REPORT TO THE CONGRESS

Review Of Selected Communicable Disease Control Efforts B-164031(2)

Center For Disease Control
Department of Health, Education, And Welfare

BY THE COMPTROLLER GENERAL OF THE UNITED STATES

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WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This is our report on our review of selected communicable disease control efforts of the Center for Disease Control, Department of Health, Education, and Welfare.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget, and to the Secretary of Health, Education, and Welfare.

Elmer B. Staats

Comptroller General
of the United States

Contents

ABBREVIATIONS

CDC	Center for Disease Control
DPT	diphtheria, pertussis, and tetanus
GAO	General Accounting Office
HEW	Department of Health, Education, and Welfare
NIH	National Institutes of Health
PHS	Public Health Service

COMPTROLLER GENERAL'S REPORT TO THE CONGRESS

REVIEW OF SELECTED COMMUNICABLE DISEASE CONTROL EFFORTS

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D I G E S T

WHY THE REVIEW WAS MADE

The Federal Government, through the Department of Health, Education, and Welfare (HEW), assists State programs to control communiable disease

--directly through grants to support control activities and

--indirectly through its own research and by financially supporting research for improving preventive, curative, and rehabilitative aspects of such diseases.

GAO wanted to determine whether Federal control programs could be improved. GAO also reviewed the effects that changes in Federal funding have had on the level of funding of State and local tuberculosis control programs.

GAO's review covered Alabama, Colorado, Georgia, Massachusetts, Michigan, Ohio, South Carolina, Tennessee, and Texas. These States had 1970 populations totaling more than 53 million, about 25 percent of the Nation's total. These States accounted for 28 percent of the reported cases of polio, rubella, measles, diphtheria, pertussis (whooping cough), tuberculosis, and venereal diseases in 1970. (See p. 38.)

FINDINGS AND CONCLUSIONS

Great progress has been made in controlling or reducing the incidence of a variety of communicable diseases.

Even so, some of these still afflict segments of the population.

--More than 2 million people each year are affected by venereal diseases, particularly gonorrhea. (See p. 14.)

--Tuberculosis is declining in incidence but still accounts for two-thirds of deaths caused by all communicable diseases. (See p. 27.)

--Immunization levels for a variety of communicable diseases are below levels generally considered medically necessary to protect the population in many areas of the Nation from epidemics. (See p. 6.)

Immunizations

Immunization levels for common communicable diseases in the nine States reviewed were, with few exceptions, below the level Federal and State public health officials considered necessary for protection from epidemics.

Federal financial resources available for State immunization programs could be used more efficiently if HEW made greater use of its authority to supply vaccines instead of financial aid to the States. States could use resulting savings to procure additional vaccine or for other public health services.

If the prices available to the Federal Government during a 12-month period for polio, rubella, and measles vaccines had been available to the nine States, they could have saved about $336,000 of the $1.3 million they paid.

In limited instances when HEW furnished vaccines instead of financial assistance, the States had no serious logistical problems and indicated their procurement and distribution systems were compatible or could be adapted to a system of federally supplied vaccines.

Eight of the nine States generally were willing to accept as much of their vaccine needs as the Federal Government could supply, and the other State would accept certain vaccines. (See p. 10.)

Venereal disease

The incidence of venereal diseases, particularly gonorrhea, has reached alarming levels. (See p. 14.) Venereal disease control in the United States has historically meant syphilis control.

The prevailing method, known as epidemiology, for controlling venereal disease involves confidential interviews with diagnosed cases to identify contacts so that they may be notified and treated. This action inhibits the further spread of venereal disease. However, epidemiology as a control mechanism is hampered because private physicians report only a small percentage of diagnosed cases. (See p. 16.)

In fiscal year 1972 a nationwide gonorrhea control program was initiated. The program guidelines require that screening programs for diagnosing the disease in females be established in a variety of health care settings and that males reported to have gonorrhea be interviewed to identify and treat their contacts.

Pilot studies completed before the control program began showed that in most health care settings the screening of females was less productive than confidential interviews with diagnosed males to identify and treat contacts. (See p. 18.)

Since funds available for controlling gonorrhea are limited, it is vital that grantees maintain an appropriate mix between the two control approaches to realize the full cost advantage of each approach.

Public health officials in several States reviewed emphasized identifying and treating asymptomatic gonorrhea as the key to controlling the disease.

HEW supports basic research in venereal disease in-house and through grant programs. However, despite longstanding recognition of the need for venereal disease research--particularly to identify ways to prevent and control the diseases--increased Federal support

of such research has been recent, primarily since fiscal year 1972. (See p. 22.)

Support had generally been lacking for research to develop a fast, effective blood test for gonorrhea and immunizing agents for syphilis and gonorrhea--high-priority needs for an effective control program.

Tuberculosis

Before fiscal year 1970, Federal support for State tuberculosis control activities was provided through grants distributed according to the incidence of the disease. Starting in fiscal year 1970, support has been provided primarily through formula grants for general health services which are used according to priorities established by the States. (See p. 27.)

Because of continued congressional concern that States could not adequately fund tuberculosis control activities when project grants were terminated, GAO compared the funding levels in fiscal year 1969 (the year before transition) with 1971 levels (the year after transition).

The GAO comparison showed that the result of changing the mechanism for providing Federal funds for tuberculosis control varied among the States. Five States received sufficient funds from the change to the formula grant program to offset the loss of project grants, but only two used the increased formula grant funds to completely offset the loss of project grants. Four States received reduced funds, and only chose to offset most of the reduction with other avialable funds.

Consequently, six of the eight States chose not to offset the total loss of Federal project grant funds with other available funds, including Federal formula grant funds provided under section 314(d) of the Public Health Service Act. (See p. 30.)

Any impact on the incidence of tuberculosis from changes in control efforts because of Federal support shifting from project to formula grants may not be apparent for some time because tuberculosis can remain undetected for several years.

RECOMMENDATIONS

The Secretary of HEW should require the Center for Disease Control to:

--Make greater use of authority provided by sections 314 and 317 of the Public Health Service Act by:

  1. Publicizing its willingness to increase the use of its centralized procurement system for vaccines to meet State requirements.

  2. Encouraging the States to accept vaccines supplied by HEW instead of financial assistance.

--Periodically review the results of gonorrhea control projects to determine whether the projects are being carried out in the most cost advantageous way and, if not, require grantees to change the projects. (See pp. 13 and 21.)

AGENCY ACTIONS AND UNRESOLVED ISSUES

HEW concurred with the GAO recommendations.

HEW advised GAO that 10 States were purchasing vaccine under the Center for Disease Control's procurement contracts and that HEW would encourage official State health agencies to use this centralized procurement system. (See p. 13.)

Although concurring with the intent of the GAO recommendation to periodically review the results of the gonorrhea control projects, HEW pointed out that using a firm standard for measuring project effectiveness may not be appropriate.

The standard used to measure the performance of gonorrhea control efforts may need to be changed depending on program results and costs. Because of limited funds available for gonorrhea control, HEW should assure itself that grantees maintain an effective mix of control approaches. This is especially important in view of varying results of screening of females in diffierent health care settings. (See p. 21.)

MATTERS FOR CONSIDERATION BY THE CONGRESS

This is an information report designed to strengthen congressional oversight of communicable disease control.

CHAPTER 1

INTRODUCTION

Although most communicable diseases are controllable or preventable, they pose a serious threat to the Nation's health. They cripple, kill, and cause immeasurable human suffering, in addition to lost wages and the economic burden placed on the States' public health systems by certain diseases which require long-term rehabilitative and custodial care.

Communicable diseases respect no geographic boundaries; therefore, one State's control efforts impact on the effectiveness of other States' efforts. The Federal Government, through the Department of Health, Education, and Welfare (HEW), assists State control programs directly through grants to support control activities and indirectly through in-house research and by financially supporting research for improving the preventive, curative, and rehabilitative aspects of communicable diseases.

HEW's Center for Disease Control (CDC), in Atlanta, Georgia, is the focal point of the Nation's efforts in communicable disease prevention and is generally considered the Nation's center of competence for controlling communicable diseases. CDC provides leadership and specialized services to State and local health departments to help develop increasingly effective control programs and stem the spread of communicable and certain other diseases.

Although great progress has been made in controlling or reducing the incidence of a variety of communicable diseases, some still afflict major segments of the population. Venereal diseases, particularly gonorrhea, affect more than 2 million people each year and are especially prevalent in some areas of the Nation. Tuberculosis is declining in incidence but still accounts for two-thirds of the deaths caused by all communicable diseases.

IMMUNIZATION

Vaccines have become major resources for preventive medicine. Their use has significantly reduced the incidence of communicable diseases in the United States, including polio, measles, rubella, diptheria, and pertussis (whooping

cough). From 1963 to 1972 the number of reported cases of polio declined from 449 to 31 and of measles from more than 385,000 to about 32,000. (See app. II.)

Although the incidence of communicable diseases has substantially declined, Federal public health officials consider that in many areas of the Nation the number of persons immunized against a variety of communicable diseases is below the level needed to protect the population from potential epidemics. CDC has not officially established minimum immunization levels or goals; however, CDC officials told us that an 85-percent level would normally be needed to protect localized sections of the population from epidemics. (See app. III for examples of epidemics or outbreaks of immunizable communicable diseases.)

Each September the Bureau of the Census in cooperation with CDC conducts the United States Immunization Survey to gather data on immunizations and incidence for certain communicable diseases. The 1972 survey, which sampled 35,500 housing units in major geographic regions, showed that diptheria-pertussis-tetanus (DPT) and polio, measles, and rubella immunizations fell short of the 85-percent level in every region except the New England region, which attained the 85-percent level for DPT.

Geographic region	Immunization level			
	DPT	Polio	Measles	Rubella
	(percent)			
New England	87.0	78.9	82.6	68.3
Middle Atlantic	79.3	79.1	79.6	74.5
East North Central	77.4	71.5	74.3	73.9
West North Central	82.0	74.7	77.8	73.1
South Atlantic	81.8	73.9	78.7	76.3
East South Central	80.1	77.2	76.7	76.6
West South Central	78.3	76.2	77.5	81.1
Mountain	83.8	80.9	74.6	77.9
Pacific	79.8	77.0	75.9	72.8

The immunization levels for many localized segments of the population within these major geographic regions were lower than the overall immunization levels. For example, urban nonwhite and urban poverty populations generally had lower immunization levels than other groups.

Particularly deficient was the immunization level for children 1 through 4 years of age, a period of high susceptibility to these diseases. During 1963-72 the overall polio immunization level in this age group declined while the overall DPT and measles immunization levels increased. (See app. IV). In 1972 the immunization levels for all these diseases were lower than generally considered needed for this age group. Faced with continuing declines in immunization levels, CDC designated October 1973 as "Immunization Action Month" with the objective of immunizing a minimum of 90 percent of the estimated susceptible children, who are between ages of 1 and 4 years, against DPT, measles, rubella, and polio by the time they complete their first year of school.

