Public Health Reports

Vol. 56 • NOVEMBER 21, 1941 • *No. 47*

DISTRIBUTION OF HEALTH SERVICES IN THE STRUCTURE OF STATE GOVERNMENT *

CHAPTER II. COMMUNICABLE DISEASE CONTROL BY STATE AGENCIES

By JOSEPH W. MOUNTIN, *Assistant Surgeon General*, and EVELYN FLOOK, *United States Public Health Service*

"Distribution of Health Services in the Structure of State Government" is the subject of a study recently made by the United States Public Health Service in response to a request by the State and Territorial Health Authorities for a current revision of Public Health Bulletin No. 184. Results of this study are being published serially in the PUBLIC HEALTH REPORTS. The initial article * presented an over-all picture of State organization for the promotion and conservation of human health and listed a number of specific activities which would be accorded separate treatment in successive chapters. The present discussion is based upon the aggregate effort of official State agencies for the control of communicable disease.

In a study devoted to health activities of the various agencies of State government, it is only fitting that provisions for the control of the communicable diseases should receive first consideration. Notwithstanding the shift in emphasis whereby more and more attention is being given to improvement of the personal health of every citizen, the traditional public health services such as community sanitation, regulation of water and milk supplies, and the control of transmissible diseases still constitute basic responsibilities of health departments. It is upon the results of these older activities which are more closely identified with the health of the community as a whole that a foundation for the more recently included services is laid. Control of transmissible diseases is equally as important today as in the past; it is still the primary function of a health department and, as such, should have precedence over all others. The chief difference in its relation to other types of health work is that in former years it was one of a few health interests; today, it is one of many.

Because of the magnitude of the programs and the special techniques involved, State provisions for the control of tuberculosis and the

* From the States Relations Division. This is the second chapter of the third edition of Public Health Bulletin No. 184. The previous chapter is:

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government. Chapter I. The composite pattern of State health services. Pub. Health Rep., 56:1673 (August 22, 1941).

Succeeding chapters will be published in subsequent issues of the PUBLIC HEALTH REPORTS.

422231°—41——1

venereal diseases will be analyzed separately in later articles, while pneumonia control activities at the State level will be covered under the subject of general medical care. Activities for the control of diseases commonly classed as the general communicable illnesses such as scarlet, typhoid, Rocky Mountain spotted, and undulant fevers, diphtheria, smallpox, measles, chickenpox, influenza, whooping cough, poliomyelitis, dysentery, malaria, hookworm, and plague—in fact, all transmissible diseases except the three previously mentioned—will be described herewith. All comments pertain, of course, only to the work of State agencies. Inquiry was not extended to the local health jurisdictions; consequently, the absence of a particular service in the State scheme does not necessarily mean that such service is unavailable; it may, or may not, be provided through other agencies. Services rendered by the district offices of a State agency are included since these district units represent only a decentralization of the main staff. Complete programs of the State oganizations are considered, regardless of the source of the funds (chiefly State appropriations and Federal grants) which support them. No evaluation of programs is attempted as this study is purely descriptive in its purposes.

VARIATION IN PROCEDURES FOR COMMUNICABLE DISEASE CONTROL

Activities for the control of communicable disease to a large extent are concentrated within the health department. In somewhat less than half of the 53 jurisdictions (the 48 States, District of Columbia, Territories of Alaska, Hawaii, and Puerto Rico, and the Virgin Islands making up the jurisdictions), the health department is the only State or Territorial agency concerned with the communicable disease situation. This is not surprising, inasmuch as reduction in the number and severity of epidemics constituted the original purpose for establishing most of these health departments. What is more surprising, perhaps, is the fact that, for the country as a whole, eight other agencies of State [1] government participate in some way in communicable disease control. Within an individual State, the maximum number of agencies represented in the complete State communicable disease plan is four, an arrangement occurring but twice. Three-agency programs operate in 9 States and two-agency programs in 18.

Departments of welfare, agriculture, and education; special commissions such as those concerned with domestic animals and dairy and food products; independent State hospitals and laboratories; State universities and colleges; and boards of entomology are governmental units which in some way strive to lower the incidence of communicable illnesses. The States [1] in which the several agencies function are recorded in table 1. The State department of health, of

[1] The term "State" as used in the discussion which follows includes the States, the Territories, the District of Columbia, and the Virgin Islands.

course, operates in every jurisdiction. In 15 States the department of education has specifically defined responsibilities; in 8, the State university participates; and in 6, the department of welfare contributes to some phase of the total State plan for communicable disease control. Participation by State agencies of other types occurs less frequently.

TABLE 1.—*Official State agencies participating in the communicable disease programs of each State and Territory, the District of Columbia, and the Virgin Islands* *

State or Territory	Department of State government								
	Health	Welfare, social security, or public assistance	Agriculture	Education	Special commissions [a]	Independent State hospital or laboratory	State university or college	State board of entomology	Other
Alabama	X			X					
Arizona	X					X			
Arkansas	X						X		
California	X								
Colorado	X						X		
Connecticut	X				X				
Delaware	X	X		X					
District of Columbia	X			X					X
Florida	X		X	X					
Georgia	X								
Idaho [b]	X	X							
Illinois	X								
Indiana	X	X		X			X		
Iowa	X						X	X	
Kansas	X								
Kentucky	X								
Louisiana	X			X		X			
Maine [b]	X								
Maryland	X			X					
Massachusetts	X		X						
Michigan	X								
Minnesota	X						X		
Mississippi	X								
Missouri	X								
Montana	X							X	
Nebraska	X								
Nevada	X								
New Hampshire	X								
New Jersey	X								X
New Mexico	X								
New York	X			X					
North Carolina	X								
North Dakota	X								
Ohio	X						X		
Oklahoma	X								
Oregon	X								
Pennsylvania	X								
Rhode Island	X	X		X					
South Carolina	X								
South Dakota	X								
Tennessee	X			X					
Texas	X			X					
Utah	X			X					
Vermont	X								
Virginia	X		X	X			X		
Washington	X	X							
West Virginia	X	X	X						
Wisconsin	X			X			X		
Wyoming	X								
Alaska	X								
Hawaii	X								
Puerto Rico	X			X					X
Virgin Islands	X								X

* Any differences between information presented in this table and corresponding entries in table 1, ch. I, of this series are the result of combining several activities originally shown separately, or of further refinement of the data since publication of the initial article.

[a] Dairy and food commission; domestic animals commission.

[b] The department of health is really a division (Idaho) and bureau (Maine) of public health, subordinate to the department of welfare (Idaho) and the department of health and welfare (Maine).

That State communicable disease control for the entire country is in the hands of nine different types of official agencies is an interesting finding, but the record of distribution of service would not be complete without some statement as to the manner in which the several agencies operate. Generally speaking, a State governmental agency may be said to function in one or a combination of the following methods: It has regulatory authority; it does promotional and educational work; it advises and supervises subsidiary local units; it gives financial aid to local units; or it operates a direct service program. There is no common pattern of organization. The total State effort may include any one or any combination of the forms of service listed. Where several agencies participate, there may be clearly defined division of responsibility. On the other hand, two or three different agencies may perform one certain branch of service, while other aspects are entirely ignored or adjudged as being beyond the realm of State jurisdiction. Table 2 is constructed to show variation among the several States in their measures for communicable disease control and in the agency charged with each specific service.

TABLE 2.—*Department of State government* responsible for specific activities** designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*

Activity	State or Territory							
	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1[b]	1	1	1[b]	1[b]	1	1	9
Promotes local programs of control	1	1	1	1	1	1	1	------
Conducts educational programs in communicable disease control	1, 4	1	1	1	1	1	1, 4	1, 4
Supervises and provides consultation service to local organizations	1	1	1	1	1	1	1	------
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	1[c]	1[c]	1[c]	1[c]	1[c]	1[c]	1[c]	------
Operates a direct service program:								
Collects and analyzes reports of communicable diseases	1	1	1	1	1	1	1	1
Collects reports of all immunizations performed—								
By local health units	1	1	1	------	1	------	1	------
By private physicians	------	------	------	------	1[c]	------	------	------
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	1[c]	1[c]	------	1	------	------	1	------
Performs immunizations—								
Routinely	------	------	------	1	------	------	1	1
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Furnishes free biologicals and drugs for immunization or treatment—								
Smallpox vaccine	------	1	1	------	1	1	1	1[c]
Typhoid vaccine	1	1	1	1	1[c]	1	1	1[c]
Rabies vaccine	1	------	1	------	------	------	1[c]	------
Whooping cough vaccine	------	1	------	------	------	------	------	------
Toxin for Schick test	1	------	1	------	1	1	1	------
Toxoid for diphtheria immunization	1	1	1	------	1	1	1	1[c]
Diphtheria antitoxin	1[c]	------	1	------	1	1	1	1[c]
Tetanus antitoxin	------	------	1	------	------	1	------	------
Scarlet fever antitoxin	------	------	------	------	------	1	------	------
Convalescent serums	------	------	------	------	------	------	------	------
Quinine	1	------	------	------	------	------	------	------
Carbon tetrachloride	1	------	------	------	------	------	------	------
Tetrachlorethylene	------	------	------	------	------	------	------	------
Silver nitrate	1	------	1	1	1	1	1	1
Other	1[j]	------	------	------	------	1[k]	1[k, l]	------
Supplies clinical diagnostic service to local health officers	1	1	1	1	1	1	1	------
Provides diagnostic laboratory service to private physicians and local health officers	1	6	1	1	1	1	1	1
Does epidemiological work in the field—								
Routinely	------	------	------	1	------	1[c]	1[c]	1
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Hospitalizes communicable disease patients	------	------	7	------	7	------	------	1
Provides for care or treatment of typhoid carriers	------	------	------	------	------	1	------	------
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	1	1	1	------	1	1	------	1
Makes studies of hookworm infestation	1	------	------	------	------	------	------	------
Makes studies to determine prevalence and distribution of malaria—								
Blood smears	1	------	1	------	------	------	------	------
Splenometric surveys	------	------	------	------	------	------	------	------
Investigates suspected anopheline breeding areas	1	------	1	1	------	------	------	9
Participates in drainage and/or larvicidal projects for malaria control	1	------	------	------	------	------	------	9
Exchanges with other State agencies information regarding diseases with animal reservoirs—								
Routinely	------	------	------	1	1[c]	1, 5	1	1
Upon occasion only	1	1	------	------	------	------	------	------
Renders additional service not covered in this classification	1	1	------	1	------	------	2	------

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific activities designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*—Continued

