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prodromal symptoms of hepatitis mentioned earlier and instructed to report any that develop. Although such symptoms may be caused by a systemic viral infection without hepatitis, isoniazid should be promptly withdrawn pending further investigation. In the absence of a two- to three-fold elevation of the SGOT or alkaline phosphatase levels, hepatitis is unlikely, and, when the symptoms have cleared, isoniazid therapy can usually be continued if a small challenge dose (50 mg) evokes no recurrence of the symptoms or elevation of these levels. But, when symptoms are accompanied by a two- to three-fold elevation of the SGOT or alkaline phosphatase levels, isoniazid hepatitis is likely. If the symptoms and laboratory abnormalities clear promptly after the drug is withdrawn, the likelihood of isoniazid toxicity is so great that the drug probably should be withdrawn without giving a challenge dose. In situations that are less obvious, a challenge dose may help to clarify matters. With such precautions, serious hepatic damage can be avoided, and a liver biopsy is not usually necessary.

Clearly isoniazid is not so dangerous that its use need be feared when indicated, but it does merit a healthy respect, both when assessing therapeutic indications for its use and in surveillance for toxicity. Careful clinical monitoring for the prodromal symptoms of hepatitis is a more sensitive follow-up procedure than are periodic laboratory tests, in averting any serious side effects from this valuable drug. (WILLIAM W. STEAD, M.D., F.A.C.P., and E. CLINTON TEXTER, JR., M.D., F.A.C.P., *University of Arkansas Medical Center–Veterans Administration Hospital Complex, Little Rock, Arkansas*)

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President Nixon's Budget Proposals and the Medical Colleges

AS OUR MEDICAL schools were beginning to recover from the manpower drain caused by World War II, the National Institutes of Health, supported by Congressional action, began to award funds for research projects proposed principally by medical school faculty members. The support of training for research and, in a few instances, of clinical training (for example, in psychiatry) soon followed. Training grants of various types were designed to prepare young physicians for effective careers in research and, incidentally, in academic medicine. Categorical center grants (cancer, heart disease), program project grants, and similar mechanisms served to initiate multidisciplinary approaches to the solution of major medical problems. General research center grants provided the physical facilities for comprehensive patient studies. General research support grants were instituted to stimulate new research ideas, to provide money for pilot projects that were considered worthy of support at the local level, and to foster an academic atmosphere in medical schools that was conducive to good research.

These grants not only resulted in the expansion of medical knowledge but also provided salaries for investigators, who also spent a significant amount of time teaching and caring for patients. Medical schools were able to parlay a small amount of instructional money into full-time salaries with the help of these grants, and the instructors thus supported brought distinction and an atmosphere of inquiry and excitement to the medical schools such as had never been known before. This atmosphere developed a sense of curiosity and inquiry in medical students. They were unwilling to accept old dogmas merely because they were thought to be true and, as physicians, demanded proof of diagnostic and therapeutic concepts. These grants also provided the training ground for future teachers of medicine and made it possible for the brightest minds to have an academic career. Without the physicians trained with these funds it would have been most difficult to provide the teachers to man the more than 20 new medical schools that have opened recently.

Grants also supported the training of certain types

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of physicians who were in short supply and for whom the nation had great need, such as psychiatrists and environmental health experts. Residency programs in these disciplines were supported to fill the pressing national need. Through the support of research, research training, and specialized programs, the government was indirectly supporting medical education, and some of the best educated and most competent physicians in the world were produced.

In recent years medical colleges have been modifying their programs to meet the physician and health manpower shortages and the crises in the delivery of health care. In 1968 the Department of Health, Education, and Welfare inaugurated basic improvement and special improvement grants to help medical schools that were straining to provide the community with more and more physicians. In many medical schools these grants helped the schools to provide more teachers, particularly in ambulatory care and in departments previously manned chiefly by volunteers.

The pendulum of government support has swung strongly away from these financial mainstays of many medical schools, placing severe organizational and fiscal stresses on them. Most medical schools had expanded their classes. Many had shortened the length of medical education. Most of them had new educational programs for allied health manpower, and many had improved and expanded medical care programs. Federal and state governments have recognized the importance of these developments by attempting to provide additional fiscal support. In most instances, however, support for these new programs has been inadequate, and they have been a fiscal burden to the medical schools. In the 1973 fiscal year, capitation funds based on the number of medical students enrolled were provided by the Federal government through an act of Congress. This act provided about 50% of what responsible advisory bodies recommended. The allocation was cut further by the Office of Management and Budget, until finally the medical schools received only $1750 per medical student. At the same time the basic improvement and special improvement grants were discontinued. If a medical school suffered the normal attrition in research grant and career development awards in that year, the result was usually a loss in total funds.

In January 1973, President Nixon proposed substantial alterations in the flow of educational funds to medical colleges in his budget message. As a result of the priorities he set, the following actions have been taken.

1. Training grants, fellowships, and career development awards will be eliminated.

2. Research grants will be reduced in all areas except cancer and heart disease, and in these areas more reliance will be placed upon contracts and research directed from the National Institutes of Health.

3. General research support grants are being reduced and will eventually be eliminated.

4. All construction funds for health science facilities have been eliminated.

5. The Regional Medical Programs have been eliminated.

6. Allied health grants have been terminated.

The impact of these budgetary cuts, if they occur as planned, will be critical and will compromise the capacity of colleges of medicine to continue their current activities.