FEDERAL PROGRAMS FOR COMMUNICABLE DISEASES

The Federal Government has financially assisted communicable disease control for many years. During the past decade congressional concern about specific communicable diseases has intensified. Particular attention has been focused on common immunizable diseases, venereal diseases, and tuberculosis. This concern has stemmed from either a real or prospective epidemic or danger of substantially increased incidence of these diseases.

Current Federal support of communicable disease control efforts is authorized under various legislation, principally within the following Public Health Service (PHS) Act grant programs.

--Communicable disease project grants, authorized by sections 317 (42 U.S.C. 247(b)) and 318 (42 U.S.C. 247 (c)) of the act, to control tuberculosis, measles, venereal diseases, and other communicable diseases.

--General public health services grants authorized by section 314(d) of the act (42 U.S.C. 246 (d)), to assist the States in establishing and maintaining an adequate program of public health services.

--Health services development project grants, authorized by section 314(e) of the act (42 U.S.C. 246(e)), to provide health services in limited geographic areas or health services with specialized regional or national significance.

The amounts of Federal grant funds that the Congress specifically appropriated to support communicable disease control efforts or that HEW administratively earmarked or set aside for this purpose for fiscal years 1964-74 are shown in the following table. They do not include funds provided for control and prevention activities under State public health services programs receiving Federal assistance through grants authorized by section 314(d) of the PHS Act.

Fiscal year	Category of communicable diseases			
	Immunizable	Venereal	Tuberculosis	Total
	(millions)			
1964	$ 8.7	$ 5.9	$ 4.5	$ 19.1
1965	10.2	6.2	8.0	24.4
1966	8.0	6.2	12.7	26.9
1967	8.0	6.2	18.0	32.2
1968	9.1	6.1	16.0	31.2
1969	9.6	6.3	20.3	36.2
1970	16.0	6.3	[a]3.3	25.6
1971	16.0	6.3	3.3	25.6
1972	17.0	22.3	2.0	41.3
1973	14.5	24.8	-	39.3
1974	6.2	24.8	-	31.0
Total	$123.3	$121.4	$88.1	$332.8

[a]Starting in fiscal year 1970, Federal financial support was provided principally through formula grants, under section 314(d) of the PHS Act, which are not restricted to use for a particular disease. (See p. 28.)

Attempts to control communicable diseases by nationwide immunization began in the United States with the widespread use of polio vaccine, especially oral vaccine, in the late 1950s and early 1960s. Before that time, immunization programs depended on State and local efforts. The Vaccination Assistance Act of 1962 (sec. 317 of the PHS Act) and the March 1963 licensing of a vaccine for measles provided the impetus for initiating a national immunization program through CDC in 1964. The act authorized grants to States for community vaccination programs against polio, diptheria, pertussis, and tetanus. In 1965 the act was extended to include measles. Beginning in fiscal year 1969, HEW earmarked part of the funds available for health services

development authorized by section 314(e) of the PHS Act for project grant support for communicable disease control. In fiscal years 1970-72, $45 million of the $49 million in Federal funds available for immunization programs was earmarked for rubella immunization.

Federal assistance for venereal disease control remained relatively constant until fiscal year 1972. Until then, the entire Federal assistance was used to support syphilis control activities. The rapid rise of gonorrhea to epidemic proportions prompted pilot testing of approaches to control the disease, and in fiscal year 1972, the Congress more than tripled total Federal assistance for venereal disease control by appropriating $16 million to initiate a nationwide gonorrhea control effort.

Federal assistance for controlling tuberculosis rose substantially through fiscal year 1969. Since then, most Federal assistance for tuberculosis control has been included in the general public health services grant program authorized by section 314(d) of the PHS Act. Under that program, States support a broad spectrum of health services which may or may not include tuberculosis control activities. Funds appropriated under section 314(d) are allotted to the States on the basis of population and financial need.

CHAPTER 2

OPPORTUNITY FOR MORE EFFICIENT USE OF FEDERAL RESOURCES FOR STATE IMMUNIZATION PROGRAMS

HEW SHOULD SUPPLY MORE VACCINES THROUGH CENTRALIZED PROCUREMENT

Immunization levels for polio, measles, and rubella in the nine States we reviewed were, with few exceptions, below the level Federal and State public health officials considered necessary for protection from epidemics. Immunization levels were the lowest for children 1 to 4 years of age. State public health officials who expressed an opinion on an acceptable immunization level considered 85 percent an acceptable level for children 1 to 4 years of age. Some of these officers stated they would like to achieve immunization levels of 90 to 95 percent for children 5 to 9 years of age, and others stated that these higher levels were desirable for both age groups. Appendix V shows, excluding vaccines given by private physicians, the immunization levels for polio, measles, and rubella for these age groups in each of the nine States. Reasonable estimates of DPT immunization levels were not available in most of the nine States.

State public health officials acknowledged that acceptable immunization levels are difficult to achieve and maintain because of

- --apathy by physicians, public health officials, and the general public, toward raising immunization levels,
- --need for education to motivate people to receive immunizations, particularly those in hard to reach segments of the community,
- --lack of laws, or of their enforcement, requiring immunizations, especially for preschool children, and
- --insufficient resources to continuously operate comprehensive immunization programs.

We found that Federal financial resources available for State immunization programs could be used more efficiently if HEW made greater use of its authority to supply vaccines

instead of financial aid to the States for control and prevention of communicable diseases. Savings resulting from this action would be available to States for additional vaccine procurement or for other public health services.

HEW is authorized by the PHS Act to supply vaccines instead of financial aid. Section 314(g)(2) states that:

> "The Secretary, at the request of any recipient of a grant under this section, may reduce the payments to such recipient by the fair market value of any equipment or supplies furnished to such recipient * * * when such furnishing * * * is for the convenience of and at the request of such recipient and for the purpose of carrying out the State plan or the project with respect to which the grant under this section is made * * *."

Section 317(c)(2) contains similar language.

In those instances when HEW has used its authority to furnish vaccines instead of financial assistance, HEW has supplied vaccines up to the amount of Federal grant funds designated by the States for purchasing vaccines under their immunization projects administered by CDC. We found that the quantities HEW supplied at the request of the States usually have been insufficient to meet their vaccine requirements. Also, the States have purchased additional vaccines at higher unit prices for use in their federally supported programs for comprehensive public health services and maternal and child health services authorized by section 314(d) of the PHS Act and title V of the Social Security Act. We were not able to identify the degree to which Federal funds were involved in these procurements.

Although the States use centralized competitive-bidding arrangements to buy vaccines, we found that the quantities they bought were small compared with CDC procurements and the prices they paid were substantially higher. We compared CDC prices with State prices during a 12-month period for polio, measles, and rubella vaccines. The comparison showed that if CDC prices had been available to the nine States, the States could have saved about $336,000 of the $1.3 million they paid. The prices paid by the States were consistently higher than those paid by CDC as shown below. -

Vaccine	Unit size	CDC price per dose	State price per dose	
			Highest price	Lowest price
Polio	10 dose	$0.149	$0.264	$0.185
Rubella	1 dose	.610	.940	.730
Measles	1 dose	1.082	1.300	1.220
	10 dose	.846	.940	.940
	50 dose	.548	.900	.750
Measles-rubella combination	1 dose	1.830	2.340	2.170

The potential savings are significant, considering the quantities the States purchase. For example, one State purchased 200,000 doses of measles vaccine in 50-dose vials at 90 cents per dose compared with CDC's 54.8 cents per dose--costing the State 61 percent, or $70,400, more than it would have cost on the basis of CDC's price. With the $70,400 the State could have purchased at CDC prices an additional 128,467 doses of measles vaccine, 115,410 doses of rubella vaccine, or 472,483 doses of polio vaccine. We noted that States have procured other vaccines, such as for mumps, for which no comparable Federal procurement was available.

State public health officials had not experienced any serious logistical problems with federally supplied vaccines and indicated that their procurement and distribution systems were compatible with or could be adapted to a system of federally supplied vaccines. Eight of the nine States were generally willing to fulfill their vaccine needs through Federal Government procurements. One State would accept certain vaccines instead of financial aid but would prefer to continue to produce certain vaccines in its own laboratories.

CONCLUSIONS

Federal resources available for State immunization programs could be more efficiently used by making greater use of existing centralized purchasing arrangements for vaccines. The States we reviewed need to increase their immunization levels and have generally expressed willingness to accept federally supplied vaccines, supporting the feasibility for HEW to increase the use of its centralized procurement system for vaccines. Such action would result in savings which would be available to States for procuring additional vaccines or for other public health services.

RECOMMENDATION

We recommend that the Secretary of HEW require CDC to make greater use of the authority provided by sections 314 and 317 of the PHS Act by (1) publicizing its willingness to increase the use of its centralized procurement system for vaccines to meet State requirements and (2) encouraging the States to accept vaccines supplied by HEW instead of financial assistance.

AGENCY COMMENTS

HEW (see app. I) concurred with our recommendation and noted that present CDC vaccine contracts contain a clause which permits the States to make vaccine purchases with Federal funds under these contracts. Although the clause is not binding on the vaccine manufacturers, it is being honored by all manufacturers. HEW also advised us that 10 States are making purchases under these contracts and that CDC would encourage official State health agencies to use this centralized vaccine procurement system.

CHAPTER 3

OPPORTUNITIES FOR IMPROVING VENEREAL DISEASE CONTROL PROGRAM

Venereal disease control in the United States has historically meant syphilis control. However, in fiscal year 1972 a nationwide gonorrhea control program was initiated. The program guidelines require that screening programs for diagnosing the disease in females be established in a variety of health care settings and that males reported to have gonorrhea be interviewed to identify and appropriately treat their contacts. However, studies completed before the control program began showed that, in most of the health care settings, screening females was less cost advantageous than confidential interviews with diagnosed males to identify and treat female contacts. The limited funds available for controlling gonorrhea make it vital that control efforts be carried out the most cost advantageous way.

Gonorrhea ranks first among reportable communicable diseases and has increased to epidemic proportions during the past several years. Syphilis ranks third among reportable communicable diseases. Syphilis and gonorrhea, the two most common venereal diseases, accounted for about 765,000 cases, or 65 percent, of the nearly 1.2 million cases of communicable diseases reported in 1971. In 1972 about 858,000 cases of syphilis and gonorrhea were reported.

CDC estimates that the incidence of these venereal diseases is significantly greater, because it believes that about three cases are treated for each one reported to public health authorities. CDC estimated that during 1971, 2.2 million new cases of gonorrhea occurred in the United States, compared with the 670,000 cases reported.

Venereal disease is concentrated in urban areas and in the age group from 15 to 29 years. More syphilis and gonorrhea cases are reported for males and nonwhites than for other groups.

Syphilis is a systemic disease, attacking the whole body through the blood and lymph systems. If untreated over a period of years, the causative organism may cause insanity, inability to coordinate voluntary muscular

movements, or mortal heart or liver damage. A pregnant woman with untreated syphilis may pass the disease on to her unborn baby, which can cause the baby to die or be born mentally retarded or physically handicapped.