Activity	State or Territory							
	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1	1[b]	1, 2	1[b]	1	1	1	1
Promotes local programs of control	1	1	1	1	1, 2	1	1	1
Conducts educational programs in communicable disease control	1, 4	1	1	1	1, 2, 4	1	1	1
Supervises and provides consultation service to local organizations	1	1	1	1[d]	1, 2	1	1	1
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	1[e]	1[e]	1[e]	1[e]	1[e]	1[e]	1[e]	1[e]
Operates a direct service program:								
Collects and analyzes reports of communicable diseases	1[f]	1	1	1	1	1	1	1
Collects reports of all immunizations performed—								
By local health units	1	1	1	------	1	1	1	1
By private physicians	------	------	------	------	------	------	------	------
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	------	------	1	1[b]	------	1	------	1
Performs immunizations—								
Routinely	------	------	------	------	------	1	------	------
Upon request and/or in emergencies	1	1	1	1	1	1[e]	1	1
Furnishes free biologicals and drugs for immunization or treatment—								
Smallpox vaccine	1	1[i]	1	1	1[e]	1	1	1
Typhoid vaccine	1	1	1	1	1[e]	1	1	1
Rabies vaccine	1[e]	1	1	1	1	------	------	------
Whooping cough vaccine	------	------	1	------	------	------	------	------
Toxin for Schick test	1	1	1	1	------	1	------	1
Toxoid for diphtheria immunization	1	1[e]	1	1	1[e]	1	1	1
Diphtheria antitoxin	1[e]	1	1	1	1[e]	1	------	------
Tetanus antitoxin	------	------	------	------	------	------	------	------
Scarlet fever antitoxin	------	------	------	------	------	------	------	------
Convalescent serums	------	------	------	------	------	------	1	------
Quinine	------	------	------	------	------	------	------	------
Carbon tetrachloride	------	1	------	------	------	------	------	------
Tetrachlorethylene	1	1	------	------	------	------	------	------
Silver nitrate	1	1	------	1	1	1	1	1
Other	1[m]	------	1[i]	------	------	------	------	------
Supplies clinical diagnostic service to local health officers	1	1	1	1	1	1	1	1
Provides diagnostic laboratory service to private physicians and local health officers	1	1	1	1	1	1	1	1
Does epidemiological work in the field—								
Routinely	------	1	------	1	1	------	1	1
Upon request and/or in emergencies	------	1	1	1	1	1[e]	1	1
Hospitalizes communicable disease patients	------	------	------	------	2, 7	7	------	------
Provides for care or treatment of typhoid carriers	------	------	------	------	------	------	------	------
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	------	1	------	1	1	1	1	1
Makes studies of hookworm infestation	1	1	------	------	------	------	------	------
Makes studies to determine prevalence and distribution of malaria—								
Blood smears	1	1	------	------	------	------	------	------
Splenometric surveys	1	1	------	------	------	------	------	------
Investigates suspected anopheline breeding areas	1	1	1	1	1	1, 8	------	------
Participates in drainage and/or larvicidal projects for malaria control	1	1	------	1	------	------	------	------
Exchanges with other State agencies information regarding diseases with animal reservoirs—								
Routinely	1, 3	1	1	1	1	1	------	1
Upon occasion only	------	------	------	------	------	------	1	------
Renders additional service not covered in this classification	1	1	------	1	------	------	------	------

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific activities designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*—Continued

Activity	State or Territory							
	Louisiana	Maine [a]	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1[b]	1	1,4	1	1	1[b]	1[b]	1[b]
Promotes local programs of control	1	1	1	1	1	1	1	1
Conducts educational programs in communicable disease control	1,4	1	1,4	1	1	1	1	1
Supervises and provides consultation service to local organizations	1	1	1	1	1	1	1	1
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	1[c]	------	1[c]	1[c]	1[c]	1[c]	1[c]	1[c]
Operates a direct service program:								
Collects and analyzes reports of communicable diseases	1	1	1	1	1	1	1	-
Collects reports of all immunizations performed—								
By local health units	1	------	1	1[c]	1	1	1	1
By private physicians	------	------	------	------	------	1[g]	------	1[g]
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	1[c]	------	------	1[c]	------	1	------	1
Performs immunizations—								
Routinely	------	1	1	------	1[h]	------	------	------
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Furnishes free biologicals and drugs for immunization or treatment—								
Smallpox vaccine	1	------	1	1	1	1[c]	1	1
Typhoid vaccine	1	1	1	1	1	1	1	1
Rabies vaccine	------	1[c]	1	------	1	------	------	------
Whooping cough vaccine	------	------	------	------	1	------	------	------
Toxin for Schick test	1	------	1	1	1	1	------	1
Toxoid for diphtheria immunization	1	------	1	1	1	1	1	1
Diphtheria antitoxin	------	------	1	1	1	1	------	------
Tetanus antitoxin	------	------	1	------	1	------	------	------
Scarlet fever antitoxin	------	------	1[c]	1	1	------	------	------
Convalescent serums	------	------	------	------	------	------	------	------
Quinine	------	------	------	------	------	------	------	------
Carbon tetrachloride	------	------	------	------	------	------	------	------
Tetrachlorethylene	------	------	------	------	------	------	1	------
Silver nitrate	1	1	1	1	1	1	1	1
Other	------	------	------	1[k]	1[k,l]	1[k]	------	------
Supplies clinical diagnostic service to local health officers	1	1	1	1	1	1	1	1
Provides diagnostic laboratory service to private physicians and local health officers	1	1	1	1	1	1	1	1
Does epidemiological work in the field—								
Routinely	------	1	1	1	------	1	------	------
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Hospitalizes communicable disease patients	6	------	------	------	------	------	------	------
Provides for care or treatment of typhoid carriers	------	1	1	1	1	1	------	------
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	------	------	1	------	------	1	1	1
Makes studies of hookworm infestation	------	------	------	------	------	------	------	------
Makes studies to determine prevalence and distribution of malaria—								
Blood smears	------	------	------	------	------	------	1	------
Splenometric surveys	------	------	------	------	------	------	------	------
Investigates suspected anopheline breeding areas	1	------	------	------	------	1,7	1	1
Participates in drainage and/or larvicidal projects for malaria control	1	------	------	------	------	------	1	------
Exchanges with other State agencies information regarding diseases with animal reservoirs—								
Routinely	------	1	1	1,3	1	1	------	1
Upon occasion only	------	------	------	------	------	------	1	------
Renders additional service not covered in this classification	1	------	------	1	------	1	------	------

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific activities designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*—Continued

Activity	State or Territory							
	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1[b]	1[b]	1	1	1[b]	1	1,4	1
Promotes local programs of control	1	1	1	1	1	1	1	1
Conducts educational programs in communicable disease control	1	1	1	1	1	1	1	1
Supervises and provides consultation service to local organizations	1	1[d]	1[d]	1	1[d]	1	1	1
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	1[e]	------	------	1[e]	1[e]	1[e]	1[e]	1[e]
Operates a direct service program:								
Collects and analyzes reports of communicable diseases	1	1[f]	1	1[f]	1	1[f]	1	1
Collects reports of all immunizations performed—								
By local health units	1	------	1	------	1[g]	1	1[e]	1
By private physicians	------	------	------	------	1[g]	------	1[e]	------
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	------	------	------	------	1	1[e]	1	------
Performs immunizations—								
Routinely	------	------	1	1	------	------	1	------
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Furnishes free biologicals and drugs for immunization or treatment—								
Smallpox vaccine	1	------	------	1[e]	1[e]	------	------	1
Typhoid vaccine	1	------	1[e]	1[e]	------	------	1	1
Rabies vaccine	1	------	------	------	------	------	------	1[e]
Whooping cough vaccine	------	------	------	------	------	------	1	1
Toxin for Schick test	1	------	------	1	------	------	1	1
Toxoid for diphtheria immunization	1	------	------	1	1[e]	------	1	------
Diphtheria antitoxin	------	------	1	1	------	------	1	------
Tetanus antitoxin	------	------	------	------	------	------	1	1
Scarlet fever antitoxin	------	------	------	------	------	------	1	------
Convalescent serums	------	------	------	------	------	------	------	------
Quinine	------	------	------	------	------	------	------	------
Carbon tetrachloride	------	------	------	------	------	------	------	------
Tetrachlorethylene	------	------	------	------	------	------	------	------
Silver nitrate	1	------	1	1	1	1	------	1
Other	1[i]	------	------	------	------	------	------	------
Supplies clinical diagnostic service to local health officers	1	1	1	1	1	1	1	1
Provides diagnostic laboratory service to private physicians and local health officers	1	1	1	1	1	1	1	1
Does epidemiological work in the field—								
Routinely	------	------	------	1[e]	1	------	1	------
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Hospitalizes communicable disease patients	------	------	------	------	------	------	------	------
Provides for care or treatment of typhoid carriers	------	------	------	------	------	------	1	------
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	------	------	------	1	1	1	------	1
Makes studies of hookworm infestation	------	------	------	------	------	------	------	------
Makes studies to determine prevalence and distribution of malaria—								
Blood smears	------	------	------	------	------	1	------	1
Splenometric surveys	------	------	------	------	9	1	------	1
Investigates suspected anopheline breeding areas	------	------	------	------	1	1	------	1
Participates in drainage and/or larvicidal projects for malaria control	------	------	------	------	------	------	------	------
Exchanges with other State agencies information regarding diseases with animal reservoirs—								
Routinely	1	------	1	------	------	------	1	------
Upon occasion only	------	1	------	1	1	1	------	1
Renders additional service not covered in this classification	1,8	------	------	------	------	------	------	------

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific activities designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*—Continued

Activity	State or Territory							
	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1	1[b], 7	1[b]	1	1	1[b], 4[c]	1	1[b]
Promotes local programs of control	1	1	1	1	------	1	1	1
Conducts educational programs in communicable disease control	1	1	1	1	1	1	1	1
Supervises and provides consultation service to local organizations	1	1	1	1	1	1	1	1
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	1[c]	1[c]	1[c]	1[c]	------	------	1[c]	1[c]
Operates a direct service program:								
Collects and analyzes reports of communicable diseases	1	1	1[f]	1	1	1	1[f]	1
Collects reports of all immunizations performed—								
By local health units	1	1	1	1	------	------	1	1
By private physicians	1	------	------	------	------	------	------	------
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	1	------	------	1	1	1[c]	1	------
Performs immunizations—								
Routinely	------	------	------	------	1	1	------	------
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Furnishes free biologicals and drugs for immunization or treatment—								
Smallpox vaccine	1	------	1	1	1	------	1	1
Typhoid vaccine	1	1	1	1	1[c]	1	1[c]	1
Rabies vaccine	1	------	1[c]	------	------	------	1	------
Whooping cough vaccine	------	------	1[c]	------	------	1	------	1[c]
Toxin for Schick test	1	------	1	1	1	------	------	1
Toxoid for diphtheria immunization	1	1[c]	1	1	1	------	1	1
Diphtheria antitoxin	1[c]	------	1[c]	1	1	1	1	1
Tetanus antitoxin	------	------	------	------	1[c]	1	------	1
Scarlet fever antitoxin	------	------	------	------	------	------	------	------
Convalescent serums	------	------	------	------	------	------	------	------
Quinine	------	------	------	------	------	------	------	------
Carbon tetrachloride	------	------	------	------	------	------	------	------
Tetrachlorethylene	------	------	------	------	------	------	------	------
Silver nitrate	1	1	1	------	1	1	------	1
Other	------	------	------	------	------	------	------	1[l], [n]
Supplies clinical diagnostic service to local health officers	1	------	1	1	1	1	1	------
Provides diagnostic laboratory service to private physicians and local health officers	1	1	1	1	1	1	1	1
Does epidemiological work in the field—								
Routinely	------	------	------	------	1	1	------	------
Upon request and/or in emergencies	1	------	1	1	1	1	1	1
Hospitalizes communicable disease patients	------	7	------	------	------	2[c]	------	------
Provides for care or treatment of typhoid carriers	------	------	------	------	------	------	------	------
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	1	------	------	------	------	------	------	------
Makes studies of hookworm infestation	------	------	1	------	------	------	------	------
Makes studies to determine prevalence and distribution of malaria—								
Blood smears	------	------	------	------	------	------	1	------
Splenometric surveys	------	------	------	------	------	------	1	------
Investigates suspected anopheline breeding areas	------	------	1	------	------	------	1	------
Participates in drainage and/or larvicidal projects for malaria control	------	------	1	------	------	------	1	------
Exchanges with other State agencies information regarding diseases with animal reservoirs—								
Routinely	------	------	------	------	------	1	1	------
Upon occasion only	1	------	1	1	1	------	------	------
Renders additional service not covered in this classification	------	------	------	------	------	------	1	------