Because the problems of the University of Cincinnati College of Medicine are typical, we shall use this college as an example of the plight of all medical schools. The College of Medicine has a total budget of approximately $17 million, of which $8.71 million was in Federal support in the 1972 fiscal year. The comparable figure for the 1973 fiscal year is $8.27 million. For fiscal year 1974, $6 920 000 is estimated, and for fiscal year 1975, $5 620 000. By fiscal year 1975 the estimated loss of money from federal sources for this medical college will be $3.05 million. This loss represents 35.5% of all Federal support and 17.8% of the total budget. Translating these dollars into people, there will be a loss of approximately 30 full-time teachers, 100 supporting staff, and 125 students.

The consequences of these changes imply alterations in federal policies on medical education and research. Highly specialized training in basic science and clinical research and in specialties and subspecialties will not be supported by training grants. Research will be supported by project grants less frequently; all health education supports will be reduced; health care training and health delivery development money, particularly at the level supplied by Regional Medical Programs, will be markedly reduced or eliminated. It seems likely that these changes will be accompanied by greater emphasis on primary care physicians and ambulatory care, but the training grants for the educators of the future will have been lost, and a new generation of biomedical scientists will not be created. Without the imaginative minds of young scientists to keep research alive, we may see a plateau in medical progress during the next 20 years.

In this college the departments most affected are environmental health, medicine, psychiatry, and the basic sciences. For these departments there will be changes in size, site, and content of training.

extent and nature of these changes are now being considered. For medicine, the immediate impact will be on the training of cardiologists, hematologists, gastroenterologists, and other subspecialists. Faculty positions will be lost. For psychiatry, basic residency training is involved. The loss of the general research support grant affects the innovative, developmental, and supportive aspects of research, college-wide, and also eliminates support of faculty. Health programs will be markedly reduced. The loss of Regional Medical Program financing will reduce the support for a number of innovative and experimental projects on improved ambulatory care and education in ambulatory care. The research and training functions and potential will be strikingly decreased in this institution.

These fiscal policy changes by the Federal government must be based on policy changes in health education and in financing that have not as yet been fully defined. Rumors and informal comments suggest that there will be more loans for advanced education, with repayment either in money or time; there will be revenue sharing for health education that will probably be allocated at state levels; there will be less emphasis on research and specialized training; and there will be more emphasis on the education of the general physician who engages chiefly in ambulatory care.

Medical students often graduate from medical school encumbered by large debts that they incurred to finance their education. They are usually disinterested in further loans and repayment plans. Revenue sharing through the states is a new and untried mechanism and one that is fraught with great uncertainty. From a national viewpoint, it seems shortsighted to make major policy and fiscal changes before new policies and fiscal modes are devised. Such policy and fiscal changes warrant the widest consideration and discussion and the best estimates and research on their effects on manpower production. The medical educator and physician, the scientific public, and the public at large should be deeply concerned and insist on such considerations before many budget cuts are made. To change without knowing what the effects will be or without knowing what can be substituted is shortsighted. The consequences of such changes are likely to be disastrous. (ROBERT S. DANIELS, M.D., *Department of Psychiatry,* and RICHARD W. VILTER, M.D., *Department of Medicine, College of Medicine, University of Cincinnati, Cincinnati, Ohio*)

Editorial Notes

Carbon Monoxide and Our Social Responsibility

ELSEWHERE in this issue we have published a paper that reports an adverse effect of inhaled carbon monoxide on angina pectoris in patients with ischemic heart disease (*see* page 000). The original version of this paper was read by the editors and reviewed critically by one expert in cardiovascular disease and two experts in respiratory and pulmonary physiology. Its publication was recommended by two of the consultants. The third consultant was against its publication. Nevertheless, we decided to publish the paper because we believe that the question it examines is very important, and we believe that its conclusions are supported by the evidence. When we informed the dissenting consultant of our decision, he offered this comment:

> . . . your journal should have some kind of social responsibility. There is no question that the publication of . . . [the article] will raise fears and misconceptions concerning the influence of carbon monoxide inhalation which, in our view, are not supported by the data. However, obviously the question of social responsibility of your journal is a problem that you will have to rationalize yourself.

His opinion merits attention, for it touches on an often difficult but critically important part of the editor's job. What was the socially more responsible decision? To reject this paper because our consultant was uneasy about the validity of the main conclusion, even though he could not refute it directly? The findings are potentially of great importance, relating as they do to a major disease and a major pollutant.

The paper is published; what if its conclusions are invalid? Has society been damaged? If a paper unjustifiedly recommends treatment with a drug that is dangerous or ineffective, when there is a better drug available, publication of such a paper misleads physicians and wreaks injury in patients. But if unjustified conclusions regarding carbon monoxide as a menace to health were uncritically accepted by most of our readers and by the popular press, who would suffer? Look at the gross indifference of most of the public to the hazards of cigarettes and the quick moves of the tobacco industry to discredit antismoking campaigns. Does our consultant really believe that this one short paper, even if in error, could precipitate widespread panic among patients with ischemic heart disease and that the automotive and petroleum industries would meekly plead guilty to promoting dangers to health?

If the paper's conclusions are wrong, the only likely sufferers would be its authors and this journal. We believe that by accepting this risk we are being socially