Gonorrhea seldom causes death, but it can cause blindness and sterility. It also adversely affects an unborn child. The complications of the disease which lead to sterility often require surgery. Gonorrhea is a particular threat to women because they may have it for a long time without any noticeable symptoms.

The nature of the aftereffects of venereal disease is such that its economic costs cannot be measured. However, HEW's "VD Fact Sheet--1971" indicated that in 1969 the estimated annual public institution cost of supporting patients with mental illness and blindness caused by syphilis was more than $47.2 million. HEW, in commenting on this finding (see app. I), stated that limited data has recently become available on the cost of complications of gonorrhea in females. Based on an extrapolation of data compiled through a study done in Memphis, Shelby County, Tennessee, the estimated 1972 cost of female complications of gonorrhea in the United States is $222,750,000. HEW cautioned, however, that such a generalization from one locality to the Nation as a whole was hazardous.

The total number of reported cases of syphilis and gonorrhea since 1965 are shown below.

Year	Gonorrhea	Syphilis	Total
1972	767,215	91,149	858,364
1971	670,268	95,997	766,265
1970	600,072	91,382	691,454
1969	534,872	92,162	627,034
1968	464,543	96,271	560,814
1967	404,836	102,581	507,417
1966	351,738	105,159	456,897
1965	324,925	112,842	437,767

In 1969, the most recent year for which such data was available, 543 deaths were reported as caused by syphilis and 3 by gonorrhea.

VENEREAL DISEASE CONTROL SYSTEM

The common approach, known as epidemiology, to controlling venereal disease is to break the chain of infection by tracing the contacts of each person involved. The epidemiological process is triggered by reporting a venereal disease case to the State or local health department. A trained health department investigator then interviews the infected person to determine the source and possible spread of the disease. Unless contacts are alerted to the possibility that they are infected, they may go undiagnosed and untreated for an indefinite period and may spread the disease. For example, the epidemiological process applied to 1 diagnosed case of infectious syphilis disclosed the involvement of 146 people in 8 States; 14 additional cases of syphilis were diagnosed among these 146 people.

Chains are broken by examining all contacts and treating them as needed. It is the policy of most health departments to treat exposed persons during the first examination, even though no evidence of infection is shown. This avoids later development of syphilis in cases where the disease is in an incubating stage at the time of the examination.

Since at least 1962 HEW has been aware that the majority of venereal cases are not reported to public health authorities despite laws in all States requiring that diagnosed cases be reported. In 1962 and 1968 HEW supported surveys conducted by the American Social Health Association, partly to determine the rate at which private physicians were reporting diagnosed cases of venereal disease.

The 1968 survey showed that private physicians treated about 80 percent of all venereal disease cases but reported only about 11 percent of them. The survey report concluded that this reporting rate represented only a modest improvement over that indicated by the 1962 survey, despite the fact that between the two surveys State health department representatives made more than 370,000 visits to private physicians to encourage them to promptly report each case.

A study sponsored by six (five State and one city) public health departments, carried out between the two HEW-sponsored surveys, attempted to investigate reasons for

nonreporting by physicians. This study showed that the two main obstacles to reporting appeared to be that physicians

--did not fully trust the confidentiality of health department records and

--did not understand the importance of reporting as the basis for tracing contacts.

Although no further comprehensive surveys of this type have been made, CDC foresees a continuing underreporting problem. In 1971 there were an estimated 2.2 million new cases of gonorrhea, but only 670,000 were reported.

Syphilis control

The epidemiologic process has been applied to the control of syphilis since the early 1950s. Its effectiveness is demonstrated by data in HEW's "Report of the Venereal Disease Branch, Fiscal Year 1970," which showed that 94 percent of all reported infectious syphilis persons were interviewed, resulting in 10,752 new cases being treated. HEW estimated that an additional 1,500 to 3,000 syphilis infections were prevented by treating infectious syphilis contacts whose tests were negative but who may have had the disease in its early stages.

The nine States in our review were using the epidemiological process to control syphilis. A CDC venereal disease program officer advised us that the process' potential as a control technique is limited because syphilis is significantly underreported by private physicians. Although CDC estimated that 80,000 new cases of infectious syphilis occurred nationally during fiscal year 1971, only about 23,000 cases were reported.

Gonorrhea control

Over the years, public health authorities have regarded gonorrhea as low on the scale of priorities for organized community action. It was held that, in the absence of an immunizing vaccine, effective control would not be possible until a dependable blood or skin test for detecting gonorrhea in females was developed.

According to an HEW official, until fiscal year 1972 the amount of Federal funds was inadequate to support both

syphilis and gonorrhea control programs. Syphilis control was supported because of its more severe aftereffects. Other reasons public health authorities gave for not applying control measures for gonorrhea include the:

--Short incubation period of the disease, which makes it almost impossible to reach exposed persons before the disease develops.

--Likelihood that infected males will seek treatment promptly because of the discomfort the disease causes.

--Sheer size of the gonorrhea problem.

--Lack of a simple, effective test for diagnosing gonorrhea.

The disease incidence has risen significantly since the mid-1960s, underscoring the need to establish a national program for gonorrhea control. The number of cases reported rose from 325,000 in fiscal year 1965 to 670,000 in 1971.

In fiscal year 1968, CDC undertook pilot studies to determine the relative benefits of the various epidemiological approaches to gonorrhea control. Information from these studies was to be used to plan and develop an extensive national program. During fiscal years 1968-71, CDC awarded 23 contracts to State and city health departments for pilot projects to identify the characteristics of gonorrhea in females, who do not know that they have the disease until the late stages (asymptomatic).

During a 3-year period, more than 700,000 females were screened for gonorrhea. From the results of the pilot studies, CDC concluded that a combination of mass screening of females when they receive pelvic examinations through certain public health care providers and epidemiology applied to males with gonorrhea provided the most cost effective method of identifying females with asymptomatic gonorrhea.

From the results of these pilot studies, CDC developed an extensive national gonorrhea control program which gives priority to screening programs for detecting and treating asymptomatic gonorrhea in females and interviewing all males reported to have gonorrhea to identify and treat their contacts. In fiscal year 1972, the Congress appropriated $16 million for the program. CDC allocated these funds to

the States and territories. The allocations ranged from a minumum grant of $32,000 for each of three territories to $1.5 million for California. Although the effectiveness of epidemiology has been demonstrated in controlling the spread of syphilis, it is more difficult to control gonorrhea by this method. A person who has contracted syphilis does not become infectious for about 3 weeks, thus public health personnel have some time to find and treat him after he has been identified as a contact. A person infected with gonorrhea can transmit the disease to another person almost immediately. Therefore, the timely application of epidemiology is more critical in controlling the spread of gonorrhea.

According to CDC, controlling gonorrhea by applying the emidemiological process to males is relatively more cost advantageous than screening females in most health care settings. CDC's analysis of the data developed under pilot projects for gonorrhea control showed that about 10 cases would have to be detected for every 100 women screened to be as cost advantageous as applying epidemiology to males. In each of the years of the study, only in certain health care settings did screening of females yield a rate of return as high as 10 percent.

The results of the pilot tests in fiscal year 1971, in terms of the percent of positive screening tests, follows.

Type of facility or provider	Number of women		Percent positive
	Screened	Positive	
Manpower training agencies	967	88	9.1
Jails	2,324	208	9.0
Community health centers	10,073	810	8.0
Private hospital outpatient clinics	24,403	1,411	5.8
Health department clinics	98,298	4,976	5.1
Public hospital outpatient clinics	33,578	1,506	4.5
Group health centers	2,520	89	3.5
Private family planning groups	29,920	774	2.6
Private physicians	46,758	988	2.1
Student health centers	2,593	53	2.0
Industrial screening	307	3	1.0
Others	251	8	3.2
Total for other than venereal disease clinics	251,992	10,914	4.3
Total for venereal disease clinics	53,937	13,059	24.2
Total	305,929	23,973	7.8

The rate of positive tests from screening in 1971 exceeded or approached the 10-percent break-even point only at venereal disease clinics, manpower training agencies, community health centers, and jails.

Initial results of screening under the gonorrhea control program implemented in fiscal year 1972 showed, for the quarter ended September 30, 1972, that screening of 571,230 women yielded 37,047 positive cases, a rate of 6.2 percent--down from the average of 7.8 percent in the 1971 pilot tests. Venereal disease clinics showed about a 20-percent positive rate; however, almost 85 percent of the 571,230 women screened were tested in other health care settings. The highest positive rate in these other health care settings was 9.3 percent among enrollees for manpower training programs. Thus, screening of women in all health care settings except venereal disease clinics were continuing to show positive rates lower than the break-even point determined by CDC.

In guidelines implementing the gonorrhea control projects, CDC required that priority be given to establishing extensive screening programs within a variety of health care settings. Some of the types of health care settings specifically noted as appropriate for screening are some of those shown to be substantially less cost advantageous than male epidemiology. The guidelines also specify that all reported male gonorrhea cases be interviewed to determine their contacts.

CONCLUSIONS

Because screening for gonorrhea is more cost advantageous than male epidemiology only in selected health care settings, the applications and results of both approaches for detecting asymptomatic gonorrhea should be closely monitored to note substantive changes from results obtained during the pilot projects. Changes in any of a number of factors, including the estimated time or cost to perform a certain function and the rate of return obtained, could indicate the need to change the emphasis of control approaches. The limited funds available for controlling gonorrhea make it vital that grantees maintain an appropriate mix between the two control approaches to realize the full cost advantage of each approach.

RECOMMENDATION

We recommend that the Secretary of HEW require that CDC periodically review the results being achieved under gonorrhea control projects to determine whether the projects are being carried out in the most cost advantageous way and, if not, require grantees to make changes in the projects.

AGENCY COMMENTS AND OUR EVALUATION

HEW (see app. I) concurred with our recommendation and stated that the CDC headquarters staff continuously monitors the results of gonorrhea control projects. HEW added that this activity permits evaluating all the methodologies being implemented and enables CDC to assist grantees in adjusting project methodologies to enhance the attainment of desired results in the most cost advantageous manner.

With regard to the establishment of the 10-percent break-even point (see p. 19), HEW stated:

> "The Department concurs in the importance of maintaining an appropriate mix of the various approaches. However, the accumulation of additional experience and more comprehensive data since the GAO draft report was developed leads us to question the validity of using a 'break-even point' as a firm and standard guide for program management. Even if a 'break-even point' were established for program management purposes, current data suggests that a level of 1-5 percent positive tests would be more appropriate than the 10 percent level cited by the * * * report."

We recognize that the standard used to measure the effectiveness of gonorrhea control efforts may need to be changed depending on the results and costs of such efforts. We believe, however, that because of the limited funds available for gonorrhea control, CDC should assure itself that grantees maintain an appropriate mix of control approaches. This is especially important in view of the varying results of screening of females in different health care settings.