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific activities designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*—Continued

Activity	State or Territory							
	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1	1[b]	1	1	1, 4	1, 2	1	1[b], 7
Promotes local programs of control	1	1	1	1	1	1	1	1
Conducts educational programs in communicable disease control	1, 4	1, 4	1, 4	1	1, 4	1	1	1, 4
Supervises and provides consultation service to local organizations	1	1	1	1	1	1	1	1
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	1[e]	1[e]	1[e]	------	1[e]	1[e], 2	1[e]	1[e]
Operates a direct service program:								
Collects and analyzes reports of communicable diseases	1	1	1	1	1	1	1	1
Collects reports of all immunizations performed—								
By local health units	1	1	1	------	1	1	1	1
By private physicians	------	------	------	------	------	------	------	------
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	------	1	------	1	1	------	------	1
Performs immunizations—								
Routinely	1	------	------	1	7	------	------	------
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Furnishes free biologicals and drugs for immunization or treatment—								
Smallpox vaccine	------	1[e]	1[e]	------	------	------	1	------
Typhoid vaccine	1	1[e]	1	1	------	------	1	1
Rabies vaccine	------	1[e]	------	------	------	------	2[e]	------
Whooping cough vaccine	------	------	------	------	------	------	2[e]	1
Toxin for Schick test	1	1[e]	1	1	------	------	1[e]	------
Toxoid for diphtheria immunization	1	1[e]	1[e]	1	------	------	1	------
Diphtheria antitoxin	------	------	------	1	------	------	1, 2[e]	------
Tetanus antitoxin	------	------	------	------	------	------	2[e]	------
Scarlet fever antitoxin	------	------	------	------	------	------	2[e]	------
Convalescent serums	------	------	------	------	------	------	2[e]	------
Quinine	------	------	------	------	------	------	2[e]	------
Carbon tetrachloride	------	------	------	------	------	------	------	------
Tetrachlorethylene	------	------	------	------	------	------	------	------
Silver nitrate	1	1	------	1	1	------	1	1
Other	------	------	------	------	------	------	------	------
Supplies clinical diagnostic service to local health officers	1	1	1	1	1	1	1	1
Provides diagnostic laboratory service to private physicians and local health officers	1	1	1	1	1	1	1	1
Does epidemiological work in the field—								
Routinely	1	------	------	------	1	1[b]	1[b]	1[e]
Upon request and/or in emergencies	1	1	1	1	1	1	1	1
Hospitalizes communicable disease patients	------	------	------	------	------	2	------	7
Provides for care or treatment of typhoid carriers	------	------	------	------	------	------	------	1
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	------	1	------	------	------	------	1	1
Makes studies of hookworm infestation	------	------	------	------	------	------	------	------
Makes studies to determine prevalence and distribution of malaria—								
Blood smears	1	1	------	------	1	------	------	------
Splenometric surveys	------	------	------	------	------	------	------	------
Investigates suspected anopheline breeding areas	1	1	------	------	1	------	------	1
Participates in drainage and/or larvicidal projects for malaria control	1	------	------	------	1	------	------	------
Exchanges with other State agencies information regarding diseases with animal reservoirs—								
Routinely	------	1	1	1	1[e], 3[e]	1	1, 3	1
Upon occasion only	1	------	------	------	------	------	------	------
Renders additional service not covered in this classification	1	1	------	------	7	------	------	------

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific activities designed to control communicable diseases in each State and Territory, the District of Columbia, and the Virgin Islands*—Continued

Activity	State or Territory				
	Wyoming	Alaska	Hawaii	Puerto Rico	Virgin Islands
Promulgates and enforces State laws, rules, and regulations for communicable disease control	1	1	1	1, 4, 9	1, 9
Promotes local programs of control	1	1	1	1	------
Conducts educational programs in communicable disease control	1	1	1	1	1
Supervises and provides consultation service to local organizations	1	1	1	1	------
Distributes and/or administers financial grants-in-aid to local health units for communicable disease control	------	------	1[e]	------	------
Operates a direct service program—					
Collects and analyzes reports of communicable diseases	1	1	1[f]	1	1[f]
Collects reports of all immunizations performed—					
By local health units	------	1	1	1	------
By private physicians	------	------	1	------	------
Makes surveys or uses other devices to determine population protected by immunization against specific diseases	------	1	1	------	------
Performs immunizations—					
Routinely	1	1	1	1	1
Upon request and/or in emergencies	1	1	1	1	1
Furnishes free biologicals and drugs for immunization or treatment—					
Smallpox vaccine	1	1	1	1	1
Typhoid vaccine	1	1	1	1	1
Rabies vaccine	1	------	------	1	------
Whooping cough vaccine	------	1	------	------	------
Toxin for Schick test	1	1	1[e]	------	------
Toxoid for diphtheria immunization	1	1	1	1	------
Diphtheria antitoxin	------	1	1[e]	1	1[e]
Tetanus antitoxin	------	1	1	1	1[e]
Scarlet fever antitoxin	------	------	1	------	------
Convalescent serums	------	------	------	------	------
Quinine	------	------	------	1	1[e]
Carbon tetrachloride	------	------	------	1	------
Tetrachlorethylene	------	------	------	------	------
Silver nitrate	------	1	1	1	1
Other	------	1[k]	1[k]	1[o]	------
Supplies clinical diagnostic service to local health officers	1	1	1	1	------
Provides diagnostic laboratory service to private physicians and local health officers	1	1	1	1	1
Does epidemiological work in the field—					
Routinely	1	1[c]	------	1	1
Upon request and/or in emergencies	1	1	1	1	1
Hospitalizes communicable disease patients	------	------	------	------	1
Provides for care or treatment of typhoid carriers	------	------	------	------	------
Restricts activities of typhoid carriers—requires registration, periodic check-up, etc	------	------	1	------	------
Makes studies of hookworm infestation	------	------	------	1	1
Makes studies to determine prevalence and distribution of malaria—					
Blood smears	------	------	------	------	------
Splenometric surveys	------	------	------	------	------
Investigates suspected anopheline breeding areas	------	------	1	1	------
Participates in drainage and/or larvicidal projects for malaria control	------	------	------	1	1
Exchanges with other State agencies information regarding diseases with animal reservoirs—					
Routinely	1	1	1	1	------
Upon occasion only	------	------	------	------	------
Renders additional service not covered in this classification	------	------	------	------	------

For footnotes see p. 2244.

The range of activities included may be taken to represent some confusion as to the means of controlling communicable diseases. Regulatory functions, of course, have long been recognized as an essential measure. In fact, at one time, quarantine was looked upon as the only approach to the communicable disease problem. All States still maintain some sort of regulatory control, though in 8 of them this control is limited to promulgation of rules and regulations, the power of enforcement being delegated to local authorities. In 9 more jurisdictions the State has enforcement power only in the event that local action is inadequate. As to the type of regulatory authority vested in State agencies, and more particularly in State health departments, one may generalize and say that such authority usually extends to establishment and/or enforcement of regulations pertaining to reporting of communicable diseases and to restrictions of mobility of cases and contacts. Some States place special emphasis upon regulatory control of smallpox; 16 jurisdictions, namely, Arkansas, the District of Columbia, Kentucky, Maryland, Massachusetts, New Hampshire, New Mexico, New York, Pennsylvania, Rhode Island, South Carolina, Virginia, West Virginia, Hawaii, Puerto Rico, and the Virgin Islands, have laws which make vaccination compulsory before children may attend school. Twenty-one other areas have enacted legislation or promulgated regulations which enable local areas to draft their own regulations or which require smallpox vaccination only under prescribed conditions, such as "in case of a threatened epidemic," "exposed persons must be vaccinated or quarantined," "if a case occurs in a school or community, all unvaccinated children must be excluded for two weeks," "the State board of health may adopt such

---

FOOTNOTES FOR TABLE 2

[a] Code:
1. Health department
2. Department of welfare, social security, or public assistance
3. Department of agriculture
4. Department of education
5. Special commission
6. Independent State hospital or laboratory
7. State university or college
8. State board of entomology
9. Other departments of State government

[**] Activities herein described pertain to the general communicable diseases and exclude tuberculosis, pneumonia, and venereal disease, which are treated separately in this study. Control work for malaria and plague are included even though the control measures are primarily a function of the engineering division. General sanitary measures in relation to communicable disease will be described in subsequent articles devoted to sanitation.

[s] The department of health is really a division (Idaho) and bureau (Maine) of public health, subordinate to the department of welfare (Idaho) and the department of health and welfare (Maine).

[b] Power of enforcement either not included in regulatory authority or limited to situations in which local action is inadequate.

[c] For selected conditions, selected areas, or selected population groups only.

[d] Consultation service only.

[e] As part of grant-in-aid to local health units for general health work.

[f] Collects reports, but does little toward analyzing them.

[g] Of those performed with State-supplied material only.

[h] For demonstrations only.

[i] Charge of 1 cent per point to prevent waste. This represents one-fourth of the actual cost to the State.

[j] Oil of chenopodium.

[k] Antimeningitis serum.

[l] Dick test material.

[m] Insulin.

[n] Cod-liver oil.

[o] Sulfathiazole, staphylococcus vaccine, thromboplastin, and leucocitin.

measures for general vaccination of inhabitants of any city, town, or county as it deems proper and necessary to prevent introduction or arrest progress of smallpox." Alabama, Arizona, Colorado, Connecticut, Georgia, Iowa, Kansas, Louisiana, Maine, Michigan, Minnesota, Mississippi, Montana, New Jersey, North Carolina, Ohio, Oregon, Tennessee, Wisconsin, Wyoming, and Alaska constitute this latter group.

Reference to a recent study by Fowler [2] which involved a thorough search of existing State laws and health department regulations pertaining to the requirements for vaccination against smallpox indicates that data collected in the survey herein reported agree very closely with his findings. Comparison of the current situation with that of a decade ago, as reported by Ferrell, Smillie, Covington, and Mead,[3] reveals only one addition to the group of States with compulsory smallpox vaccination laws, but considerable shifting has taken place in the group having conditional laws or regulations, which frequently represent delegation of responsibility to local political units.

Only three jurisdictions—North Carolina, West Virginia, and Hawaii—have compulsory diphtheria immunization laws. Arkansas, Mississippi, and New Mexico require that certain population groups, "family contacts and known carriers," "all food handlers," and "all susceptibles," respectively, be immunized against typhoid fever.

The communicable disease problem is by no means a static one. Recognizing this, most State health departments frequently revise their rules and regulations in a further effort to eliminate, limit, or abate those conditions which are especially prevalent or serious. A record of the most recently published rules and regulations for communicable disease control in each State follows.

