

involve the student in all facets of patient care, the university hospital should try to define a segment of the community to which it can render total care services in a continuum. This segment should be of a size that will not overtax facilities and of a composition that represents authentic cross section of medical care needs. The larger service responsibility of the university hospital must continue to be met through providing a consultation service but should be extended to include relationships with community facilities that will enable an exchange of educational experiences. Ambulatory services should be organized around the intensity of the care need around a definition of patient care responsibility. This requires a staging and integration of emergency and clinic services, and dividing clinic services into two parts: one that receives the patient having no community physician and provides total care extending from the hospital through the continuum of extramural services into the community, and the other that receives patients referred from the community or responsible clinic physician and provides consultative and specialty care in depth. The ingredients of good care and good educational programs in ambulatory medicine are essentially similar and should be inseparable. Both require a continuing care responsibility that implies a physician responsible for coordinating care and that requires an extension of ambulatory services to extramural programs for comprehensive care. Educational programs that purport to teach patient care must be designed around these needs and must allow the student to participate in the care responsibility following the patient throughout his course from hospital to community. Disciplined research and critical analysis in programs of medical care and education such as these is essential if future direction is to be based on objective data. The need for the good men and minds in medicine to turn their efforts to these problems, and to develop instruments to investigate them, is now critical. There are 21 references.-- Author's summary.

- 932 The Specialist and the Health of the University. W.G. Shepard. Mayo Clinic Proc. 41, 505-514 (Aug. 1966).

Presently the communication between those in the social and natural sciences is primitive. It is improving only as, on the one hand, the tools of the physical scientist become useful to the social scientist and as, on the other hand, the physical scientist or engineer seeks the counsel of the social scientist in improving the man-machine interaction. A similar situation has pertained between the physical and the biological scientist but is recently improving as these two fields meet at the molecular level. Within the physical sciences and technology one can readily find examples of provincialism and difficulty of communication in spite of the facts of a common mathematical language and a common dependence on a basic core of fundamental laws. Electrical engineers and chemical engineers face similar problems in the control of chemical plants and in electronic systems. The problems can be treated by the solution of essentially similar equations but neither has been capable of formulating the problem of the other. It has been only in the last one or two centuries that universities have begun to emerge as participating instruments in the development of society, in all its aspects, and to be recognized by society as effective means to that end. Nowhere has this been more true than in the United States where the concept of the land-grant university was developed. These land-grant institutions, established more than a century ago, were given the specific mission of aiding the development of the economy of a young nation. That they have been a vital force in our economy, no one can dispute. And this vigorous interest provided a vitality to the institutions themselves and a public interest in their support, which has led to their maturation into institutions which the rest of the world has taken for models. Paradoxically, our national policies in the past 20 years, while apparently supportive of our earlier land-grant traditions, have moved to reduce the external influences so important in the land-grant philosophy. After World War II, when extrinsic pressures were removed, not only was there a tremendous expansion in the resources made available for pure science, but a development of a conviction that engineering education and research should be like that characterizing pure science. In some respects a reform in this direction was necessary if engineers were to be prepared for a technology of an order of magnitude more complex than that which prevailed in the prewar world. But the pendulum swung far over so that engineering education and research increasingly focused on analysis, that is, became oriented toward a specific disciplinary specialization and away from an application orientation or mission orientation. Academic engineering research thus became increasingly incongruent with the practice of engineering. The teaching hospital brings to bear real extrinsic forces on medical education and research. An awareness that knowledge has validity not only for its own sake, but also for service, will ensure the health of our disciplines and thus of the universities as a whole.

- 933 The C.O. Sappington Memorial Lecture 1966. Patterns and Perspectives. L.J. Warshaw. J. Occ. Med. 8, 353-357 (July, 1966).

This is a critical time for occupational medicine. Great changes are taking place in industry and in the working populations to whose health we are dedicated. There is increasing awareness of the effects of our industrial civilization on the environment and a growing determination to

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