CHAPTER 4

RESEARCH SUPPORT OF VENEREAL DISEASE CONTROL SYSTEM

Venereal disease research supported through CDC grants and, until recently, National Institutes of Health (NIH) grants, has primarily been directed toward describing the general characteristics and aftereffects of syphilis. Support had generally been lacking for research to develop a fast, effective blood test for gonorrhea and immunizing agents for syphilis and gonorrhea--high-priority needs of an effective control program.

Public health officials in several of the States in our review emphasized that identifying and treating asymptomatic gonorrhea is the key to controlling the disease. They stated that research should be directed toward developing better diagnostic methods and screening tests. In one State, the director of the communicable disease programs stated that a simple and fast diagnostic test for gonorrhea was a prerequisite for control.

Public health authorities have long recognized that the amount and type of U.S. research on venereal disease is inadequate compared with the extent of the problem. The 1962 report of the Surgeon General's task force on syphilis control stated:

> "It should be noted that the Task Force regarded its mission as recommending program practices which could be developed within the context of present knowledge and skills. It was not unmindful of the need for continuing research in all facets of the control activity, particularly immunology, therapy, and laboratory procedure." (Underscoring supplied.)

Ten years later, in its report, dated February 1, 1972, to the Assistant Secretary for Health and Scientific Affairs, HEW, the National Commission on Venereal Disease commented on inadequate venereal disease research. The reports principally recommended:

--Recruiting an enlarged nucleus of capable scientists, both inside and outside the Federal Government, to actively research venereal disease and establishing a central communication and coordination point.

--Pursuing studies for developing vaccines for syphilis and gonorrhea, recognizing that such vaccines would be valuable tools in venereal disease control, especially since few infectious diseases have been effectively controlled without suitable vaccines.

The Commission noted that only a handful of scientists in the United States--and the world--were engaged in microbiological and immunological research on spyhilis and gonorrhea and that specific efforts must be made to attract and maintain a larger nucleus of scientists having a long-term commitment to the study of venereal disease.

For the past several years "Today's VD Control Problem," published by the American Social Health Association, has cited the need for research to develop new approaches to control venereal disease. The Association's 1970, 1971, and 1972 reports stated that a particular need exists for research to develop

--a satisfactory vaccine against syphilis,

--an immunizing agent against gonorrhea,

--a mass screening test for gonorrhea, and

--the extent of the clinical complications of gonorrhea.

HEW supports basic research in venereal disease both in-house and through grant programs (extramural). CDC carries out in-house research and CDC and NIH sponsor extramural research.

Recent CDC in-house research has centered on developing a means of laboratory processing of the gonorrhea organism, a vaccine for syphilis, and a blood test for gonorrhea. Some key problems in the laboratory processing of the gonorrhea organism have been solved. However, a syphilis vaccine has not been developed and this area was not being researched at the time of our fieldwork in August 1972. In addition, none

of the five blood tests that CDC developed for gonorrhea have been refined for use in mass screening programs.

In January 1974 comments on our findings (see app. I), HEW stated that

> "The development of a rapid blood test for gonorrhea and effective immunizing agents for gonorrhea and syphilis has been and continues to be a persistent goal of [venereal disease] research. Although financial support for research in these areas has been sporadic and somewhat limited, significant progress has been made. At least five different types of gonorrhea blood tests are being developed, and further evaluation of their usefulness is in progress. In the case of both syphilis and gonorrhea, animal models are being studied to determine their immune responses. A possible vaccinating agent for gonorrhea is being studied in one model with encouraging results."

CDC did not maintain records showing the funds applied to in-house venereal disease research. Grant funds for extramural research during fiscal year 1970-72 amounted to $162,226, $70,596, and $204,655 respectively.

The National Institute of Allergy and Infectious Diseases within NIH is the principal institute of health supporting venereal disease research. Its extramural research support has substantially increased since fiscal year 1970, as shown in the following table. Research was primarily directed toward prevention of these diseases.

	Gonorrhea		Syphilis		Total	
Fiscal year	Number of projects	Amount	Number of projects	Amount	Number of projects	Amount
1970	1	$ 45,500	4	$106,300	5	$ 151,800
1971	3	93,600	4	128,900	7	222,500
1972	6	234,000	5	197,000	11	431,000
1973	15	586,300	10	403,400	25	989,700
Total		$959,400		$835,600		$1,795,000

In July 1972 all Institute grants for venereal disease research were placed under a special emphasis program, Biology of Venereal Disease. The program's goal is to narrow the gap in the fundamental knowledge of the basic biology and immunology of venereal diseases, and it has five areas of research.

1. Basic biology--study of the life processes of venereal disease organisms.

2. Cellular antigens--study of substances which stimulate the development of antibodies.

3. Host defense mechanisms--study of antibody development and activity.

4. Experimental models--study of organisms within the living body of animal systems and the test tube.

5. Drug resistance and susceptibility--study of antibiotic resistance and susceptibility and of a variety of agents which destroy venereal disease organisms or suppress their multiplication or growth.

All research grant proposals directly related to venereal disease must be for research in one or more of these five areas to be funded under the Institute's special emphasis program.

In enacting the Communicable Disease Control Amendments Act of 1972 on September 30, 1972, the Congress responded to the need identified by medical authorities for a successful vaccine and a fast, effective method of detecting gonorrhea in females by authorizing a grant program which includes research for preventing and controlling venereal disease. A total of $7.5 million for each of the 3 fiscal years 1973-75 was authorized to be appropriated for research, demonstration, and training projects. HEW did not, however, request appropriations under this authorization for fiscal years 1973 and 1974.

CONCLUSIONS

Because of the extent and seriousness of the venereal disease problem and the recognition of the past inadequacies

of venereal disease research, HEW should continue its support of venereal disease research activities. Emphasis should be on research areas holding the greatest promise for improving venereal disease control through the development of more effective detection methods for gonorrhea and immunization for gonorrhea and syphilis.

CHAPTER 5

CHANGES IN STATE TUBERCULOSIS CONTROL ACTIVITIES

Tuberculosis has been by far the most deadly communicable disease for many years. Although the number of cases and deaths has been declining for more than a decade, tuberculosis still accounts for about two-thirds of the deaths caused by all communicable diseases. In 1972, the latest period for which data was available, 32,882 new cases of active tuberculosis were reported in the United States, and an estimated 4,550 deaths were caused by tuberculosis.

Although HEW considers it to be a national problem, tuberculosis is concentrated in large cities and is more prevalent in males, certain age groups, and nonwhites.

Tuberculosis is generally considered a disease of the lungs, but it can infect other body organs and may cause death. The clinical aspects of tuberculosis are such that, unless detected by testing, the carrier may not know that he has the disease until it reaches advanced stages. The disease is generally acquired by inhaling the tuberculosis organism exhaled by carriers of infectious tuberculosis.

Before fiscal year 1970, Federal financial support for State tuberculosis control activities was provided through project grants distributed with consideration of the incidence of disease. Starting in fiscal year 1970, support has been provided primarily through formula grants for general health services. Formula grant funds are available for a broad range of public health services and are used according to priorities established by the States, which may or may not include tuberculosis control activities.

In view of continuing congressional concern that States would be unable to adequately fund tuberculosis control activities when project grants were terminated, we obtained information on the incidence of tuberculosis and on the financing of control activities in the nine States reviewed. We did not evaluate the effectiveness of the tuberculosis control programs in the nine States or how the transition to formula grants might impact on the effectiveness of their programs.

The following table shows the tuberculosis incidence in these States in 1972.

New active cases in 1972

State	Number	Cases per 100,000 population	Rank among 50 States (note a)
Colorado	245	10.4	17
Ohio	1,252	11.6	21
Massachusetts	734	12.7	23
Michigan	1,261	13.9	26
Georgia	897	19.0	38
Texas	2,422	20.8	42
Tennessee	929	23.0	46
South Carolina	651	24.4	47
Alabama	918	26.2	49
Total	9,309		
Total for 50 States and the District of Columbia	32,882	15.8	

[a]The higher the rank number, the higher the rate of new cases.

FEDERAL PROGRAMS

Federal support for State and local tuberculosis control activities can be provided under programs authorized by sections 314(d), 314(e), and 317 of the PHS Act. Under section 314(d), formula grants are awarded to States for general public health care services. These formula grant funds are distributed without considering the magnitude of specific health problems, and the States may use them for what they consider to be their highest health priorities. Thus, the funds may or may not be used for tuberculosis control. Federal grant funds specifically designated for tuberculosis control projects (secs. 314(e) and 317 funds) for fiscal years 1968-72 are shown below.

Fiscal year	Funds (millions)
1968	$16.0
1969	20.3
1970	3.3
1971	3.3
1972	[a]2.0

[a]This $2 million was appropriated in fiscal year 1971 but was designated by HEW for use in fiscal year 1972.

No funds were specifically appropriated for tuberculosis control activities in fiscal years 1973-74. The use of Federal project grant funds is limited to supporting the delivery of services to known and suspected tuberculosis cases on an outpatient basis. Tuberculosis casefinding under these project grants is limited to examining tuberculosis contacts and diagnosing tuberculosis suspects. Such restrictions do not apply to the use of section 314(d) formula grant funds.

Starting in fiscal year 1970, the mechanism to provide Federal funds to the States' tuberculosis control activities was changed from a project grant program to the formula grant program authorized by section 314(d) of the PHS Act. (See p. 9.) With the discontinuance of project grants, the appropriation available for the formula grant program was increased to offset the amount made available for the project grant program in fiscal year 1969.

Although the change in the funding mechanism did not decrease overall Federal funds to the States, the discontinuance of project grants distributed according to the incidence of disease and the use of the formula set forth in section 314(d) of the PHS Act resulted in substantially reducing Federal funds to some States. Also, formula grant funds are available for a broad range of public health services according to priorities established by the States.

Appendix VI shows the anticipated effect of these two factors on the amount of Federal funds expected to be provided by the States for tuberculosis control in fiscal year 1971, as reported to CDC by State health departments.

To assist some areas having significant tuberculosis problems that might receive less financial support, CDC

developed a program of transitional funding to lessen the impact of possible reductions. In fiscal years 1970 and 1971, $3.3 million was provided under section 314(e) to support transitional projects. Also, $2 million appropriated under the Communicable Disease Control Amendments of 1970 (sec. 317 of the PHS Act) was to be used to continue the phaseout of project grants for tuberculosis control activities in fiscal year 1972. The funds were used primarily to support outpatient clinics established under Federal tuberculosis control projects.

CONTROL PROGRAMS IN NINE STATES

For the nine States we reviewed, information CDC obtained from State health departments showed the following anticipated effect on tuberculosis control activities of the change in the Federal funding mechanism.