[2] Fowler, William: Principal provisions of smallpox vaccination laws and regulations in the United States. Pub. Health Rep., 56:167 (January 31, 1941).

[3] Ferrell, John A., Smillie, Wilson G., Covington, Platt W., and Mead, Pauline A.; International Division of the Rockefeller Foundation for the Conference of State and Provincial Health Authorities of North America: Health Departments of States and Provinces of the United States and Canada. Public Health Bulletin No. 184 (Revised). United States Government Printing Office, Washington, 1932.

State	Year in which communicable-disease regulations were last revised
Alabama	1936
Arizona	1929
Arkansas	1940
California	1939
Colorado	1927
Connecticut	1939
Delaware	1938
District of Columbia	1940
Florida	1936
Georgia	1925
Idaho	Not reported.
Illinois	1935
Indiana	1930
Iowa	1938
Kansas	1936
Kentucky	1935
Louisiana	1932
Maine	1937
Maryland	1922
Massachusetts	1938
Michigan	1940
Minnesota	1938
Mississippi	1940
Missouri	1938
Montana	1929
Nebraska	1933
Nevada	1939
New Hampshire	1936
New Jersey	1940
New Mexico	1936
New York	1940
North Carolina	1937
North Dakota	1939
Ohio	1930
Oklahoma	1933
Oregon	1936
Pennsylvania	1937
Rhode Island	1938
South Carolina	1937
South Dakota	1940
Tennessee	1938
Texas	1925
Utah	1937
Vermont	1937
Virginia	1938
Washington	1939
West Virginia	1935
Wisconsin	1940
Wyoming	1930
Alaska	1938
Hawaii	1940
Puerto Rico	Not reported.
Virgin Islands	1915

Examination of these regulations and the more detailed studies by Emerson [4] would indicate, however, that in many instances antiquated and ineffective measures are carried over from one revision to another.

In only about one-fifth of the States is regulatory authority divided between the health department and any other agency of State government. When there is cleavage in general regulatory responsibility for communicable disease control, it is due to a particular set-up which makes the Governor (Puerto Rico and the Virgin Islands), the Board of Commissioners (District of Columbia), or the Board of Welfare (Idaho) responsible for all health laws. The regulatory authority of departments of education and welfare and of State universities which obtains in certain States is restricted to that portion of the program in which the respective agencies are concerned. For instance, in five States the department of education is the agency responsible for enforcement of the compulsory smallpox vaccination law, while occasionally a department of welfare or State university prescribes and/or enforces certain regulations concerning hospitalization of communicable disease patients.

As the value of vaccination and immunization against certain diseases has been demonstrated, many States have concentrated upon promotional and educational programs designed to secure more wide-

[4] Emerson, Haven: State procedures for communicable disease control. Am. J. Pub. Health, 29:701 (July 1939).

Emerson, Haven: The control of communicable diseases. Paper read October 16, 1941, before the Health Officers Section of the American Public Health Association in its seventieth annual meeting at Atlantic City, N. J.

spread protection. Wherever there are local counterparts of the State health department, the State organization is engaged in promotion of local programs of control. Education of the public regarding the most successful methods of combating communicable illnesses represents an important part of the work of every State health department staff. Newspaper releases, radio talks, motion pictures, posters and other exhibits, pamphlets, letters, home visits, and lectures are the educational devices usually employed. Approaches are made to both professional and lay groups, medical societies representing the first, and parent-teacher associations, mothers' clubs, and teacher-training classes, the second. Immunization against diphtheria, smallpox, and typhoid fever is the subject given most emphasis. In nearly one-fourth of the States educational work of the health department is augmented by programs sponsored by the department of education. These latter programs are designed for teachers and school children and stress the importance of immunization and of early diagnosis and segregation of the different diseases.

Provision of advisory and supervisory service to local health units is a practice rather uniformly followed by State health departments. Necessity for including this type of service in the State program is a natural outgrowth of the expansion of organized full-time local health departments. Increased activity at the local level is encouraged by the States' policy of extending financial grants-in-aid to these local units for the carrying on of their work. These grants are not apt to be designated specifically for communicable disease control but are a part of the financial aid given by the State to counties or cities for general health work. Almost exclusively, the health department is the agency charged with this feature of the State program. Such financial participation by the State is closely tied up with the supervisory and advisory service previously mentioned, since aid is extended only when approved methods of control are observed locally.

It would seem, therefore, that insofar as communicable disease control is concerned, State agencies—particularly State health departments—with relative uniformity regard as State responsibility the first four branches of service, namely, regulation, promotion and education, supervision and advice, and financial aid to local units. A basic variation among the States in their organization for communicable disease control rests upon the portion of responsibility for direct service which is borne by the State. Study of the list of direct services presented in table 2 as being rendered by one or more States shows very clearly how far beyond the original idea of quarantine the present conception of communicable disease control has extended.

The first step in communicable disease control is necessarily based upon a knowledge of where and when cases of each kind occur.

Collection of reports of communicable illnesses is a function of every State health department. As to frequency and method of collection, however, there is considerably less uniformity. In some instances attending physicians report directly to the State agency; in others, they report through local health officers. Practices observed by each State are briefly described as follows:

Variation in reporting communicable disease to State health departments

State	By whom reported	Frequency of reporting [5]	Payment of fees for reports
Alabama	County health officers	Weekly	No.
Arizona	County superintendents of public health	do	No.
Arkansas	Local health officers	do	No.
California	do	do	No.
Colorado	Local health officers and physicians	do	No.
Connecticut	Local health officers	Daily	No.
Delaware	Physicians	Weekly	No.
District of Columbia	do	Daily	No.
Florida	Local health officers and physicians	do	No.
Georgia	do	Weekly	No.
Idaho	do	do	No.
Illinois	Local health officers	Daily	No.
Indiana	City, county, and town health officers	Weekly	No.
Iowa	Local health officers	Daily	No.
Kansas	do	Weekly	No.
Kentucky	do	do	No.
Louisiana	Physicians	Daily	No.
Maine	Local health officers	Weekly	No.
Maryland	do	Daily	No.
Massachusetts	Local boards of health	do	No.
Michigan	Local health officers	do	No.
Minnesota	do	do	No.
Mississippi	County health officers	Weekly and monthly.	No.
Missouri	Local health officers	Weekly	No.
Montana	do	do	No.
Nebraska	County, city, or village boards of health	do	No.
Nevada	County health officers	do	No.
New Hampshire	Local health officers	do	No.
New Jersey	do	Daily	Yes.
New Mexico	do	do	No.
New York	do	do	Yes.
North Carolina	County quarantine officers	do	Yes. [6]
North Dakota	Local health officers	Weekly	No.
Ohio	Local health commissioners	do	No.
Oklahoma	County health officers	do	No.
Oregon	Local health officers and physicians	do	No.
Pennsylvania	Department and municipal health officers [7]	Daily and weekly [7]	No.
Rhode Island	Local health officers	Weekly	No.
South Carolina	Local health officers and physicians	Daily and monthly. [8]	Yes.
South Dakota	Local health officers	Daily	No.
Tennessee	Local health officers and physicians	Weekly	No.
Texas	Local health officers	do	No.
Utah	do	do	No.
Vermont	Local health officers and physicians	do	Yes
Virginia	do	do	No.
Washington	Local health officers	do	No.
West Virginia	do	do	No.
Wisconsin	do. [9]	do	Yes.
Wyoming	do	do	No.
Alaska	Local health officers, physicians, and public health nurses.	do	No.
Hawaii	Physicians	do	No.
Puerto Rico	Not specified	do	No.
Virgin Islands	Physicians	Daily	No.

[5] "Frequency of reporting" represents the routine requirement for the general list of notifiable diseases in each State. Furthermore, in all areas certain of the more serious diseases are reportable immediately by telephone or telegraph.

[6] To the part-time officers.

[7] Department health officers report daily for the rural sections. Municipal health officers report weekly for the urban sections.

[8] Physicians reporting directly do so daily, local health officers forward their reports monthly.

[9] Local health officers forward reports of all diseases except poliomyelitis which is reported directly by physicians.

By way of summary, it might be said that State health departments receive their reports directly from physicians; from local health officers (including the officers of counties, cities, towns, villages, or any other political subdivision), who in turn have received them from physicians, school teachers, and parents; or from both physicians and local health officers. When the third policy is followed, physicians report directly only from those sections of the State which have no local health officer. About twice as many States collect reports weekly as receive them daily.

The fact that nearly four-fifths of the States require their local health units to report to the State agency all immunizations performed indicates the importance accorded immunization as an element of communicable disease control. Seven States even extend this requirement to private physicians, but under such circumstances it is customary to have the private practitioner report only immunizations performed with material furnished free of charge by the State. To supplement information obtained from these sources, about one-half of the States make surveys or use other similar devices to determine the proportion of the population which is protected by immunization against specific diseases. As a result, the definite information thus obtained lends greater impetus to the promotional and educational programs previously discussed.

Personnel of all State health departments go into the field for the purpose of actually performing immunizations for demonstration purposes, upon special request, and in emergencies—actual or threatened epidemics representing the "emergencies." However, in over one-third of the States, performance of immunizations is included as a routine duty of the health department staff. Furnishing free immunizing materials to be administered by local personnel is a more usual function of the State agency than routine performance of the immunizations. According to table 2, typhoid vaccine is supplied by more States than any other type of immunizing agent, 48 of the 53 jurisdictions reporting its free distribution. Distribution of silver nitrate for the prevention of ophthalmia neonatorum ranks second and toxoid for diphtheria immunization, third. Forty-four and forty-two States, respectively, supply these materials. Smallpox vaccine, toxin for Schick testing, and antitoxin for diphtheria are each furnished by more than 30 States. Rabies vaccine and tetanus antitoxin are preventive agents which are distributed free by less than half but more than one-fourth of the States. Other drugs and biologicals listed are less frequently provided; the few States which do supply each kind may be identified from table 2.

Variation exists among the States not only as to the type of immunizing agents furnished, but also as to the population groups for which

they are available. The conditions under which they are distributed may be described in one of several ways: (1) No restrictions—available to all physicians and local health units for any person; (2) available to all physicians and local health units for medical indigents only; (3) available to local health units for their clients only; (4) available to any physician for group immunizations. A State does not necessarily follow a constant procedure for all types of material that it provides. Some may be furnished under one of the conditions mentioned while others are distributed under different circumstances.

In almost every instance, personnel attached to the State health department staff are available to local health officers and to private physicians for aid in the clinical diagnosis of communicable disease but there are wide differences among the States in the extent to which this service is used. Diagnostic laboratory service is provided consistently by State agencies also. The same intensity of service does not obtain in all States or all parts of particular States. Furthermore, the character of the examinations varies according to the diseases that are prevalent in the several regions. In another chapter devoted exclusively to "laboratory service" the several aspects of this service will be considered in greater detail.

Field epidemiological work is generally recognized as a function of the State health department in the event of emergencies or upon the special request of local health officers or private physicians. About half of the States do not limit their epidemiological work to these occasions but include such service: Without qualification throughout the State; as a routine health department duty for areas without organized local health service; or for selected diseases—usually typhoid fever, poliomyelitis, smallpox, Rocky Mountain spotted fever, tularemia, or undulant fever.

