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WASHINGTON, D.C. 20548

HUMAN RESOURCES
DIVISION

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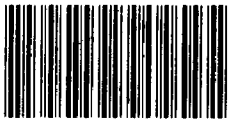

B-164031(5)

The Honorable Joseph A. Califano, Jr.
The Secretary of Health, Education,
and Welfare

Dear Mr. Secretary:

During our ongoing study of the epidemiological activities of the Center for Disease Control (CDC), we have noted opportunities for CDC to improve its management of certain Disease Investigation, Surveillance, and Control (DISC) activities. More specifically, CDC should improve the planning, administration, and evaluation of DISC activities and the management of its Epidemic Intelligence Service (EIS) Corps. CDC has begun some administrative actions which could result in improvement in these areas. We are reporting to you now on the need for additional improvements.

These additional improvements could make DISC activities more responsive to changing disease threats and to varying State disease control capabilities. We recommend that you direct the CDC Director to initiate or, where applicable, intensify and expand efforts to :

(1) --set priorities for funding and carrying out all DISC activities based on the relative threat posed by disease conditions, the potential for control or reduction of disease, the economic feasibility, and the States' needs for assistance in dealing with disease problems;

(2) --budget and account for DISC activities by specific disease or disease group;

(3) --establish information systems and processes that will assess the quality of CDC's surveillance data and changes in the States' abilities to handle changing disease problems;

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--determine the need for CDC's continued role in training epidemiologists and clearly identify the priority of its training program relating to the States' needs for assistance;

--investigate the possibility of a career corps of epidemiologists to replace the current 2-year program; and

--evaluate the potential for significantly greater use of lay epidemiologists instead of physicians in the EIS corps.

The following discussion of our observations sets forth the bases for the above recommendations.

BACKGROUND

CDC is responsible for providing leadership and direction to programs and activities designed to improve the health of the people in the United States by preventing and controlling diseases, improving clinical laboratory performance, and assuring safe and healthful working conditions. CDC has broad legislative authority to engage in any disease prevention and control activity that it deems necessary to protect and improve public health. DISC services are part of CDC's disease prevention and control function. Such services are authorized by the provisions of sections 301, 307, 310, 311, 322, 325, 327, 328, 352, 353, and 361 through 369 of the Public Health Service Act.

Generally, DISC services are provided in cooperation with State and local health authorities and are directed primarily at communicable diseases as the need arises. Some resources are devoted also to selected chronic diseases, health problems in family planning, and nutritional problems. CDC also participates with foreign countries and international health organizations to provide DISC services.

CDC's DISC services include

--helping State, local, and some foreign health care providers investigate disease outbreaks through on-site studies and laboratory support,

--promoting and coordinating surveillance of disease trends and developments,

--researching disease sources, methods of spread, and outcome,

--recommending disease prevention and control procedures, and

--training State, local, and foreign health care providers in techniques of epidemiology.

CDC often provides these services through its EIS corps. CDC operates the EIS corps as a means of training epidemiologists for the Nation. The corps is composed almost entirely of newly graduated physicians, some of whom work full time on location with State health departments, while others work primarily at CDC headquarters and provide services relating to various disease conditions.

Our review included examining (1) laws authorizing DISC activities, (2) planning and management processes of those CDC organizational units involved in DISC activities, and (3) the coordination and interaction of DISC activities within CDC and between CDC and other Federal, State, local, and international health organizations. Our work was done primarily at CDC, with additional work at four State health departments, four local health departments, and two medical schools. We interviewed public health officials, health care providers, and educators responsible for DISC or related activities; and we reviewed published literature, CDC records of DISC activities, and reports of external studies of DISC.

MANAGEMENT OF DISC SERVICES NEEDS IMPROVEMENT

CDC should take additional measures to assure that its DISC services are provided efficiently and effectively. More specifically, CDC needs to (1) consider additional factors to set its service priorities, (2) budget by disease or disease group, and (3) evaluate the need for and effectiveness of its DISC services. CDC, through a Programs and Policies Advisory Committee, is considering such improved management

techniques for proposed additional DISC efforts. 1/ The same techniques should be applied now to all DISC activities.

CDC should consider additional factors to set DISC service priorities

CDC should consider local disease control capabilities, disease severity and changes in disease incidence, and economic feasibility of disease intervention, in addition to the criteria now used to set DISC service priorities. According to CDC officials, DISC service priorities are currently based on (1) the occurrence of a disease outbreak, (2) CDC's ability to assist in disease reduction or control, and (3) the particular interests of CDC staff. As a result, CDC often provides DISC services for communicable diseases whose control measures have become more common and whose incidence appears to have been greatly reduced since CDC was established.