	Fiscal year 1969	Fiscal year 1971 (estimates)	
	Total project grant support (note a)	Increase in section 314(d) funds	314(d) funds to be used for tuberculosis control
Alabama	$ 849,678	$ 422,300	$250,000
Colorado	280,892	204,700	128,961
Georgia	1,036,918	493,900	493,900
Massachusetts	257,290	474,300	257,290
Michigan	803,200	835,800	535,400
Ohio	406,238	1,016,400	406,238
South Carolina	245,127	320,500	245,127
Tennessee	854,523	444,100	444,100
Texas	968,536	1,101,000	968,536

[a]Except for Colorado, amounts shown are the project grant awards during fiscal year 1969 under sec. 314(e) of the PHS Act to the States and, when applicable, local jurisdictions. The amount for Colorado consists of a $101,244 project grant to the city of Denver and a carryover of the $179,648 awarded during 1968 to the State.

To determine the extent to which tuberculosis control outpatient activities were actually funded in fiscal year 1971 (the year after transition) as compared with fiscal year 1969

(the year preceding transition), we obtained data on the amount of Federal and State funds allocated to or expended on such activities. We found, as shown on page 31, that total funds made available to support control activities on an outpatient basis had

--substantially decreased in three States (14, 26, and 42 percent),

--substantially increased in two States (19 and 43 percent), and

--decreased slightly in three States (4, 7, and 8 percent).

Massachusetts does not identify funds as supporting outpatient or inpatient services; therefore, we were not able to determine whether funds for outpatient services increased or decreased. However, Federal and State funds for outpatient and inpatient services combined increased substantially.

A comparison of the total Federal and State funds allocated or expended, including Federal funds granted to local jurisdictions for outpatient services for fiscal year 1969 (the year preceding transition) and fiscal year 1971 (the year after transition), follows.

	Fiscal year 1969 (note a)			Fiscal year 1971			Percent of total increase or decrease(-)
	Federal	State (note b)	Total	Federal	State (note b)	Total	
Alabama	$864,678	$ 200,000	$1,064,678	$318,440	$ 473,200	$ 791,640	-26
Colorado	229,224	93,345	322,569	-	[c]310,354	310,354	- 4
Georgia	757,413	177,382	934,795	$5,530	488,925	544,455	-42
Massachusetts	199,724	[d]2,859,772	3,059,496	-	[d]4,400,678	4,400,678	44
Michigan	524,220	361,061	885,281	200,400	612,282	812,682	- 8
Ohio	379,521	77,408	456,929	-	543,343	543,343	19
South Carolina	269,786	67,028	336,814	211,938	100,226	312,164	- 7
Tennessee	854,523	555,520	1,410,043	-	1,210,060	1,210,060	-14
Texas	859,929	2,192,937	3,052,866	232,949	4,118,234	4,351,183	43

[a]The amount of Federal funds the States allocated or spent in fiscal year 1969 will not necessarily agree with the amounts shown in the schedule on page 31 because the amounts on that schedule are approved 1969 project grants used by the States in fiscal years 1969 and 1970.

[b]Includes any sec. 314(d) formula grant funds allocated by the State for tuberculosis control activities.

[c]Includes undetermined amount for other chronic diseases.

[d]Includes funds for inpatient services.

As shown by the preceding schedule, the three States (Alabama, Georgia, and Tennessee) with substantially reduced total funds for tuberculosis control received less Federal funds because of the change in the Federal funding mechanism and chose not to offset the total loss from other funds. Also Alabama did not allocate the total increase in section 314(d) funds to tuberculosis control. Colorado also received less Federal funds but offset most of the loss.

The other four States, excluding Massachusetts, received increases in section 314(d) funds sufficient to offset the loss of project grant funds. Michigan and South Carolina did not use the increase in section 314(d) funds to offset the loss of project grants which slightly decreased the amount of funds allocated for tuberculosis control.

We also noted that States having substantial reductions in funding levels made changes in the level of services provided, including (1) combining clinical activities at one location and curtailing operating hours, (2) reducing the number of personnel, (3) discontinuing or reducing certain screening activities, and (4) discontinuing followup visits to persons who had completed treatment.

The following example indicates the situation we found in States which received substantially reduced funds. One State public health official told us that the elimination of project funds caused a general belt-tightening in his State's tuberculosis control efforts and contributed to changes in the level of facilities, staffing, and services. He attributed changes in his State's program to a combination of the change in the Federal funding mechanism and the State's adopting a number of CDC recommendations which curtailed ineffective approaches to tuberculosis detection and control. He cited as an example reducing the followup period from 5 years to 1 or 2 years for patients who have completed treatment, principally because their relapse rate is 1 percent or less from the second through the fifth year after treatment. Also cited were reduced routine mass-screening programs, which show low rates of return in relation to their cost.

Changes in tuberculosis control programs are illustrated by the following detailed information on three of the States reviewed. State-provided funds include amounts the State made available from the Federal formula grant program.

Tennessee

Total identifiable Federal and State funds provided for tuberculosis outpatient services for fiscal year 1969 (the year preceding transition) through 1972 were as follows.

Fiscal year	Funds provided by Federal	State	Total
1969	$854,523	$ 555,520	$1,410,043
1970	692,968	556,600	1,249,568
1971	-	1,210,060	1,210,060
1972	-	956,120	956,120

For fiscal years 1971 and 1972 the State did not allocate tuberculosis control funds (except for tuberculosis drugs beginning in fiscal year 1971) to the metropolitan areas of Nashville (Davidson County), Memphis (Shelby County), Knoxville (Knox County), and Chattanooga (Hamilton County). These four counties had 43 percent of the tuberculosis morbidity and 39 percent of the tuberculosis mortality in the State during the 5 years before 1970.

We visited three of these four counties to determine the effects of reduced State support on their tuberculosis control programs.

Davidson County

Davidson County had about $150,000 available for its program in fiscal year 1969, of which about $110,000 was a Federal project grant. When this grant was terminated and the State did not provide tuberculosis control funds, local funds were substantially increased.

By fiscal year 1972, local funds available for tuberculosis control had more than tripled the amount of local funds made available in 1969, bringing the total funds available to about $120,000, or 80 percent of the 1969 level.

Because of the decrease in program financial support, between 1969 and 1971 the number of nursing services provided was reduced by about 10 percent and tests and X-rays by about 30 percent and followup visits were discontinued--from 1,622 in 1969 to none in 1971.

Knox County

Knox County had about $158,000 available for tuberculosis control in fiscal year 1969, of which about $86,000 was from a Federal tuberculosis project grant. This grant was reduced to about $29,000 in 1970 and terminated in 1971. The State provided no control funds, and there has been little change in the amount of local funds provided. Local funds amounted to about $72,000 in fiscal year 1969 and about $76,000 in 1972. Consequently, the total funds available to control tuberculosis in 1972 were less than half the 1969 level.

Program personnel had been reduced by about 50 percent by the end of fiscal year 1972. However, most of the testing, treatment, and other control services provided under the project grant are still provided, but less frequently. Followup has been discontinued except for telephone followup when time is available.

Hamilton County

Hamilton County had about $123,000 available for the tuberculosis control program in fiscal year 1969, made up entirely of a Federal project grant. This grant was reduced to about $118,000 in 1970 and terminated in 1971. The State provided no control funds. A private organization has provided about $44,000, $101,000, and $92,000 for fiscal years 1970-72, respectively, for a county tuberculosis control program. Total funds available for tuberculosis control in fiscal year 1972 were about 75 percent of the 1969 level.

Program personnel was reduced from 22 to 12 from January 1970 through December 1971, including the loss of 7 of 10 nurses. Also, services have been reduced. For example, screening of school children has been limited to the first and tenth grades and the number of tests performed at schools decreased by about 50 percent between 1969 and 1971.

Throughout the rest of the State, the termination of Federal project grants has not had a significant impact on the total funds provided for tuberculosis control.

Texas

Total identifiable Federal and State funds for tuberculosis outpatient services for the 3 years ended August 31, 1971, were as follows.

State fiscal year ended August 31	Funds provided by Federal	State	Total
1969	$859,929	$2,192,937	$3,052,866
1970	264,735	3,400,822	3,665,557
1971	232,949	4,118,234	4,351,183

Since 1968 the number of tuberculosis clinics has increased from 39 to 100, with concomitant increases in services and staffing.

We visited Houston and San Antonio to determine what changes, if any, had occurred in their tuberculosis control programs due to the reduction in Federal project grant support. We found that the discontinuance of project grants had not adversely affected the level of resources available to the program.

In Houston, local and State funds increased as Federal project grants phased out. In 1969 local and State funds available for tuberculosis control totaled about $193,000. By 1971 this amount had increased to about $371,000 and the estimate for 1972 was about $381,000. During 1969-72, the number of tuberculosis clinics increased from 3 to 6; staffing increased 55 percent to 43 personnel and visits to clinics increased about 50 percent--from about 51,000 to about 76,000. Also, the use of contract physicians increased about one-third.

In San Antonio, State and local funds for tuberculosis control totaled about $60,000 more in 1971 than in 1969. This amount offsets the decrease in Federal funds of about $52,000 for the same period. The number of clinics remained at two--one State operated and one city operated. The number of staff at the city-operated clinic had not changed in recent years.

Georgia

Total identifiable Federal and State funds provided for tuberculosis outpatient services for fiscal years 1969-72 were as follows.

Fiscal year	Funds provided by Federal	State	Total
1969	$757,413	$177,382	$934,795
1970	314,473	247,504	561,977
1971	55,530	488,925	544,455
1972	39,950	477,368	517,318

The funds shown as provided by the State for fiscal years 1970-72 do not include costs for tuberculosis caseworkers who, along with public health caseworkers for other specific diseases, became general health investigators during fiscal year 1970. Consequently, there is no basis for attributing the cost of any part of their efforts to tuberculosis control activities. The difference in personnel costs budgeted for tuberculosis control activities in fiscal years 1969 and 1970, when tuberculosis caseworkers became general health investigators, amounted to about $362,000, which accounts for most of the difference in funding between 1969 and 1970.

A State public health official said that a number of changes had been made in the structure of the tuberculosis control program over the past several years. The elimination of project funds had caused a general belt-tightening in control efforts and contributed to changes in the level of facilities, staffing, or services. He attributed these changes to a combination of the change in the Federal funding mechanism and the State's adopting a number of CDC recommendations which curtailed ineffective approaches to tuberculosis detection and control. For example, the followup period on patients who have completed treatment has been reduced from 5 years to 1 or 2 years, principally because their relapse rate is 1 percent or less from the second through the fifth year after treatment. Also, routine mass-screening programs have been reduced because the rate of return in relation to cost has been low. Of 233,542 schoolchildren and school employees screened during school years 1969-71, 1,641 persons had new positive reactions to the tuberculosis tests, resulting in 30 new tuberculosis cases. This is a positive reaction rate of about 7/10th of 1 percent and a new tuberculosis case rate of about 1/100th of 1 percent of the number of persons screened.

Between 1969-72, the number of treatment clinics had not been reduced; however, the number of personnel in the State control program has been reduced by about 30 percent,

from 42 to 30. These personnel changes do not include contract physicians, general health investigators, or staff of local health departments involved in tuberculosis control.