Facilities for the hospitalization of communicable disease patients are provided by about one-fifth of the States. The State university hospital is the place most often utilized for this service. Several departments of welfare and health departments, and one independent State hospital also accept persons suffering from communicable illnesses.

The foregoing services offered by departments of State government for prevention and control of communicable diseases pertain to the problem in general. Brief consideration will now be given to selected items of service performed by the States for the control of particular diseases. The matter of typhoid carriers is the first example. Almost half of the States restrict the activities of typhoid carriers by requiring registration, periodic check-ups, and the like. This, of course, is for protection of the community where the individual resides. Insofar as providing care or treatment for the carrier himself is concerned, however, only eight States assume any responsibility.

Hookworm and malaria are two transmissible illnesses, the prevalence of which is more or less restricted to the southern States. Six health departments of States having these problems report that they actively engage in studies of hookworm infestation. Studies to determine the prevalence and distribution of malaria are made in 11 jurisdictions which have recognized the presence of this disease. The blood-smear method is more frequently used than the splenometric survey. Other features of the malaria programs are investigation of suspected anopheline breeding areas and participation in drainage and/or larvicidal projects for mosquito control. Twenty-five States make anopheline investigations, whereas sixteen participate in corrective measures. These are predominantly health department services, but occasionally agricultural experiment stations, boards of entomology, State universities or colleges, and independent departments of engineering cooperate. Free drugs for the treatment of hookworm and malaria are furnished by several States.

In the States where malaria is prevalent, measures for the control of pest mosquitoes are apt to be included in the general malaria program, or at least some collateral benefit in the way of pest-mosquito control is derived from the antimalaria measures employed. Only nine States list pest-mosquito control as a separate entity. This activity will be described more fully in subsequent articles devoted to sanitation.

Among the communicable diseases to which State health departments devote their attention, a few are transmissible from animal to man. Rabies, undulant fever, Rocky Mountain spotted fever, tularemia, and equine encephalomyelitis are several of these. Most States have some arrangement whereby, upon the reporting of such disease, the health department notifies the department of agriculture, domestic animals commission, or any other agency responsible for the health of livestock. A unified plan of control is then adopted. In some States this arrangement is reciprocal, the health department being notified by the other State agency if a condition potentially dangerous to man is discovered among animals.

By way of briefly summarizing the various State plans for communicable disease control it can be said: (1) That the health department is the State agency primarily responsible, but that as many as eight agencies of other types participate in the total State effort to reduce communicable illness rates; (2) that regulatory functions, promotional and educational work, and supervisory and consultatory activities are usually regarded as functions of the State agency; (3) that financial aid to local health units for communicable disease control usually is not designated as such, but is a part of the grant for general health work; (4) that extreme variation exists in the amount and kind of direct service rendered by the State agencies, this variation

no doubt being chiefly attributable to the difference in local programs which supplement those of the States.

TABLE 3.—*Bureau or division of each State health department in charge of communicable disease control in 1930 * and in 1940*

State or Territory	Bureau or division in charge in 1930	Bureau or division in charge in 1940
Alabama	Bureau of preventable diseases	Bureau of preventable diseases.
Arizona	Division of epidemiology	Division of local health administration.
Arkansas	Bureau of administration	Division of communicable disease control.
California	Division of preventable diseases	Bureau of epidemiology.
Colorado	Division of epidemiology	Division of local health administration and epidemiology.
Connecticut	Bureau of preventable diseases	Bureau of preventable diseases.
Delaware	Bureau of administration	Division of communicable diseases.
District of Columbia	Information not published	Division of preventable diseases.
Florida	Bureau of communicable diseases	Bureau of epidemiology.
Georgia	Division of administration	Division of preventable disease.
Idaho	Bureau of administration	Division of local health service.
Illinois	Division of communicable diseases	Division of communicable diseases.
Indiana	do	Bureau of communicable disease.
Iowa	Division of preventable diseases and epidemiology.	Division of preventable diseases.
Kansas	Division of communicable diseases	Division of epidemiology.
Kentucky	Bureau of epidemiology	Bureau of epidemiology.
Louisiana	do	Do.
Maine	Division of communicable diseases	Division of communicable diseases.
Maryland	Bureau of communicable diseases	Bureau of communicable diseases.
Massachusetts	Division of communicable diseases	Division of communicable diseases.
Michigan	Bureau of preventive medicine	Bureau of epidemiology.
Minnesota	Bureau of preventable diseases	Division of preventable disease.
Mississippi	Bureau of communicable diseases	Division of preventable disease control.
Missouri	Division for control of contagion	Division of local health administration.
Montana	Division of epidemiology	Division of epidemiology.
Nebraska	Division of venereal diseases and epidemiology.	Division of acute communicable diseases and venereal diseases.
Nevada	Central administration	Division of local health administration and epidemiology.
New Hampshire	Division of epidemiology and venereal disease control.	Division of epidemiology and local health work.
New Jersey	Bureau of local health administration	Bureau of local health administration.
New Mexico	Division of preventable diseases	Division of county health administration.
New York	Division of communicable diseases	Division of communicable diseases.
North Carolina	Bureau of epidemiology	Division of epidemiology and venereal disease control.
North Dakota	Bureau of preventable diseases	Division of preventable disease.
Ohio	Division of communicable diseases	Child hygiene division.
Oklahoma	Bureau of epidemiology	Division of epidemiology.
Oregon	Division of administration	Division of administration.
Pennsylvania	Bureau of communicable diseases	Division of epidemiology.
Rhode Island	Division of central administration	Division of preventable diseases.
South Carolina	Bureau of epidemiology	Division of communicable diseases.
South Dakota	Division of epidemiology	Division of epidemiology.
Tennessee	Division of preventable diseases	Division of preventable diseases.
Texas	Bureau of laboratories	Division of epidemiology.
Utah	Bureau of communicable diseases	Do.
Vermont	Division of communicable diseases	Division of communicable diseases.
Virginia	Bureau of epidemiology	Bureau of communicable diseases.
Washington	Division of communicable diseases	Division of epidemiology.
West Virginia	Division of preventable diseases	Division of communicable diseases.
Wisconsin	Bureau of communicable diseases	Bureau of communicable diseases.
Wyoming	Central administration	Division of epidemiology.
Alaska	Information not published	Division of communicable disease control.
Hawaii	do	Bureau of communicable diseases.
Puerto Rico	do	Bureau of epidemiology and vital statistics.
Virgin Islands	do	Health department not broken down into divisions or bureaus.

* See text footnote 3.

Since in all States major concern for the communicable disease situation rests with the health department, it is of interest to note the particular bureau or division of each department which is directly responsible. Of further interest is a study of the change in organization which has taken place during the past ten years. Table 3 shows

the division in charge in 1930 [10] and in 1940. There has been little net change from the standpoint of specialization in organization for the prevention of communicable disease. One-third of the States (information for 1930 was not published for the District of Columbia, the Territories, and the Virgin Islands) have made no change whatever during the ten-year interval in the division or bureau responsible. In some 20 additional States, the difference lies in terminology rather than function. True, 6 States which formerly carried on their communicable disease programs through the office of central administration now have separate communicable disease divisions, but, on the other hand, 5 States have added extra duties, notably local health administration, to the bureau which ten years ago operated exclusively for the control of communicable disease.

EXPENDITURES FOR COMMUNICABLE DISEASE CONTROL

Perhaps the most concrete expression of intensity of State service for communicable disease control is found in the amount of money expended for this purpose. However, extreme difficulty is encountered in arriving at an expenditure figure which is truly descriptive. Since communicable disease control is primarily a health department problem and only incidentally a problem of several other agencies of State government, it is not surprising to find that the health department is the sole agency which identifies its expenditures for communicable disease work. Indeed, complexity of organization and function, as well as variation in items included under similar terminology, make attempts to assign funds to specific services somewhat misleading even within health departments. Almost every plan for generalized health service has some bearing upon communicable disease control. For instance, all well-rounded public health nursing programs and all services of State health districts include some attention to the prevention or reduction of communicable illnesses; yet it is impossible to determine what portion of the cost of these general services should be charged to communicable disease control. Much of the work of the laboratory is concerned with the diagnosis of communicable disease but expenditures for such purposes are not as a rule separated from those devoted to support of general laboratory service. Likewise sanitation for the most part is directed toward reducing intestinal infections and infestations. Furthermore, in several States communicable disease activities are carried out in conjunction with the administrative functions of the health department or are so closely integrated with local health administration, with activities for control of the venereal diseases, or with the child health programs that separation of funds is impossible. Nevertheless, in spite of the many deficiencies in available data regarding expend-

[10] See footnote 3.

itures for State communicable disease work, they are presented as a partial answer to the numerous requests for such information.

The figures included in table 4 represent mere approximations, and even as such they must be accepted with certain reservations and qualifications. Expenditures of State health departments only are included, inasmuch as no other participating agencies of State government keep their records in such fashion as to permit segregation of communicable disease funds. Insofar as they could be separated, figures recorded in table 4 are exclusive of expenditures for tuberculosis, pneumonia, and venereal disease which are treated under other categories in this study. In a few States, however, no separation could be made. Footnotes to the table indicate these instances. Expenditures for laboratory services and for certain items of sanitation relating to communicable disease control are omitted, likewise, whenever possible. Costs of biologicals are included unless purchased by the division of central administration and lumped with general supplies of the department. Control activities for malaria and plague are included even though the control measures involved may be primarily a function of the engineering division. There is no separation, of course, of expenditures for communicable disease activities of the State district health officers or nurses who carry on generalized health programs. Briefly, expenditures included are restricted to those for communicable disease activities designated as such by the various State health departments. All funds disbursed by health departments for this purpose are recorded, irrespective of their source. Other than State-appropriated moneys, Federal grants—which amount to roughly 20 percent of the total—constitute the most sizable portion of State health department expenditures for communicable disease control.

According to table 4, State services specified as communicable disease control activities are costing the Nation almost 2 million dollars per year. This sum is the equivalent of $0.016 per capita. From the standpoint of individual jurisdictions, expenditures for designated State practices related to communicable disease control range from one-fifth of 1 cent to 30 cents per capita. At first glance it might be thought that explanation of this wide variation lies, at least partly, in the occasional inclusion of such nonseparable items as rural health administration, laboratory services, venereal disease activities, or vital statistics operations. Closer study reveals, however, that this impression cannot be confirmed except in one extreme instance, and even here these inseparable items are secondary to an active plague program.