Local disease control capabilities may have improved since CDC was established. Two of the four State epidemiologists we interviewed said their States could control essentially all common disease outbreaks without CDC assistance. One said only CDC's financial support is needed, and the other said both financial and technical assistance are needed. According to a CDC official, at least 30 States now have trained epidemiology staffs capable of controlling most outbreaks of communicable diseases within their jurisdictions without CDC assistance. These capabilities should be more closely monitored to better determine the need for CDC's assistance.

CDC's Programs and Policies Advisory Committee Report proposes that CDC, through its DISC techniques, can and should contribute to the prevention and control of high morbidity and mortality diseases, such as heart disease, cancer, hypertension, and diabetes. The report cites disease threat, potential for control or reduction, and need for CDC assistance as considerations in proposing such new DISC activities. It also includes economic feasibility of disease intervention as a consideration. The report specifies, however, that the

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1/"Recommendations for a National Strategy for Disease Prevention," Report to the Director, CDC, by the Center for Disease Control Programs and Policies Advisory Committee (Ad Hoc), June 30, 1978.

new or expanded participation would not compete for priority with traditional DISC activities. We believe that whether or not DISC resources are used for high morbidity and mortality disease prevention and control, priorities for all DISC services should be based on need for CDC assistance, disease threat, potential for control or reduction, and economic feasibility.

Budgeting and accounting by specific disease or disease group could provide CDC officials better management information about the costs of DISC services

CDC's current budgeting method gives CDC officials little cost information about providing DISC services by specific disease or disease group. As a result, CDC officials cannot evaluate the relative merits of DISC resource allocation by disease category. The annual funding level for DISC services is based on the amount received the previous year plus an inflation adjustment and estimates for new initiatives. Funds are accounted for by object classification, such as salaries or travel costs, rather than by disease category.

Although CDC responds to various unanticipated disease occurrences, such as Legionnaires Disease, most of its DISC services are applied to continuing, anticipated disease conditions. Consequently, with some allowance for unanticipated diseases, CDC could budget and accumulate costs by disease or disease group for most of its DISC services. This cost information would make DISC services more accessible to evaluation and would permit cost to be a consideration in establishing DISC service priorities.

Evaluation of DISC services is needed

Although DISC services have been included in CDC's plans for evaluation, CDC has performed only limited evaluation of these services. As a result, the need for and effectiveness of DISC services have not been adequately determined. CDC should evaluate two specific areas--the changing epidemiological capabilities of State health departments and the usefulness and reliability of CDC's disease surveillance system.

State capabilities need evaluation

The need for CDC epidemiologists to provide DISC services to State health departments may be changing because the availability of epidemiologists from other sources is changing. CDC has provided epidemiologists to the States since 1951. However, in recent years the supply of epidemiologists from other sources has increased. According to a 1975 compilation, 1/ some 16 schools of public health granted about 370 graduate degrees in epidemiology and biostatistics; an increase from 13 schools that granted a total of about 80 degrees in 1960.

Differences of opinion exist regarding the effect of this increase on the DISC capabilities of State health departments. According to a CDC official, the DISC capabilities of most States have improved because they now have their own trained epidemiologists. In 1975, another CDC official, a former State epidemiologist, said that an adequate number and distribution of communicable disease epidemiologists existed in State health departments. 2/ Other public health officials contend that more epidemiologists are needed, especially for chronic disease problems. Such differences of opinion and indications of changes in the availability of epidemiologists to States, and their potential effect on the need for CDC's DISC services, evidence the need for continuing national evaluation of State capabilities.

CDC's surveillance system needs evaluation

CDC officials consider disease surveillance systems the backbone of CDC's DISC services; yet, the usefulness of the surveillance data may be limited because of inaccurate or incomplete reporting. Calculating true disease rates, determining appropriate control measures, and measuring the effectiveness of CDC sponsored control programs depend on complete and valid surveillance data.

1/Workshop on "Matching Needs and Resources in Epidemiology and Biometry," University of California at Los Angeles, Chaired by Telford H. Work, M.D., April 7 and 8, 1975, p. 114.

2/Ibid, pp. 88-91.

CDC's disease surveillance includes collecting, tabulating, analyzing, and reporting data on the occurrence and distribution of diseases in a defined population. CDC relies on private physicians, State and local health officials, and others to report disease cases. The completeness and accuracy of reporting vary over time and by reporting source and are affected by disease incidence and severity, extent of publicity, and ease of reporting. According to various estimates, the completeness of case reporting for certain common diseases, such as measles and salmonellosis, varies from less than 1 percent to over 80 percent.

CDC officials believe the data collected reflect long-term disease trends, even though the completeness and accuracy of reported rates for most diseases are unknown. CDC officials do, however, recognize the need to obtain quality surveillance data. They have established a new surveillance section and are considering using computer terminals to obtain morbidity and mortality statistics directly from State health departments and major hospitals.