CONCLUSION

The result of the change in the mechanism used to provide Federal funds for tuberculosis control activities varied among the States reviewed. Five of the nine States received sufficient funds from the change to the formula grant program to offset the loss of project grants. Information developed for four of these States showed that only two chose to use the increase in Federal formula grant funds to completely offset the loss of project grants. For the four States which received less Federal funds, only one chose to offset most of the reduction with other available funds. Consequently, six of eight States chose not to offset the total loss of Federal project grant funds with other available funds, including Federal formula grant funds provided under section 314(d) of the PHS Act.

Any impact on the incidence of tuberculosis resulting from the change of Federal support from project to formula grants may not be apparent for some time to come because tuberculosis can remain undetected for several years.

CHAPTER 6

SCOPE OF REVIEW

We made our review at CDC in Rockville, Maryland, and Atlanta, Georgia; NIH in Bethesda, Maryland; and nine State health departments and certain local health departments in those States. We reviewed legislation and examined records and files of efforts to control (1) polio, rubella, measles, diphtheria, and pertussis by immunization and (2) tuberculosis and venereal diseases, particularly gonorrhea, by locating and treating active cases.

The nine States we reviewed were Alabama, Colorado, Georgia, Massachusetts, Michigan, Ohio, South Carolina, Tennessee, and Texas, which had 1970 populations totaling more than 53 million, about 25 percent of the total U.S. population. These States accounted for 28 percent of the reported cases of the above communicable diseases in 1970 (the latest data available at the time of our fieldwork). We selected these States after considering the

--reported morbidity rates;

--representative populations, particularly of children up to 9 years of age (the primary target group for immunizations);

--the variety of methods used by States for procuring drugs and vaccines for communicable disease control programs; and

--the existing levels of public health services.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

JAN 31 1974

Mr. Willis L. Elmore
Assistant Director
Manpower and Welfare Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Elmore:

Thank you for the opportunity to review your draft report to the Congress, "Review of Selected Communicable Disease Control Efforts of the Center for Disease Control." Enclosed are a number of suggestions and comments you might want to consider in issuing the final report.

Sincerely yours,

John D. Young
Assistant Secretary, Comptroller

Enclosure

COMMENTS OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE ON GENERAL ACCOUNTING OFFICE DRAFT AUDIT REPORT TO THE CONGRESS ENTITLED, "REVIEW OF SELECTED COMMUNICABLE DISEASE CONTROL EFFORTS"

GAO Recommendation:

> We recommend that the Secretary of HEW require CDC to make greater use of the authority provided by Sections 314 and 317 of the Public Health Service Act by publicizing its willingness to increase the use of its centralized procurement system for vaccines.

Department Comments:

We concur. Present CDC vaccine contracts contain a clause which permits the States to make vaccine purchases with Federal funds under these contracts. This clause is not binding on the vaccine manufacturers; however, it is being honored by all manufacturers. Ten States are currently making purchases under these contracts. CDC will encourage official State health agencies to make use of this centralized procurement system for vaccines.

GAO Recommendation:

> We recommend that the Secretary of HEW require that CDC periodically review the results being achieved under gonorrhea control projects to determine whether grantees control efforts are being carried out in the most cost advantageous manner and, if not, require grantees to make changes in gonorrhea control projects.

Department Comments:

We concur. The headquarters staff of CDC continuously monitors the results being achieved through gonorrhea control projects. This activity permits the evaluation of all of the various methodologies being implemented and enables CDC to assist grantees in adjusting project methodologies to enhance the attainment of desired results in the most cost advantageous manner.

In addition to the above comments on the GAO recommendations, the Department offers the following for clarification:

a. GAO Comment:

> The rate of positive tests from screening in 1971 exceeded or approached the break-even point needed (10 percent) to make screening at least as cost advantageous as epidemiology applied to males at only

venereal disease clinics, manpower training agencies, community health centers, and jails...In view of the limited funds available for controlling gonorrhea, it is vital that grantees maintain an appropriate mix between the two control approaches in order to realize the full cost advantage of each approach.

Department Comments:

The Department concurs in the importance of maintaining an appropriate mix of the various approaches. However, the accumulation of additional experience and more comprehensive data since the GAO draft report was developed leads us to question the validity of using a "break-even point" as a firm and standard guide for program management. Even if a "break-even point" were established for program management purposes, current data suggest that a level of 1-5 percent positive tests would be more appropriate than the 10 percent level cited by the draft report.

b. GAO Comment:

The nature of the after effects of these diseases is such that their economic costs cannot be measured. However, HEW's "VD Fact Sheet - 1971" indicates that in 1969, the estimated annual cost of supporting patients in public institutions with mental illness and blindness caused by syphilis was more than $47.2 million.

Department Comments:

Since the GAO draft report was developed, limited data has become available on the economic cost of complications of gonorrhea in females. Based on an extrapolation of data compiled through a study done in Memphis-Shelby County, Tennessee, the estimated cost in 1972 of female complications of gonorrhea in the United States is $222,750,000. With the stipulation that such a generalization from one locality to the Nation as a whole is hazardous, this best available estimate of the economic cost of female complications of gonorrhea probably should be included in the report.

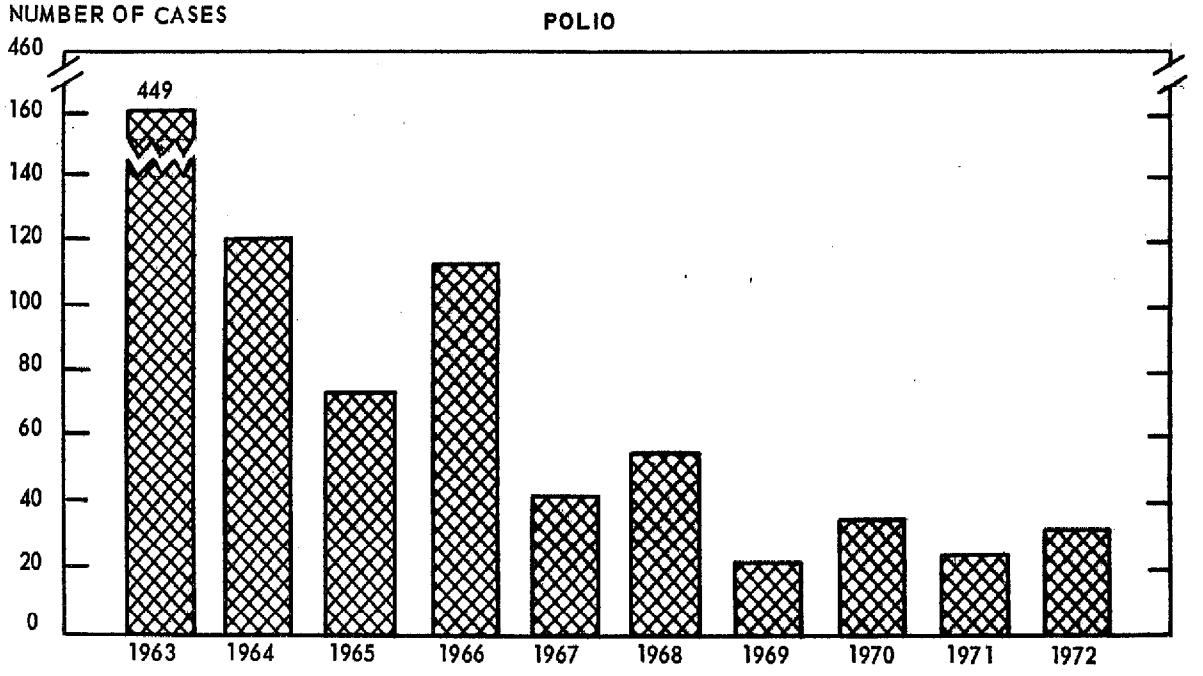
c. GAO Comments:

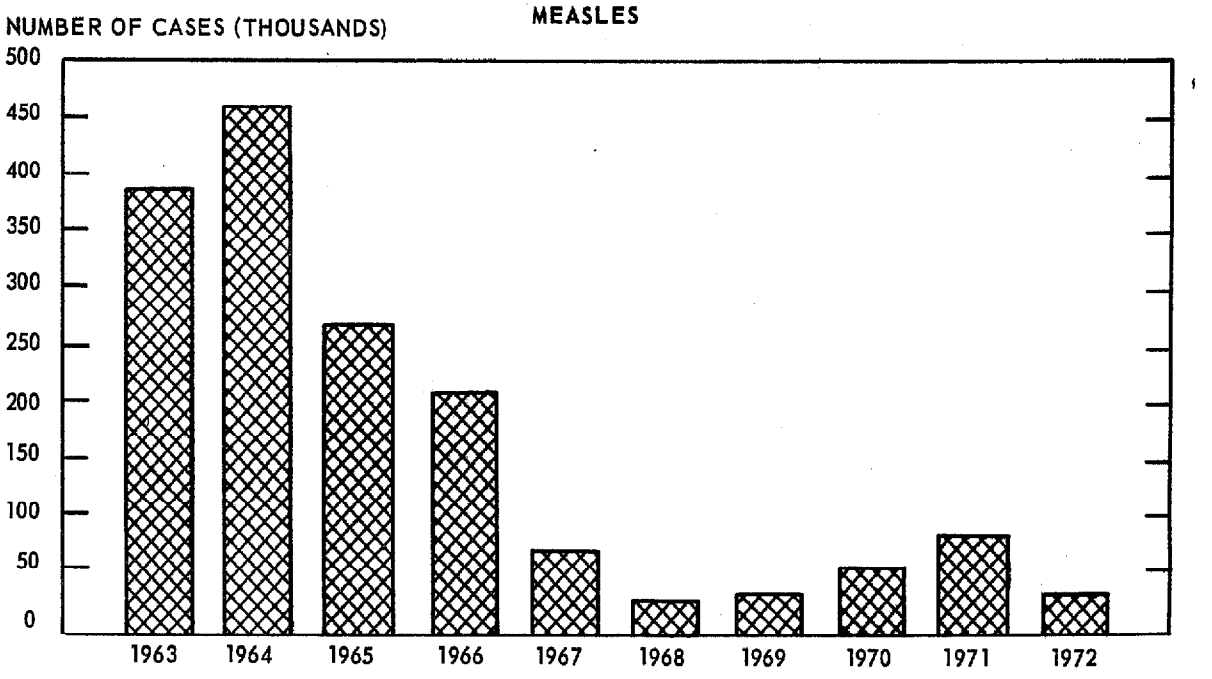
Support had generally been lacking for research aimed at the development of a fast, effective blood test for gonorrhea and immunizing agents for syphilis, and gonorrhea--high priority needs of an effective control program.

Department Comments:

The development of a rapid blood test for gonorrhea and effective immunizing agents for gonorrhea and syphilis has been and continues to be a persistent goal of VD research. Although financial support for research in these areas has been sporadic and somewhat limited, significant progress has been made. At least five different types of gonorrhea blood tests are being developed, and further evaluation of their usefulness is in progress. In the case of both syphilis and gonorrhea, animal models are being studied to determine their immune responses. A possible vaccinating agent for gonorrhea is being studied in one model with encouraging results.

