was plain dumb, or maybe it was quite smart in concluding that the outer reaches of basic research have little to do with running the Air Force. In any case, it would be difficult to demonstrate that the Navy, with its long and happy relationship with basic research, is scientifically or technically better off than the Air Force, with its legacy of clumsy dealings with science. It is interesting to recall that the much-debated Project Hindsight, which studied the scientific and technical origins of modern weaponry, concluded that "the data do not provide much of a case for the utility of recent undirected science, that is, science produced within the last 10 to 20 years." There is no doubt that Defense money has been good for basic research, but whether the resarch it has supported has been good for defense is an issue on which contention is great and evidence is sparse.—D. S. GREENBERG

Rural Health: OEO Launches Bold Mississippi Project

In the health field, medical research was the favored child of previous administrations and research activities flourished. The Johnson administration, though by no means allowing the research establishment to suffer harsh deprivation, has been placing a new emphasis on the delivery of health services. Accordingly, the effort under the antipoverty program to provide comprehensive health care centers for the poor is, while still small, growing rapidly. The first "neighborhood health centers" were established in urban slums, but soon some centers will be springing up in rural America. There the problem is not so much that of reorganizing and supplementing available health resources—the great need in the cities—as that of creating resources where few now exist.

By 1 June the Office of Economic Opportunity (OEO) had made grants totaling more than $30 million for a score of comprehensive health projects, including six rural projects approved within the last few months. Neighborhood health centers are operating in Denver (*Science*, 29 July 1966), Boston, New York, and several other cities. Now Tufts University School of Medicine, which is operating the Columbia Point project in Boston, will undertake a similar venture in the Mississippi community of Mound Bayou, an all-Negro town in Bolivar County, at the heart of the cotton-growing delta region.

The Mound Bayou center, the first and most ambitious of the comprehensive rural health projects OEO has approved, will open this August and begin serving the poor of a 400-square-mile area with a population of about 14,000. The estimated cost of the project during its first 9 months is about $1 million, which will cover the purchase of medical equipment as well as operating expenses. Other rural or rural-and-small-town health-center projects approved by OEO include those planned for Monterey County, California, Bellaire, Ohio, and two counties in Appalachian Kentucky.

A steady increase in the number of neighborhood health centers, urban and rural, is contemplated. President Johnson has endorsed an OEO goal of 50 centers in operation by July 1968. Besides being appreciated in their own right, the centers are regarded by some antipoverty strategists as an excellent entering wedge for an extensive antipoverty effort. As one health project director put it, "Even if you don't give a damn about dead babies, it's just not politic to say so."

The Mound Bayou center, or "Delta Community Health Agency," represents an attempt to shape a winning strategy for aiding one of the nation's major poverty groups. Not only do the Negroes of the rural South constitute a large poverty group in their native region but they are the source of the great flow of migrants into the ghettoes of the cities of the North and West. The project at Mound Bayou will not be typical of others OEO may sponsor in the South, for it skirts certain racial and political problems. Ordinarily OEO expects local community action agencies (CAP's) to serve as project contractors. But the planning that has led to the Mound Bayou center was initiated by Tufts Medical School's department of preventive medicine as a research and demonstration project. If the Bolivar County CAP had initiated the project—not a likely possibility—the difficulty of doing anything truly innovative in the face of opposition from the delta area's extremely conservative politicians and physicians would have been enormous. Tufts, by selecting a Negro community as the site and by contributing its own professional resources to the center, seems to have largely avoided this problem.

Nearly two-thirds of Bolivar County's 58,400 inhabitants are Negroes, and for 60 squares miles or so around Mound Bayou, in the northern part of the county, almost all the land is Negro-owned. Mound Bayou traces its beginnings to the period following Reconstruction; it became an incorporated town in 1898 and now has a population of about 1300. The mayor and other local officials are Negroes.

Although the Mound Bayou area has an unusual number of Negroes earning decent livings from their cotton farms and business enterprises, the population in general is poor and the pressures to migrate are heavy. From 1950 to 1960, in the county as a whole, the Negro population declined by more than 14 percent. A high infant mortality rate (56.2 per 1000 live births during 1964) indicates the deplorable health conditions under which most Bolivar Negroes live. And in Bolivar, as elsewhere, the companion of poverty and ill health is ignorance. At least half of the county's adult Negroes have less than a fifth-grade education.