TABLE 4.—*Approximate total and per capita annual expenditures * by State health departments for communicable disease activities designated as such ** in each State and Territory, the District of Columbia, and the Virgin Islands*

State or Territory	Approximate annual expenditure * for communicable disease activities designated as such **		State or Territory	Approximate annual expenditure * for communicable disease activities designated as such **	
	Total	Per capita		Total	Per capita
Total	$1,985,600	$0.016	Nevada	(a)	(a)
Alabama	50,000	.018	New Hampshire	b $16,600	b $0.034
Arizona	(a)	(a)	New Jersey	(a)	(a)
Arkansas	24,200	.012	New Mexico	6,900	.013
California	52,600	.008	New York	136,800	.010
Colorado	b 7,900	b .007	North Carolina	29,500	.008
Connecticut	66,500	.039	North Dakota	c 8,100	c .013
Delaware	20,500	.077	Ohio	10,800	.002
District of Columbia	41,800	.066	Oklahoma	5,800	.002
Florida	58,100	.031	Oregon	(a)	(a)
Georgia	72,000	.023	Pennsylvania	41,000	.004
Idaho	(a)	(a)	Rhode Island	c 26,100	c .037
Illinois	288,600	.037	South Carolina	50,700	.027
Indiana	32,600	.010	South Dakota	7,600	.012
Iowa	44,500	.018	Tennessee	45,200	.016
Kansas	6,000	.003	Texas	29,800	.005
Kentucky	6,600	.002	Utah	c 19,200	c .035
Louisiana	106,800	.045	Vermont	3,100	.009
Maine	21,900	.026	Virginia	30,300	.011
Maryland	c 29,300	c .016	Washington	10,500	.006
Massachusetts	104,600	.024	West Virginia	8,200	.004
Michigan	27,700	.005	Wisconsin	11,400	.004
Minnesota	d 114,600	d .041	Wyoming	8,200	.033
Mississippi	28,300	.013	Alaska	c 15,200	c .021
Missouri	(a)	(a)	Hawaii	c, d 126,800	c, d .300
Montana	b 8,000	b .014	Puerto Rico	c 124,700	c .067
Nebraska	(a)	(a)	Virgin Islands	(a)	(a)

* Expenditures for the health services considered represent index rather than absolute amounts. Because of variations in fiscal practices, figures cover the most recent year for which information was available at the date of interview. In some instances, because of overlapping and interweaving of activities, estimates were accepted in the absence of precise expenditure records. All funds disbursed by State health departments for communicable disease control are included, irrespective of their source. Other than State-appropriated moneys, Federal grants constitute the most sizable portion—roughly 20 percent of the total.

** Insofar as they could be separated, figures for communicable disease are exclusive of tuberculosis, pneumonia, and venereal disease, which are treated separately in this study. In a few States, however, no separation could be made. Expenditures for laboratory services are omitted, likewise, except in instances where records are kept in such fashion as to make segregation impossible. Costs of biologicals are included unless purchased by the division of central administration and lumped with general supplies of the department. Control work for malaria and plague are included even though the control measures involved are primarily a function of the engineering division. There is no separation, of course, of expenditures for communicable disease activities of the State district health officers or nurses who carry on generalized programs or for general sanitary measures in relation to communicable disease control.

a Information not available for communicable disease activities as such.
b Includes rural health administration.
c Includes venereal disease activities.
d Includes laboratory services.
e Includes vital statistics.

Several tests were made to determine whether any particular State characteristic appeared to be responsible for the differences found in per capita allotments for communicable disease work. The several criteria chosen for classification of the States in homogeneous groups were: Wealth, as measured by per capita income payments to individuals; [11] geographic area, as described by four major divisions

[11] Martin, John L., National Income Division, Department of Commerce: Income Payments to Individuals by States, 1929–39. Survey of Current Business, October 1940.

of the country previously established [12] for study of public health data; and total State population. For the first and third investigations the States were arrayed in descending order by per capita income and total population, respectively, and then were divided into quarters. For the second test, the geographic areas used were designated as Northeastern, Southern, Central, and Western.

Apparently the influence of State wealth is negligible until the highest quarter of States is reached. States of this group do spend appreciably more than those of the three lower per capita income brackets, for $0.013, $0.012, and $0.010, respectively, represent median per capita expenditures for State communicable disease activities in areas of the three lowest income levels arranged ascendingly, whereas the corresponding figure for the wealthiest quarter of States is $0.033. Nevertheless, it is doubtful whether differences in expenditures for communicable disease work could be attributed to a State's ability to pay, inasmuch as there is no continuous increase as the wealth level rises.

Location of a State within a particular geographic area appears to have very slight bearing upon the expenditure picture, likewise. Only in the Northeastern section is there noticeable difference from the remainder of the country in the per capita figure which represents allocation of funds to control of communicable disease at the State level. The median State of the Northeastern group reports $0.026 for this purpose; in the Southern section of the country the amount is $0.012; while in the Central area it is $0.011; and in the Western States, $0.013.

When total State population is used as the measure of variation, there is a different story, however. Here there is gradual increase in communicable disease expenditures as the total populations of the States drop. The median per capita expenditure for the middle 50 percent of the jurisdictions arrayed by total State population is twice as high as that for the most populous quarter of States, while the corresponding figure for the group of States representing the lowest quarter, as measured by total population, is more than three times as great as for the highest quarter. The median per capita expenditure for States of each population class is as follows: Highest

[12] Mountin, Joseph W., Pennell, Elliott H., and Pearson, Kay: The distribution of hospitals and their financial support in southern States. Southern Med. J., 33: 402 (April 1940). The established geographic areas with the States contained therein are as follows:

Northeastern: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia.

Southern: Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas.

Central: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

Western: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, and California.

quarter, $0.008; second quarter, $0.016; third quarter, $0.016; and lowest quarter, $0.027.

The several variations cited, of course, may be an outgrowth of differences in complementary communicable disease programs conducted at the local level, examination of which was not included in the survey hereby reported. It is natural to assume that a greater portion of total service would be delegated to local subdivisions in the larger States than in the less populous ones; however, the exact influence of supplementary local service as a factor in determining State activity was not revealed by this study.

DISCUSSION

Activities at the State level for the control of communicable disease are largely concentrated within the health department. However, when the entire country is considered, eight other agencies of State government participate in some way in communicable disease control work. The department of health operates for this purpose in each of the 53 jurisdictions studied (the 48 States, District of Columbia, Territories of Alaska, Hawaii, and Puerto Rico, and the Virgin Islands making up the jurisdictions). In somewhat less than half of them it is the only State agency concerned with the communicable disease situation. In the other areas, departments of welfare, agriculture, or education, special commissions, State hospitals, universities, boards of entomology, or independent laboratories perform some function designed to lower communicable disease morbidity and mortality rates. In some instances there is close coordination between the health department activities and those of the other State agencies. On the other hand, there is sometimes complete independence or even duplication of effort.

Regulatory functions, which have long been regarded as the official responsibility of the State agency in communicable disease control, represent only one feature of current State communicable disease programs. Promotional and educational enterprises and supervisory and consultatory assistance in approved control methods are now engaged in by practically all State health departments. Financial grants-in-aid to local health units for general health work which includes activities for communicable disease control are another kind of State participation commonly employed. Direct service programs are characterized by great diversity among the several States. Types of direct service offered with varying frequency are as follows: Collection and analysis of morbidity reports, collection of reports of immunizations performed, management of surveys to determine illness incidence and extent of protection, performance of immunizations, provision of free biologicals and drugs for immunization against or treatment of

communicable illnesses, provision of clinical and/or laboratory diagnostic service, participation in epidemiological investigations, and provision of hospitalization for communicable disease patients. Because of the wide variation in practices, it would be utterly impracticable to describe a "typical" State program for communicable disease control. Presence or absence of direct State service is controlled, perhaps, in large measure by the amount and kind of local service available; yet the true extent of such influence was not determined in this survey.

Although it is impossible to arrive at an entirely complete and accurate figure for the cost of communicable disease services provided at the State level, the most satisfactory data available point to an approximate total annual expenditure of nearly 2 million dollars, or $0.015 per capita. This expenditure represents a wide range among the several States, those of large populations spending relatively less than those of small. It does not take into account the several health department functions of other designation that supplement direct measures for the control of communicable disease.

ORNITHODOROS TURICATA AND RELAPSING FEVER SPIROCHETES IN NEW MEXICO [1]

By GORDON E. DAVIS, *Senior Bacteriologist, United States Public Health Service*

In 1908, Banks reported the occurrence of the tick *Ornithodoros turicata* on cattle near Las Cruces, Dona Ana County, in southern New Mexico. In 1936, relapsing fever was contracted by a boy from California while visiting on a ranch in Chaves County, N. Mex. (not previously reported). The boy was accustomed to hunt rabbits, which are present in large numbers, and divide the rabbit meat among the hunting dogs. These are the only known reports for the State of relapsing fever or of a tick that is known to transmit it.

During the latter part of August 1940 the writer made a rapid survey of 10 counties, viz, Lea, Roosevelt, Curry, Chaves, Eddy, Lincoln, Dona Ana, Luna, Hidalgo, and Guadalupe, to determine whether ticks of the genus *Ornithodoros* were present. Forty lots, ranging from 1 to 78 ticks, were collected. During this period an additional lot of 16 ticks was collected in Chaves County by Assistant Entomologist Glen M. Kohls and Assistant Parasitologist William L. Jellison, of the Rocky Mountain Laboratory. The total number of ticks was 604, all *O. turicata*. Five hundred and thirty-nine survived shipment to the Rocky Mountain Laboratory, where they were tested for spirochetes.

[1] From the Rocky Mountain Laboratory, Hamilton, Mont., Division of Infectious Diseases, National Institute of Health.

In addition, casual observations were made in southwestern Quay County, the northern portion of Torrance County, and in an extensive prairie dog town in Santa Fe County, but no ticks were found.

TABLE 1.—*Ornithodoros turicata and relapsing fever spirochetes in New Mexico*

Accession No.	County	Date collected	Lot No.	Number of ticks		Host or other data	Collector	Spirochetes
				Collected	Tested			
17084	Lea	Aug. 13, 1940	1	11	11	Borrow pit	Davis	Not found.
17085	do	do	2	9	9	do	do	Do.
17086	do	do	3	8	8	do	do	Present.
17087	do	do	4	25	25	do	do	Do.
17088	do	Aug. 14, 1940	5	17	10	do	do	Not found.
17089	do	do	6	6	6	do	do	Do.
17090	do	do	7	34	29	do	do	Do.
17091	do	do	8	37	34	do	do	Do.
17092	Chaves	do	9	27	27	Kangaroo rat mound	do	Present.
17093	do	do	10	3	2	Under a rock	do	Not found.
17094	do	do	11	29	29	Kangaroo rat mound	do	Do.
17095	do	do	12	16	16	do	do	Present.
17103	do	Aug. 16, 1940	13	[1] 7	0	Small burrow	do	Do.
17107	do	Aug. 19, 1940	14	8	8	do	do	Do.
17108	do	do	15	16	15	do	do	Not found.
17109	do	do	16	9	7	do	do	Do.
17274	do	Aug. 21, 1940	17	16	16	do	Kohls and Jellison.	Present.
17096	Roosevelt	Aug. 15, 1940	18	2	1	Borrow pit	Davis	Not found.
17097	do	do	19	3	2	Prairie dog burrow	do	Do.
17098	do	do	20	3	3	Small burrow	do	Do.
17099	do	do	21	29	26	Borrow pit	do	Present.
17100	do	do	22	1	1	do	do	Not found.
17101	Curry	do	23	47	47	do	do	Do.
17102	do	do	24	14	14	do	do	Do.
17104	Eddy	Aug. 18, 1940	25	3	3	do	do	Do.
17105	do	do	26	4	2	Small burrow	do	Do.
17106	do	do	27	19	19	do	do	Do.
17110	Lincoln	Aug. 19, 1940	28	1	1	Kangaroo rat mound	do	Do.
17112	Otero	Aug. 20, 1940	29	14	11	Burrow	do	Do.
17113	do	do	30	14	14	do	do	Do.
17115	Hidalgo	Aug. 21, 1940	31	11	11	Kangaroo rat mound	do	Present.
17116	do	do	32	3	3	do	do	Not found.
17118	Guadalupe	Aug. 25, 1940	33	2	2	Borrow pit	do	Do.
17119	do	do	34	3	3	do	do	Do.
17120	do	do	35	41	40	do	do	Do.
17121	do	do	36	13	13	Kangaroo rat mound	do	Do.
17122	do	do	37	8	8	do	do	Do.
17123	do	do	38	7	4	do	do	Do.
17124	do	do	39	4	4	do	do	Do.
17125	do	do	40	78	53	Burrow	do	Do.
17126	do	do	41	2	2	do	do	Do.