EIS CORPS MANAGEMENT NEEDS IMPROVEMENT

Through improved management of the EIS corps, CDC could improve DISC services and could provide some services at less cost. CDC should better define and balance the need to train epidemiologists for the Nation and the need to provide DISC services. Also, CDC should consider using nonphysician epidemiologists to perform many DISC tasks currently performed by physician EIS corps members.

Training priorities conflict with providing effective and efficient services

CDC's legislative authority clearly allows CDC to provide DISC services, but is unclear regarding CDC's training of epidemiologists for the Nation. In practice, training the EIS corps often takes precedence over providing DISC services. As a result, the efficiency and effectiveness of DISC services are reduced because (1) the constant turnover of EIS corps members means inexperienced epidemiologists provide the services and (2) the distribution of EIS corps services largely reflects training priorities rather than State needs.

The EIS corps has about 85 members. Each member serves in the corps for about 2 years. About 50 members are assigned to CDC headquarters, and the other members are assigned full time to State health departments and other health care organizations. Because about half the corps members leave CDC employment each year, newly graduated physicians comprise almost half of the corps. Furthermore, because most new corps members have little previous epidemiological training, they learn how to provide DISC services after joining CDC. The continuing need to train EIS corps members often influences how they are used.

In assigning corps members to States, CDC considers the States' training capabilities and the members' preferences. These considerations result in CDC assigning corps members to States in which the State epidemiologist has good training skills, the State health department is well organized and developed, and the population density offers the most opportunities for disease investigations. One State, for example, which both CDC and State officials consider adequately equipped to control most of its own disease problems, had three EIS corps members assigned to it. On the other hand, in fiscal year 1978, 12 States that requested EIS corps members got none because CDC officials believed those States provided inadequate training experience or because those States were otherwise unable to attract corps members.

In assigning headquarters EIS members to disease investigations, CDC answers each request for assistance. However, CDC (1) answers many requests for assistance which involve relatively few cases of illnesses or (2) provides assistance to States which already have EIS officers assigned. Both CDC and State officials said that many of these investigations are done to provide headquarters EIS corps members epidemiological experience on particular disease conditions.

CDC officials acknowledge that the priority given to training conflicts with providing DISC services, but they maintain that this practice has long-term benefits because the physicians who leave the EIS corps after their 2-year tour will use their epidemiology training in any future public or private health care work. According to CDC officials, other advantages of providing the 2 years of employment and epidemiology training to successive groups of

physicians are (1) to maintain a continuous base of support of CDC's programs within the medical profession and (2) to provide a continuous pool of trained professionals from which CDC can staff its own permanent positions.

Using a permanent EIS staff, rather than emphazing training a corps of epidemiologists, could improve the efficiency and effectiveness of providing any needed DISC services. A permanent staff could be fully trained and their services distributed among the States based on the greatest need for service rather than the need for EIS corps training. Also, the staff would be able to provide onsite training for less experienced State and local personnel. Because the EIS staff could be providing training rather than receiving it, States' capabilities for handling their own disease outbreak problems could be improved.

Greater use of nonphysician epidemiologists could reduce cost without reducing service

Nonphysician epidemiologists can perform many tasks currently handled by physician EIS corps members at about 40 percent of the salary cost. State and county epidemiologists, current and former EIS officers, CDC officials, and officials at schools of public health that we interviewed generally agreed that nonphysician epidemiologists can adequately perform disease surveillance functions, respond to telephone requests for advice and assistance, and take care of many other EIS activities, including certain routine disease investigations and research projects.

In addition, increased nonphysician participation in a career EIS program might help CDC attract people interested in remaining in public health service. Since 1951, about 25 percent of 880 EIS corps members have remained in public health. While some EIS corps members said they joined the corps because of an interest in public health, most of the current and former members that we interviewed said they joined the EIS corps to take advantage of CDC's on-the-job epidemiology training or to avoid the military draft. Other incentives cited for joining were financial assistance for medical school expenses and opportunities for travel, recognition, and prestige. CDC could get greater return on its training investment from people who plan a career in public

health than from those who view the EIS corps as a temporary benefit or as a steppingstone in their medical careers.

CDC officials agree that using nonphysicians (1) would cost significantly less and (2) might improve the corps retention rate. After our discussions on this matter, the director of CDC's Bureau of Epidemiology renewed previous efforts with the president of the Conference of State and Territorial Epidemiologists to review the potential for using nonphysician epidemiologists.

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We appreciate the cooperation given our representatives during this review and welcome the opportunity to discuss the above matters with you or your staff.

This report contains recommendations to you. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report. The 60-day period shall begin on the date of this letter.

We are also sending copies of this report to the Chairmen of the House and Senate Committees on Appropriations, Senate Committee on Governmental Affairs, House Committee on Government Operations, House Committee on Interstate and Foreign Commerce, and Senate Committee on Human Resources. A copy is also being sent to the Director, Office of Management and Budget.

Sincerely yours,

Gregory J. Ahart
Director