Left to itself, Bolivar would be a long time in bringing good health services to the Negro population. There are some 20 physicians, three of them Negroes, practicing in the county; only a few live in the area in which the OEO health center is to provide intensive service. In this area there are two small, financially hard-pressed

hospitals founded by Negro fraternal orders; each is attended by a Negro physician who devotes some time to private practice. Bolivar's principal medical facility is the modern hospital at Cleveland, the county seat, where most of the 20 doctors practice. This hospital has been unwilling to comply with the Civil Rights Act of 1964, and unless it shows evidence of a change of policy its access to federal funds will be cut off this month.

The Tufts staff found that many of Bolivar's poor Negroes have no ready access to medical service. Bolivar has no public "charity" hospital, and a barrier to admission to the county hospital is the frequent demand for a $50 cash payment in advance. Negroes are often referred to the state charity hospital at Vicksburg, more than 100 miles away.

Moving into this near-vacuum, the Mound Bayou center will provide free diagnostic service and treatment for all the poor of its service area. An ambitious "outreach" program will be mounted to encourage families to use the center.

When the center's staff attains top strength it will have a full range of health personnel and social workers. The director will be an M.D., H. Jack Geiger, professor of preventive medicine at Tufts. The associate director will be a Negro social worker from Boston. In addition to 12 physicians (pediatricians, internists, obstetrician-gynecologists, a psychiatrist, and a surgeon), the staff will include 11 registered nurses, two nurse midwives, three social workers, a nutritionist, and various laboratory technicians and other health workers.

A large corps of nonprofessional workers will be recruited locally and trained for such tasks as health education, improving environmental sanitation, and organizing the community health associations which are expected eventually to take part in deciding center policies. Meaningful community participation in policy-making, which has a high place in antipoverty-war doctrine, is expected to be much more difficult to achieve for Bolivar's widely dispersed rural population than it has been for the urban poor.

A crucial question concerning OEO's neighborhood health centers is that of whether they will be able to maintain their initial quality and élan. The question will be even more pertinent in the case of a center started by a university team which eventually will depart. Geiger says the hope is that within 5 years the Mound Bayou center will be staffed and directed primarily by Mississippians. Four of the physicians on the original staff will come directly from Tufts (all staff physicians will hold faculty appointments). But Geiger has a stack of letters from Negro physicians, technicians, and nurses who were born in Mississippi and would like to return, provided good professional opportunities are available. All three of the Negro physicians Geiger has hired thus far for the center are natives of Mississippi, and two of them were recruited in the North.

H. Jack Geiger

Tufts and OEO are seeking to strengthen the Mound Bayou hospitals as a step toward enlarging the pool of technical and professional resources available to the health center. Most of the center's patients needing bed care will be referred to one of these institutions, and, as the hospital staffs are expanded, joint appointments to the hospitals and the center should be possible. The hospitals, which have been merged administratively, are expected to receive a federal grant for an expansion program planned with the assistance of Tufts and of Meharry Medical College, of Nashville, Tennessee, where about half of the nation's Negro physicians have been trained.

The Mound Bayou center's long-run prospects for achieving a major degree of financial self-sufficiency depend, Geiger believes, on an improvement in the area's economic condition. Tufts, along with Atlanta University and several federal agencies, is assisting in the planning of a general upgrading of public facilities, and in efforts to bring in industry.

The health center and the local hospitals would benefit financially from Medicaid, but Mississippi has not yet elected to participate in this program of assistance to the medically indigent. However, the Mississippi State Medical Association, which views the Mound Bayou project with distaste, has been promoting the establishment of a Title 19 program. The comment has been made that, without Medicaid, other OEO health centers are likely to be established. "I'm delighted that the OEO program acts as that kind of a catalyst," says Geiger.

Geiger adds, however, that he hopes his center will enjoy cooperative and noncompetitive relations with the state and county health agencies and with white as well as Negro physicians. Even before Mound Bayou was chosen as the site, Geiger discussed the project with Archie L. Gray, the state health commissioner. He has since explained it to a number of other individuals and groups belonging to Mississippi's medical community. The response has not been encouraging. Gray appears to regard the center as a Trojan horse. "My feeling is that its purposes are other than as stated," he says cryptically. Such suspicions have not been lightened by the knowledge that during Mississippi's long, hot summer of 1964 Geiger served at Jackson with the Medical Committee for Human Rights, a group concerned with civil rights and health.

The Delta Medical Society, to which Bolivar County's white physicians belong, has condemned the Mound Bayou project, reportedly by a vote of 30 to 1, with a few members abstaining. To many, the project smacks, no doubt, of socialized medicine. But the thing perhaps resented most of all is the fact that the project will be run by outsiders—by Tufts, a Yankee institution.