[1] All ticks died.

Table 1 gives the laboratory accession number, the counties in which ticks were collected, the date of collection, the lot number, the number of ticks collected and number tested, the host or habitat, the collector, and the results of the test feedings. As ticks were collected from the habitats (burrows, etc.) rather than from the hosts, the latter cannot be definitely indicated.

Spirochetes were not recovered from 9 lots of ticks collected in Guadalupe County; 2 lots in Curry County; 3 lots in Eddy County; 1 lot in Lincoln County; and 2 lots in Otero County. In Lea County spirochetes were recovered from 2 of 8 lots, in Roosevelt County from 1 of 5 lots, in Chaves County from 4 of 9 lots, and in Hidalgo County

from 1 of 2 lots. The presence of spirochetes, as indicated, is based on one test feeding on white mice.

The accompanying map shows the general areas in which *O. turicata* has been collected and the tick lots from which spirochetes were recovered.

DISCUSSION

In this survey, as a rule, only main highways were traveled. It was determined early that "borrow pits" along the sides of the road were

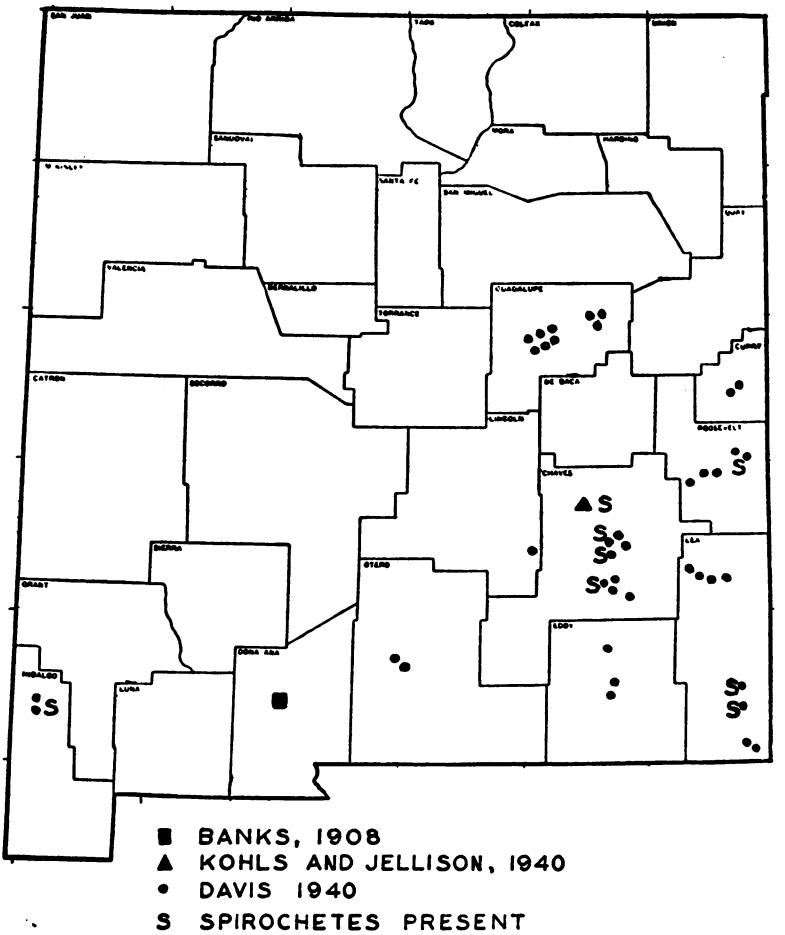

FIGURE 1.—*O. turicata* and relapsing fever spirochetes in New Mexico.

excellent indicators for the presence of ticks. The more easily excavated deposits of the caliche had been removed for road building, leaving the infiltrated calcareous material as mounds *in situ* or as banks bordering the pits. Under these mounds and banks were numerous burrows. The fecal pellets in and about the burrows

were evidence of the presence of several rodent species and birds. Most of the pellets were those of cottontail rabbits (*Sylvilagus* sp.). This type of habitat was encountered especially in Lea, Roosevelt, and Curry Counties along the eastern border of the State and in Guadalupe County.

Ticks were collected from a number of kangaroo rat mounds on the open mesa between Roswell and the mescalero ridge in Chaves County and in parts of Hidalgo and Guadalupe Counties. In Chaves County the rat species was *Dipodomys spectabilis baleyi*. The others were not determined. Although, except during the mating season, only one female rat, and later her young, are said to inhabit a mound, these mounds were extensive with spacious tunnels large enough for cottontail rabbits, and fecal pellets of this rodent were found in abundance. Burrows with as many as 14 openings were observed.

Three ticks were found in a prairie dog burrow and three beneath a rock.

It is generally agreed that cottontail rabbits do not make burrows of their own, but use any available hiding place. This consensus was substantiated by the different types of burrows which contained cottontail rabbit feces. Kangaroo rat mounds and prairie dog (*Cynomys* sp.) burrows have definite distinguishing characteristics. The small burrows noted were doubtless ground squirrel burrows but no ground squirrels were observed. From numerous records in the literature and our own observations, *O. turicata* seems quite cosmopolitan in host relations and has a marked anthropophilia.

Unfortunately, all ticks collected from the ranch on which the case of relapsing fever occurred died in transit to the laboratory. However, four positive lots were collected in the general area. A second case which appeared to be relapsing fever occurred in this county, but the attending physician made a diagnosis of tularemia with repeated relapses.

SUMMARY

In a rapid tick survey of 10 counties in southern and southeastern New Mexico, 41 lots with a total of 604 *Ornithodoros turicata* were collected. One entire lot died in transit to the laboratory; 539 ticks remained for testing. Eight lots representing 4 counties, Roosevelt, Chaves, Lea, and Hidalgo, were found to harbor relapsing fever spirochetes.

REFERENCE

Banks, Nathan: A revision of the Ixodoidea, or ticks, of the United States. Tech. Ser. No. 15, Bureau of Entomology, U. S. Department of Agriculture, 1908.

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

October 5–November 1, 1941

The accompanying table summarizes the prevalence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the PUBLIC HEALTH REPORTS under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4-week period ended November 1, 1941, the number reported for the corresponding period in 1940, and the median number for the years 1936–40.

DISEASES ABOVE MEDIAN PREVALENCE

Influenza.—The reported number of cases of influenza rose from approximately 3,300 during the preceding 4 weeks to 5,009 for the 4 weeks ended November 1. The number represented an increase of more than 50 percent over the 1940 incidence, which figure (3,285 cases) also represents the median incidence for the corresponding period in the years 1936–40. The highest incidence is still confined to the West South Central region, with minor increases over the normal seasonal incidence in the South Atlantic, Mountain, and Pacific regions. Of the total number of cases reported, 2,192 occurred in Texas, 806 in South Carolina, 465 in West Virginia, and 248 in Arizona; three-fourths of the total cases were reported from those four States. The rate of increase for the country as a whole was slightly higher than during preceding years, due wholly to the high incidence in the States mentioned, as in other regions of the country the incidence was below normal, some regions not reporting the increase that normally occurs at this season of the year.

Poliomyelitis.—The number of cases of poliomyelitis declined further during the 4 weeks ended November 1—1,320 cases reported as compared with 2,239 for the preceding 4 weeks. The number of cases was only about 75 percent of last year's figure, but it was almost 50 percent above the 1936–40 median number of cases for this period. While the incidence has declined in all sections of the country, the States in which the disease has been most prevalent continued to report a relatively high incidence. The West North Central, West South Central, Mountain, and Pacific regions were apparently unaffected by the recent epidemic-like wave of this disease. With the exception of 1940 the current incidence of poliomyelitis was the highest since 1931 when approximately 1,800 cases were reported for this period.

Number of reported cases of 9 communicable diseases in the United States during the 4-week period Oct. 5–Nov. 1, 1941, the number for the corresponding period in 1940, and the median number of cases reported for the corresponding period, 1936–40

Division	Current period	1940	5-year median	Current period	1940	5-year median	Current period	1940	5-year median
	Diphtheria			Influenza [1]			Measles [2]		
United States	2,480	1,850	3,507	5,009	3,285	3,285	5,194	6,083	5,410
New England	18	27	40	7	4	7	725	851	456
Middle Atlantic	132	138	241	42	31	73	862	2,307	740
East North Central	238	194	483	187	224	234	702	1,631	612
West North Central	117	128	182	54	39	117	352	265	381
South Atlantic	1,038	610	1,305	1,499	1,144	1,144	885	191	412
East South Central	355	256	507	117	136	268	282	190	155
West South Central	449	338	355	2,482	1,127	871	218	82	90
Mountain	57	53	95	395	456	272	536	258	476
Pacific	76	106	136	226	124	124	632	258	258
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States	117	106	168	1,320	1,789	902	7,318	7,928	9,939
New England	12	8	8	70	13	19	611	403	456
Middle Atlantic	23	9	30	432	92	92	1,078	1,265	1,635
East North Central	17	24	35	223	742	215	1,983	2,355	2,976
West North Central	9	11	12	83	463	170	792	963	1,312
South Atlantic	26	18	36	197	204	69	1,117	1,211	1,216
East South Central	15	19	28	195	58	58	750	663	663
West South Central	8	3	11	50	49	43	241	350	350
Mountain	1	7	7	17	65	40	257	232	396
Pacific	6	7	9	53	103	100	489	486	737
	Smallpox			Typhoid and paratyphoid fever			Whooping cough [2]		
United States	36	77	204	847	888	1,320	12,053	13,516	[3] 12,478
New England	0	0	0	24	25	25	926	1,041	1,041
Middle Atlantic	0	0	0	120	99	176	2,856	4,156	3,372
East North Central	13	36	36	95	109	186	3,931	3,656	3,656
West North Central	7	20	46	59	59	81	684	811	533
South Atlantic	0	0	1	225	190	221	1,194	1,250	1,130
East South Central	5	4	6	128	134	136	528	463	463
West South Central	7	9	9	119	164	271	387	583	332
Mountain	2	4	52	47	56	108	508	262	334
Pacific	2	4	19	30	52	67	1,039	1,294	714

[1] Mississippi, New York, and Pennsylvania excluded; New York City included.
[2] Mississippi excluded.
[3] Three-year (1938–40) median.

DISEASES BELOW MEDIAN PREVALENCE

Diphtheria.—For the 4 weeks ended November 1 there were 2,480 cases of diphtheria reported, as compared with 1,850, 3,219, and 4,262 cases for the corresponding period in 1940, 1939, and 1938, respectively. Significant excesses over last year were reported from the East North Central, South Atlantic, and South Central regions, but the West South Central region alone reported an excess over the 1936–40 average incidence for this period; the excess there amounted to about 20 percent. Compared with the 1936–40 median incidence, the number of cases in each region except the West South Central was relatively low.

