Basic Research: Britain Tries to Measure Payoff

London. The educational and cultural values of basic research have long been recognized, but, as science becomes increasingly expensive, interest has focused on the question of its economic value. This interest shows itself in all countries with big research budgets, but it is particularly acute in Britain whose large and talented scientific community finds many of its ambitions thwarted by a weak economy and government preference for investing in activities that promise a quick return. Because of this, Britain's basic researchers hold a big stake in demonstrating that "curiosity-oriented" research can turn out to be extremely profitable. And for this purpose the Department of Education and Science, which is the principal agency for supporting such research, has announced a series of inquiries aimed at quantifying the economic benefits of basic science. This is no easy task, as witness the quietly buried Project Hindsight, which the U.S. Defense Department conducted several years ago in a controversial attempt to measure the payoff from its massive investment in basic research. The British effort, however, starts out with both greater humility and greater ambition, and merits notice for being what is probably the most carefully conceived attempt now under way to deal with this tricky problem.

To coordinate the inquiry, the department's Council for Scientific Policy has set up a working group under the chairmanship of Harry G. Johnson, an economist who is on the faculties of the London School of Economics and the University of Chicago. Johnson's group has commissioned studies of science-based industries by researchers at Manchester and Lancaster universities and by the program analysis units of the Ministry of Technology and the United Kingdom Atomic Energy Authority. In addition, the department last month published a 25-page pamphlet that is described as a "prospectus" for conducting the studies. Titled *An Attempt To Quantify the Economic Benefits of Scientific Research*, the pamphlet* was written by I. C. R. Byatt, who was until recently senior economic adviser to the department, and A. V. Cohen, scientific secretary of the Council for Scientific Policy. The basic strategy they propose calls for assessing the commercial payoff from basic research by attempting to calculate what the effects on discounted net profit would have been if essential discoveries had either been accelerated or delayed. The authors emphasize the difficulty of this task and express the hope that their proposal will stimulate widespread discussion.

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*Copies may be obtained from Her Majesty's Stationery Office, London; 50 cents.

patients and such sophisticated procedures as open-heart surgery and organ transplants have extended both the limits of medical treatment and the costs. Less dramatic but no less important in pushing up costs have been the more numerous and expensive diagnostic tests and drugs given hospital patients. And specialization, not only among physicians but among medical support workers, has multiplied effectiveness and also costs. Most medical schools are now involved in education not only of medical students, interns, residents, and nurses but also of various aides and semiprofessional technicians and therapists.

In addition, changes in political and social attitudes are profoundly affecting medical economics. For many years hospitals were notorious for the low wages they paid aides and orderlies and workers in such service jobs as those in hospital kitchens, laundries, and parking lots. This may have been rationalized as exploitation in a good cause, but the changing social perspective and labor market of the 1960's, as well as tougher union activity, is making these traditional policies obsolete.

Even more important, however, is the fundamental question of who gets medical care and on what terms. The influence of this question on the medical schools was illustrated by the announcement early in October that three medical schools in New York City—New York Medical College, New York University School of Medicine, and Albert Einstein School of Medicine—were facing acute financial crises, and that one, at least, is on the brink of suspending operations because of "inadequate reimbursement."

The reimbursement bind afflicts medical schools through their teaching hospitals and is attributed chiefly to the effects of the federal Medicare and Medicaid programs, which are designated to pay the medical costs, respectively, of the elderly and the indigent. Financing for the programs differs, but the critical point is that Medicare and Medicaid payments are pegged below true costs. (Later articles will discuss the impact of federal programs on medical care and the attitudes of organized medicine as a major limiting factor in changing the medical care system.)

Broadly speaking, hospitals—especially big teaching hospitals—in the past applied a double standard in service and charging. The poor were treated free or at reduced cost in clinics and wards. Patients able to pay entered a usually superior system of private care and in many cases helped to subsidize the "public" patients. With the passage of Medicare and Medicaid, however, hospitals which operated by "Robin Hooding" had to come to terms with the Johnsonian principle that there should be equal medical care for all, regardless of ability to pay. The movement has been reinforced by actions of young medical professionals who have also been demanding the abolition of the old double standard of care. Most hospitals are moving to change the old system, and are finding it very expensive.

Hospitals as a group are deplorably weak on cost analysis, and this is a fundamental problem. Extreme examples are the public hospitals which had scruples or rules against charging indigents and failed to bill even those eligible for Medicaid and Medicare. The billing operations of many public hospitals are appallingly obsolete, and, in fact, hospital administration is a notorious managerial backwater. Third-party payment plans such as Blue Cross impose their own cost definitions, and these may often fall short of covering full costs. Reports of hospital