Could the project's apparent isolation from Mississippi's white medical establishment have been avoided? Might it have been possible, for instance, to have had the University of Mississippi Medical Center, at Jackson, collaborate with Tufts in running the Delta Health Agency? No definite answer is possible, for, although the delta project has been discussed with the university, neither Tufts nor OEO has suggested or contemplated that the University Medical Center might share in the project management. Yet, although the Medical Center has had progressive

leadership, it seems altogether unlikely that, whatever its inclinations, the center would have found it politically possible to take a major part in the project.

The Tufts Medical School is planning a curriculum revision to reflect, among other things, a greater concern for the delivery of health services and for the social conditions contributing to ill-health. Its senior-year students as well as some of its faculty will be taking part in its health center projects. Each student will be assigned to a family health care group, an interdisciplinary team (a pediatrician, an internist, a social worker, and community health nurse) responsible for the care of certain families. The team will meet daily to pool information and make a diagnosis of fundamental family health problems.

Tufts expects such innovations as the family health care groups and the extensive use of nurses and other health workers for all tasks not requiring a physician's special skills to permit high quality of care at reasonable cost. "It's cheaper," Geiger says, "for health workers to teach mothers how to avoid contamination of water and food supplies than it is for a doctor to stay up all night giving intravenous fluids to a moribund infant with infectious diarrhea."

Thus, a prospectus for a breakthrough in comprehensive health care for the rural poor of the Deep South has been drawn up. Variations of the Mound Bayou project, and probably some markedly different formulations, will have to be tested before OEO develops a health program flexible enough in concept and execution to succeed in a variety of rural situations.

In some rural areas the force of habit and the influence of conservative local physicians will be such that attempts to launch even mildly innovative health programs will meet with difficulties. Indeed, a few years ago four counties in eastern Kentucky were excluded from a more or less conventional diagnostic screening program by the U.S. Public Health Service because of opposition or lack of cooperation from the local medical societies.

The success of even the best-planned programs for delivery of health services in poor rural regions will depend partly on an infusion of federal funds to bring about stronger networks of regional hospitals and satellite facilities. The Appalachian Regional Commission is supporting a program in Kentucky and eight other states to provide comprehensive care by improving facilities and reorganizing services along lines of regional cooperation. Similar efforts are likely to be needed elsewhere. New Social Security and public-assistance programs, such as Medicare and Medicaid, should make it possible for doctors to practice in poor rural areas and still enjoy large incomes. For example, the lone private practioner in the village of Hyden, Kentucky, saw his taxable income increase from about $5000 in 1962 to $35,000 last year. His case is exceptional only in that most doctors of Appalachia were earning substantially more than he was in 1962 and many are earning more than he is today. Given the improved financial incentives and the growing federal efforts to overcome the national shortage of physicians, rural areas should soon be attracting and holding more doctors.

But while new facilities and more physicians are vitally needed, the experience of the cities has demonstrated that, unless the delivery of services is improved and made more responsive to the needs of patients, magnificent hospital buildings and well-trained staffs do surprisingly little good for large numbers of the poor. In its programs in Mississippi and other states, OEO is trying to show that the health needs of poverty areas of rural as well as urban America can be met.

—LUTHER J. CARTER

Federal Paper-Work Explosion: New Form Bothers Universities

A new federal questionnaire produced a stormy meeting between university business officers and National Science Foundation representatives in Washington on 7 June. "I am almost livid about the proliferation of these government questionnaires," one business officer stated after the meeting. "As far as I am concerned, this is the straw that breaks the camel's back."

Another business officer who attended the meeting said that the new questionnaire had reinforced his feeling that "the universities are like swimmers surrounded by sharp-toothed piranha fish which keep nibbling away at us. In time, these government agencies will leave our bare bones at the bottom of the river."

The document which originally initiated this heated reaction was an innocuous-appearing memorandum sent by White House science adviser Donald F. Hornig to college and university presidents announcing the "new government-wide reporting system on federally supported academic science and engineering." The system is sponsored by the interagency Federal Council for Science and Technology (FCST), which Hornig heads, and was developed by FCST's Committee on Academic Science and Engineering (CASE). Leland J. Haworth, director of the National Science Foundation (NSF), is chairman of CASE. Responsibility for the new reporting system has been assigned to NSF.

Universities are supposed to start keeping records relevant to the CASE system on 1 July, although they will not be asked to file their first report until the autumn of 1968. Beginning at that time, NSF will annually provide each university with a list of federal projects active at each institution during the past federal fiscal year (1 July to 30 June). NSF will compile the list from information supplied by individual government agencies. A university will be asked to supply the requested manpower information within 2 months and to return the relevant part of the list to the agency which supplied the grant or contract. Among those grants which will require reporting are: project awards for basic and applied research and development at universities (excluding Federal Contract Research