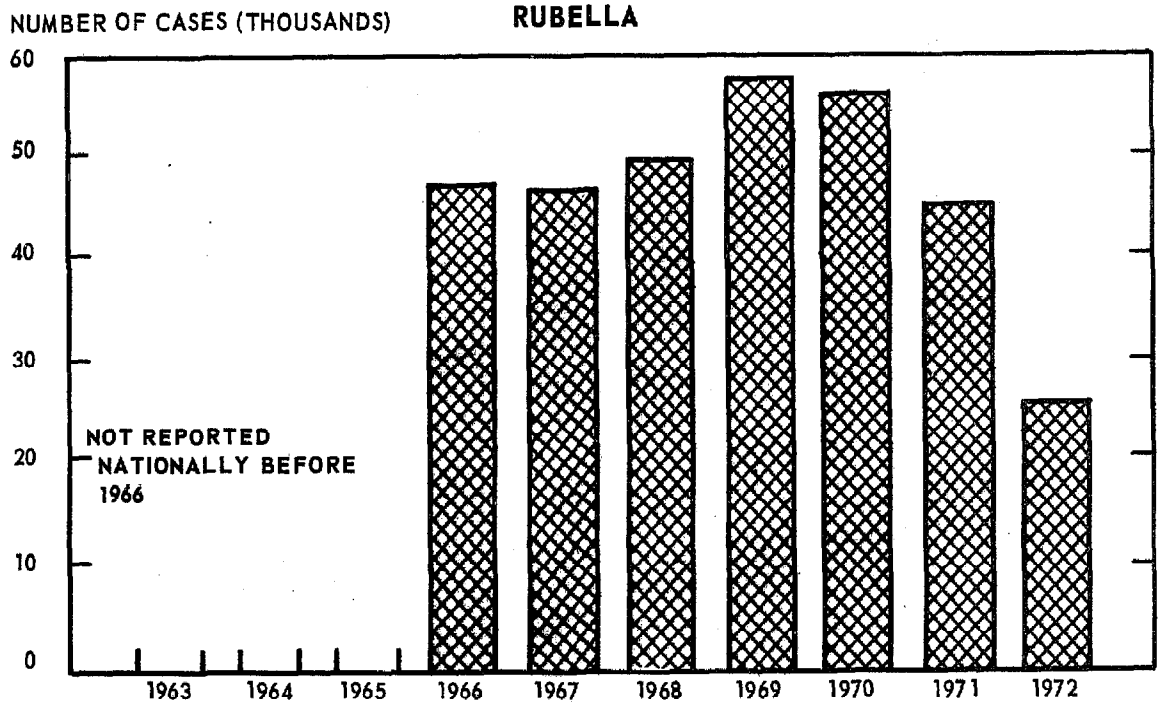
NUMBER OF REPORTED CASES OF SELECTED COMMUNICABLE DISEASES 1963 – 1972

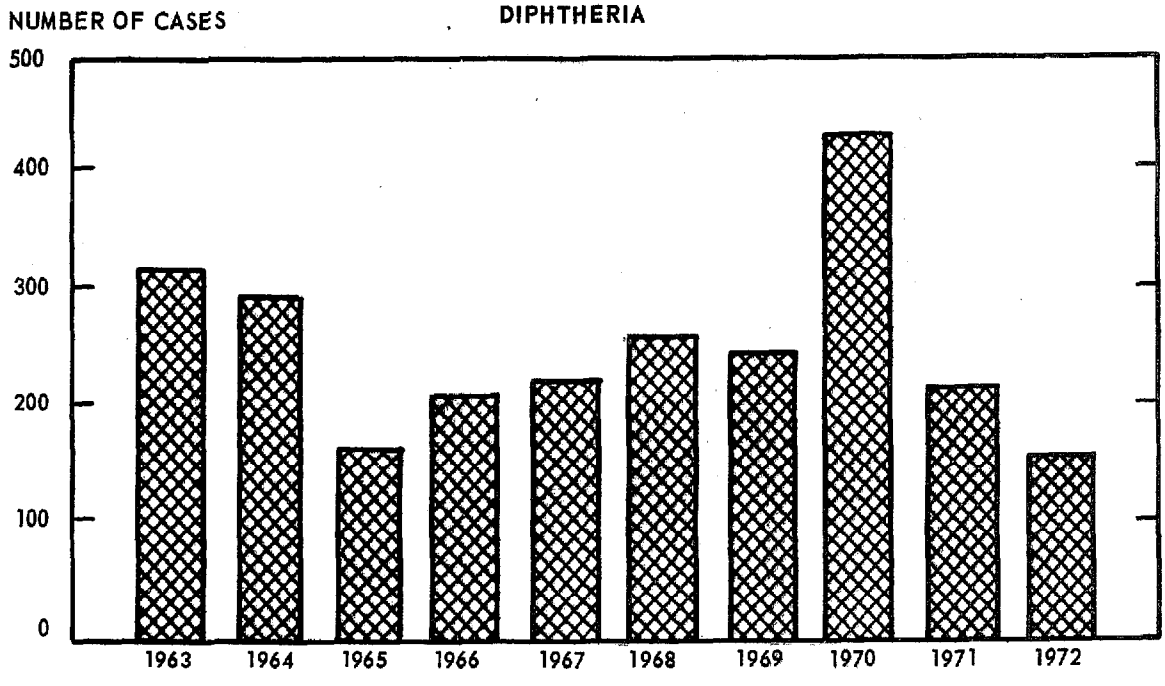




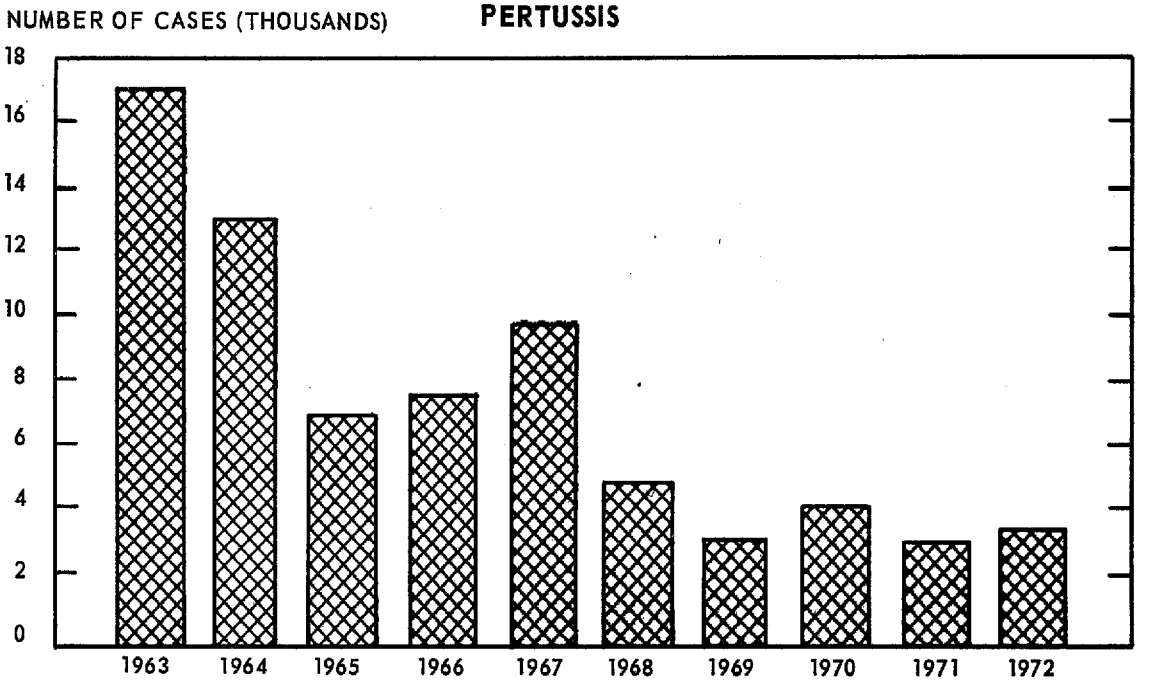
APPENDIX II

NUMBER OF REPORTED CASES OF SELECTED COMMUNICABLE DISEASES 1963 – 1972





NUMBER OF REPORTED CASES OF SELECTED COMMUNICABLE DISEASES 1963 – 1972



APPENDIX III

EXAMPLES OF EPIDEMICS OR OUTBREAKS

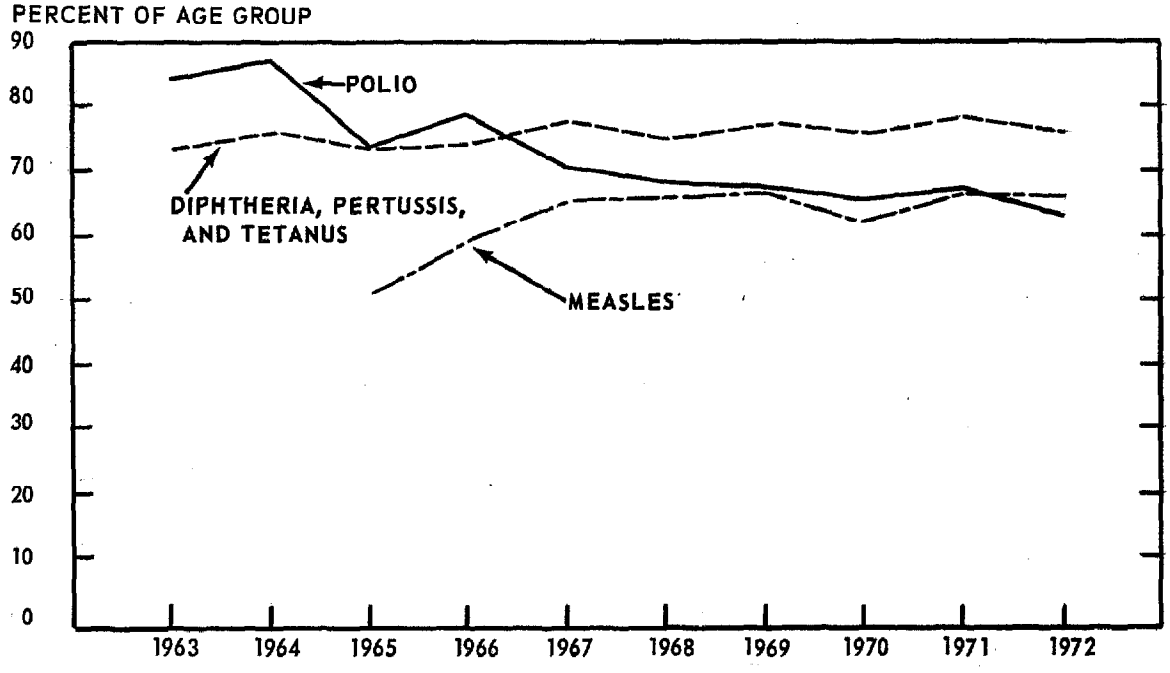
1. San Antonio, Texas, had a diphtheria epidemic in 1970. A total of 201 cases, including deaths of three non-immunized children, were reported.

