1). Skin stimulation produced by immersing the opposite hand in

water suppressed causalgic hand pain (2). Pain and hyperthermia in the right hand and arm of a man with a left parietal lobe cerebral lesion were reduced and eliminated by stepwise increases of vibration or pressure stimulation applied to the opposite hand (3). This inhibition of pain was later explained by the postulation of a pain gate in the substantia gelatinosa of the spinal cord, a gate which is closed by the predominance of large over small fiber activity in the input to the spinal cord (4). Whether this theory can also be applied to audioanalgesia is yet to be shown. A recent application has been the utilization of electrical stimulation of the posterior columns of the spinal cord for the diminution of intractable pain (5).

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References

1. W. J. Gardner, J. C. R. Licklider, A. Z. Weisz, *Science* **132**, 32 (1960).
2. M. Bender, *Arch. Neurol. Psychiat.* **54**, 5 (1945).
3. S. E. Trent, *J. Nerv. Ment. Dis.* **123**, 357 (1956).
4. R. Melzack and P. Wall, *Science* **150**, 971 (1965).
5. C. N. Shealy, J. T. Mortimer, J. B. Reswick, *Anesth. Analg. Cleveland* **46**, 89 (1967).

Solution of UpA Structure

In the interest of historical accuracy we feel obligated to comment on the letter of Rubin, Brennan, and Sundaralingam (28 Apr., p. 355). The statement by their group that their solution of the crystal structure of UpA [uridylyl (3',5') adenosine hemihydrate] was complete by the time of the 1971 American Crystallographic Association meeting in Ames, Iowa, is at distinct variance with the remark made by Sundaralingam at that meeting. In his role as session chairman, Sundaralingam stated, in comments following our presentation, that his group was working on the structure, but that they had not as yet managed to solve it.

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