2. Casper, Wyoming, had a rubella epidemic in 1971. A total of 1,039 cases were reported, nearly 900 among junior and senior high school students. Only 11 percent of the cases occurred in elementary schoolchildren, 83 percent of whom had been immunized during a mass program in 1970.

3. Gillette, Wyoming, had a rubella epidemic in 1971. A total of 125 cases were reported, 106 among junior and senior high school students. Only three cases involved elementary schoolchildren, 85 percent of whom had been immunized during a mass program in 1970.

4. Nine cases of polio were reported among students at a private school in Connecticut. All cases involved unvaccinated children.

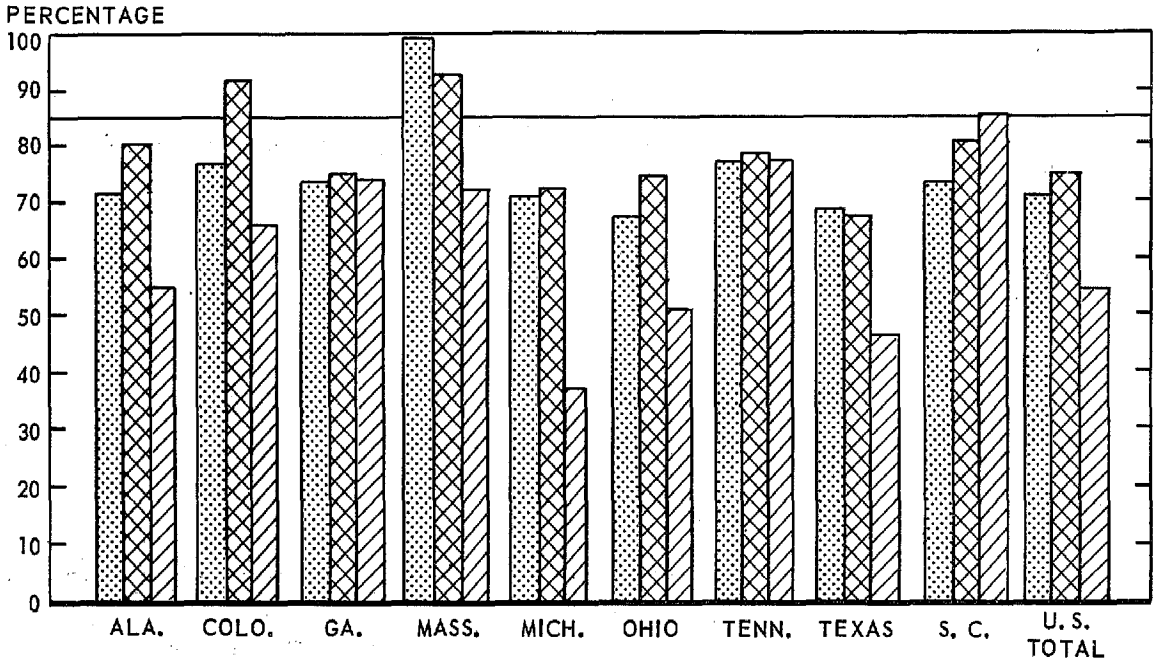
IMMUNIZATION LEVELS FOR AGE GROUP 1 TO 4 YEARS



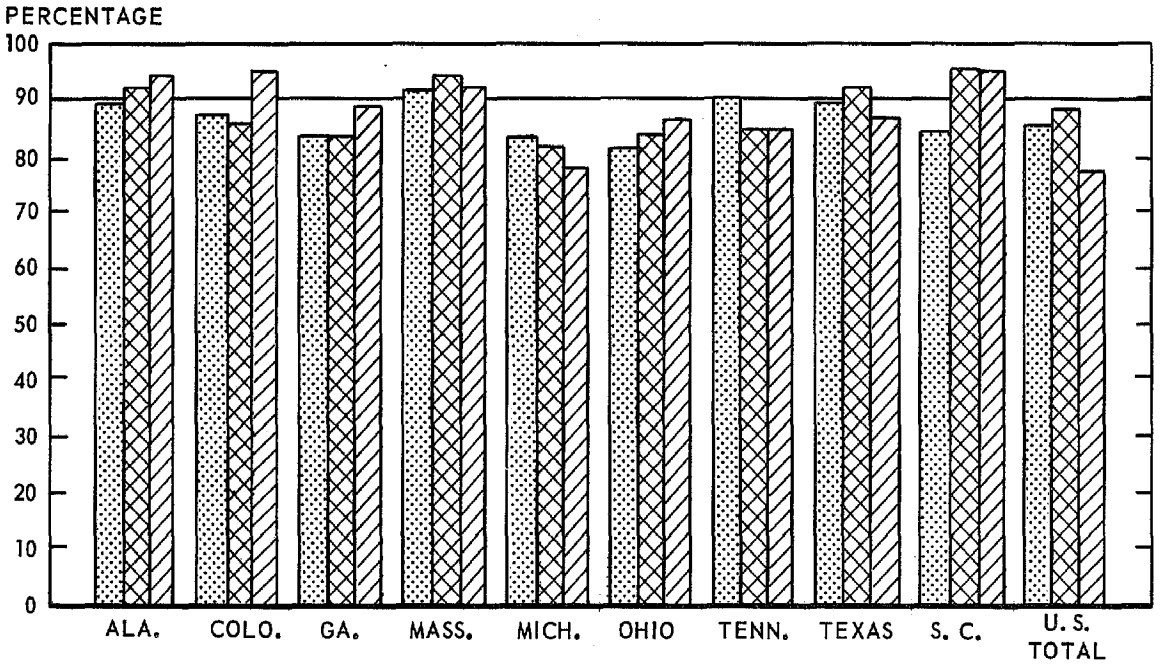
Note: The United States did not license a rubella vaccine until June 1969, so it is too early to show meaningful trends. As of 1972, 61 percent of the children 1 to 12 years of age had been vaccinated. In the 1 to 4 year age group, 57 percent had been vaccinated, compared with 67 percent of the 5 to 9 year age group.

ESTIMATED IMMUNIZATION LEVELS FOR SELECTED COMMUNICABLE DISEASES IN EACH STATE REVIEWED AS OF MAY 1972

AGE GROUP 1-4



AGE GROUP 5-9



CHANGES EXPECTED BY HEW

IN FINANCIAL SUPPORT FOR STATE

TUBERCULOSIS CONTROL ACTIVITIES

	Fiscal year 1969	Fiscal year 1971 (estimated)	
	Amount of support before transition	Increase in section 314(d) funds	314(d) funds to be used for tuberculosis control
Alabama	$ 849,678	$ 422,300	$ 250,000
Alaska	239,269	17,100	17,100
Arizona	328,284	166,100	166,100
Arkansas	302,000	250,500	200,000
California	1,682,819	1,685,100	841,409
Colorado	280,892	204,700	128,961
Connecticut	31,675	251,800	31,675
Delaware	105,000	53,100	53,100
District of Columbia	759,046	68,200	-
Florida	868,488	622,200	622,200
Georgia	1,036,918	493,900	493,900
Hawaii	103,398	78,200	-
Idaho	55,449	75,500	56,625
Illinois	355,748	959,800	355,748
Indiana	336,516	494,800	336,516
Iowa	65,745	263,800	65,745
Kansas	190,466	222,800	190,466
Kentucky	255,082	348,200	255,082
Louisiana	268,985	406,900	268,985
Maine	51,108	100,400	51,108
Maryland	514,659	349,900	349,900
Massachusetts	257,290	474,300	257,290
Michigan	803,200	835,800	535,400
Minnesota	179,922	352,100	179,922
Mississippi	471,095	287,000	287,000
Missouri	679,918	448,100	448,100
Montana	103,916	68,300	68,300
Nebraska	109,818	136,700	109,818
Nevada	174,493	48,600	48,600
New Hampshire	53,548	68,800	53,548
New Jersey	772,050	628,000	628,000
New Mexico	155,795	113,400	100,000
New York	1,699,793	1,496,200	1,496,200
North Carolina	648,764	568,500	568,500
North Dakota	56,693	64,600	56,693
Ohio	406,238	1,016,400	406,238
Oklahoma	176,378	259,500	176,378
Oregon	137,141	194,100	137,141
Pennsylvania	988,479	1,092,800	988,479
Rhode Island	116,391	83,300	83,300
South Carolina	245,127	320,500	245,127
South Dakota	77,238	63,900	63,900
Tennessee	854,523	444,100	444,100
Texas	968,536	1,101,000	968,536
Utah	167,051	111,400	79,094
Vermont	59,197	46,200	46,200
Virginia	367,858	462,800	367,858
Washington	145,290	318,700	-
West Virginia	298,765	197,300	197,300
Wisconsin	183,260	398,700	183,260
Wyoming	-	34,600	31,140
Guam	22,000	14,000	14,000
Puerto Rico	414,318	342,700	342,700
Trust Territory of the Pacific Islands	-	2,600	-
Virgin Islands	40,380	-	-
Total	$20,515,690	$19,630,300	$14,346,742

APPENDIX VII

PRINCIPAL OFFICIALS OF THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE RESPONSIBLE FOR ACTIVITIES DISCUSSED IN THIS REPORT

	Tenure of office	
	From	To
SECRETARY OF HEALTH, EDUCATION, AND WELFARE:		
Caspar W. Weinberger	Feb. 1973	Present
Frank C. Carlucci (acting)	Jan. 1973	Feb. 1973
Elliot L. Richardson	June 1970	Jan. 1973
Robert H. Finch	Jan. 1969	June 1970
Wilbur J. Cohen	Mar. 1968	Jan. 1969
ASSISTANT SECRETARY FOR HEALTH:		
Charles C. Edwards	Apr. 1973	Present
Richard L. Seggel (acting)	Jan. 1973	Apr. 1973
Merlin K. DuVal	July 1971	Dec. 1972
Roger O. Egeberg	July 1969	July 1971
Philip R. Lee	Nov. 1965	Feb. 1969
ADMINISTRATOR, HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION (note a):		
Harold O. Buzzell	May 1973	June 1973
David J. Sencer (acting)	Jan. 1973	May 1973
Vernon E. Wilson	May 1970	Dec. 1972
Joseph T. English	Jan. 1969	May 1970
Irving Lewis (acting)	Sept. 1968	Jan. 1969
Robert Q. Marston	Apr. 1968	Sept. 1968
DIRECTOR, CENTER FOR DISEASE CONTROL:		
David J. Sencer	Feb. 1966	Present

[a]Effective July 1, 1973, the Health Services and Mental Health Administration was abolished and the Public Health Service was reorganized into six health agencies under the direction and control of the Assistant Secretary for Health. Most Health Services and Mental Health Administration functions were transferred to four new agencies: the Center for Disease Control, the Health Resources Administration, the Health Services Administration, and the Alcohol, Drug Abuse, and Mental Health Administration.

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