Measles.—After maintaining a relatively high incidence for more than a year, the number of cases (5,174) of measles reported for the current period was only about 85 percent of the number reported for this period in 1940, and it was about 5 percent below the normal seasonal expectancy. While the median incidence for the country as a whole was slightly above the current number of cases, each region except the West North Central reported an increase of cases over the 1936–40 median incidence in the region, the greatest excesses occurring in the New England, South Atlantic, West South Central, and Pacific regions.

Meningococcus meningitis.—While the number of cases (117) of meningococcus meningitis was slightly higher than that recorded for the corresponding period in 1940, it was only about 70 percent of the average seasonal incidence (168 cases). Excesses over last year were reported from the North Atlantic, South Atlantic, and West South Central regions, but in all regions except the New England the incidence was below the average of preceding years.

Scarlet fever.—The incidence of scarlet fever was also relatively low, the number of cases (7,318) reported being the lowest on record for this period. Of the 9 geographic regions only 2, the New England and East South Central, reported an excess of cases over the average incidence for the corresponding period in the years 1936–40. For the country as a whole this disease has been on a decline since 1935; the number of cases occurring during the period in that year corresponding to the current one was approximately 15,700.

Smallpox.—The 36 cases of smallpox reported for the 4 weeks ended November 1 marked a new low level of this disease for this season of the year. The number was less than one-half of the number recorded in 1940 and less than 20 percent of the 1936–40 median incidence. The current incidence compares with approximately 1,700, 800, and 600 cases for the corresponding period in 1929, 1930, and 1931, respectively, and the average number of cases for this period in the years 1932–40 was approximately 230.

Typhoid fever.—Only a slight decline in the incidence of typhoid fever from last year's figure was reported for the current period, but the number of cases (847) was less than 60 percent of the normal seasonal incidence. In the New England and South Atlantic regions the incidence stood approximately at the expected seasonal level, but in all other regions the number of cases was relatively low.

Whooping cough.—This disease stood at about the normal seasonal level, the number of cases (12,053) reported for the current period being only about 400 below the 1938–40 median level. The incidence of whooping cough has been rather high during the current year, and for the first time this year the incidence for a 4-week period dropped below that for a corresponding period in 1940. All regions, however,

except the North Atlantic, reported more cases than might normally be expected, the greatest excesses being in the East North Central and Pacific regions.

MORTALITY, ALL CAUSES

The average mortality rate from all causes in large cities for the 4 weeks ended November 1, based on data received from the Bureau of the Census, was 10.7 per 1,000 inhabitants (annual basis), as compared with an average rate of 11.0 for the corresponding period in 1938–40.

DEATHS DURING WEEK ENDED NOVEMBER 8, 1941

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Nov. 8, 1941	Corresponding week, 1940
Data from 88 large cities of the United States:		
Total deaths	8,159	7,984
Average for 3 prior years	7,678	
Total deaths, first 45 weeks of year	375,772	376,895
Deaths per 1,000 population, first 45 weeks of year, annual rate	11.7	11.7
Deaths under 1 year of age	573	515
Average for 3 prior years	453	
Deaths under 1 year of age, first 45 weeks of year	23,807	22,585
Data from industrial insurance companies:		
Policies in force	64,617,631	64,863,128
Number of death claims	8,845	9,323
Death claims per 1,000 policies in force, annual rate	7.1	7.5
Death claims per 1,000 policies, first 45 weeks of year, annual rate	9.4	9.6

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED NOVEMBER 15, 1941

Summary

Of the 9 communicable diseases reported to the United States Public Health Service weekly by the State health officers and included in the following table, only influenza and poliomyelitis were above the 5-year (1936–40) median expectancy during the current week.

The incidence of poliomyelitis continued to decline, with 174 cases reported currently as compared with 191 cases for the preceding week and with the 5-year median of 161. The number of cases reported in Tennessee increased from 14 to 29, and slight increases were also recorded in Florida, Georgia, South Carolina, and North Carolina. The incidence declined in the Northern States. Only 2 States reported more than 12 cases—Tennessee and New York (the latter reported 28 cases, as compared with 39 last week). The total number of cases reported to date (first 46 weeks), 8,535, is below the numbers reported for the same period in 1940 (9,200) and in 1937 (9,187).

The number of reported cases of influenza increased slightly, from 2,308 to 2,372, of which Texas reported 1,085, South Carolina 276, Virginia 160, Oklahoma 141, and Arkansas 108.

Of 79 cases of endemic typhus fever, Georgia reported 35 and Texas 13. North Dakota reported 7 cases of infectious encephalitis during the week; California has reported 52 cases from August 3 to October 4.

A delayed report shows the occurrence of 1 case of psittacosis in San Bernardino County, Calif., during the week ended November 1.

The crude death rate for the current week for 88 large cities is 11.6 per 1,000 population, as compared with 11.4 for the preceding week and with 11.5 for the 3-year (1938–40) average for the corresponding week.

Telegraphic morbidity reports from State health officers for the week ended November 15, 1941, and comparison with corresponding week of 1940 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median 1936–40	Week ended		Median 1936–40	Week ended		Median 1936–40	Week ended		Median 1936–40
	Nov. 15 1941	Nov. 16 1940		Nov. 15 1941	Nov. 16 1940		Nov. 15 1941	Nov. 16 1940		Nov. 15 1941	Nov. 16 1940	
NEW ENG.												
Maine	0	1	2	-------	-------	1	92	200	28	1	0	0
New Hampshire	0	0	0	-------	-------	-------	3	4	4	0	0	0
Vermont	0	0	0	-------	-------	-------	3	9	9	0	0	0
Massachusetts	3	5	5	-------	-------	-------	101	219	177	8	3	2
Rhode Island	1	0	0	-------	-------	-------	6	2	2	0	0	0
Connecticut	0	0	1	-------	1	3	32	2	22	0	0	0
MID. ATL.												
New York [1]	8	17	24	[2] 5	[2] 11	[2] 11	124	357	149	3	2	3
New Jersey	7	12	13	10	-------	7	15	186	50	1	2	1
Pennsylvania	12	18	50	1	-------	-------	220	812	66	4	0	3
E. NO. CEN.												
Ohio	16	18	46	10	18	18	21	38	27	0	1	1
Indiana	27	11	21	52	4	4	17	22	18	1	0	0
Illinois	27	18	43	7	8	10	34	251	32	4	0	4
Michigan [3]	6	9	25	-------	11	1	117	368	78	0	3	1
Wisconsin	2	1	2	36	26	31	116	248	56	2	0	0
W. NO. CEN.												
Minnesota	1	4	7	-------	1	1	21	28	41	0	0	0
Iowa	4	7	4	2	1	1	18	41	17	0	0	0
Missouri	11	13	29	6	1	4	13	2	7	0	2	1
North Dakota	1	3	3	12	-------	4	57	4	4	0	0	0
South Dakota	0	1	1	-------	1	1	1	1	4	0	0	0
Nebraska	1	0	2	-------	-------	-------	2	2	2	0	0	0
Kansas	6	5	13	16	3	4	22	9	11	0	0	0
SO. ATL.												
Delaware	0	0	1	-------	-------	-------	0	0	0	0	0	0
Maryland [3]	17	2	14	9	1	5	40	6	6	0	0	0
Dist. of Col	1	1	5	1	-------	-------	1	1	1	0	0	0
Virginia [1]	35	29	60	160	148	89	86	55	37	1	2	3
West Virginia	8	12	15	26	7	13	182	24	23	0	0	0
North Carolina [1]	63	49	117	9	3	5	98	24	103	1	0	2
South Carolina [1]	26	18	18	276	306	306	3	9	6	0	0	1
Georgia [1]	44	31	29	53	33	31	8	12	9	0	0	0
Florida [1]	4	11	11	-------	2	3	8	3	4	0	0	1
E. SO. CEN.												
Kentucky	11	11	25	1	10	15	2	73	12	1	0	5
Tennessee [1]	24	13	34	26	39	39	20	25	9	0	0	2
Alabama [1]	24	27	33	70	43	55	8	23	6	0	4	4
Mississippi [1]	18	23	18	-------	-------	-------	-------	-------	-------	2	0	0
W. SO. CEN.												
Arkansas [4]	36	12	21	108	24	28	32	2	3	0	0	1
Louisiana [1]	9	10	17	16	9	9	0	1	1	0	0	1
Oklahoma	22	29	29	141	23	34	23	2	4	0	0	0
Texas [1]	75	36	46	1,085	229	229	49	41	15	0	0	1
MOUNTAIN												
Montana	3	6	2	1	-------	-------	9	0	22	0	0	0
Idaho	1	0	0	-------	-------	-------	18	0	7	0	0	0
Wyoming [4]	2	1	0	6	-------	-------	2	3	4	0	0	0
Colorado	22	5	7	31	4	4	110	22	22	0	0	0
New Mexico	1	0	4	1	1	1	8	11	7	0	0	0
Arizona	6	5	5	96	56	58	40	39	3	0	0	0
Utah [3]	0	0	0	8	6	5	23	3	13	0	0	0
Nevada	0	0	-------	-------	-------	-------	1	0	-------	0	0	-------
PACIFIC												
Washington	0	6	2	2	-------	-------	2	6	15	0	0	0
Oregon	5	4	3	7	12	18	34	14	14	0	0	1
California [1]	12	18	34	82	138	33	349	27	47	1	0	1
Total	602	502	953	2,372	1,180	1,180	2,191	3,231	2,703	30	19	36
46 weeks	13,905	13,575	23,718	582,009	177,864	160,713	845,420	245,260	276,130	1,798	1,497	2,589

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended November 15, 1941, and comparison with corresponding week of 1940 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median 1936–40	Week ended		Median 1936–40	Week ended		Median 1936–40	Week ended		Median 1936–40
	Nov. 15, 1941	Nov. 16, 1940		Nov. 15, 1941	Nov. 16, 1940		Nov. 15, 1941	Nov. 16, 1940		Nov. 15, 1941	Nov. 16, 1940	
NEW ENG.												
Maine	0	0	0	15	3	8	0	0	0	0	0	1
New Hampshire	3	0	0	9	9	7	0	0	0	0	0	0
Vermont	0	0	0	2	2	4	0	0	0	0	0	0
Massachusetts	1	1	1	156	123	105	0	0	0	1	1	1
Rhode Island	1	0	0	8	2	5	0	0	0	0	1	1
Connecticut	0	0	0	32	15	38	0	0	0	2	0	2
MID. ATL.												
New York [1]	28	6	7	208	187	249	0	0	0	6	22	8
New Jersey	6	0	2	88	76	85	0	0	0	3	4	4
Pennsylvania	8	8	6	163	189	324	0	0	0	9	15	19
E. NO. CEN.												
Ohio	8	23	7	149	210	249	0	0	1	8	11	11
Indiana	6	9	1	86	73	150	0	0	1	3	1	1
Illinois	12	21	5	168	250	287	0	8	2	2	2	13
Michigan [2]	5	21	5	178	156	287	0	3	4	1	3	4
Wisconsin	4	11	1	113	110	123	0	1	2	0	3	1
W. NO. CEN.												
Minnesota	2	11	2	46	64	101	1	2	4	0	1	1
Iowa	1	6	4	43	62	67	1	1	6	1	0	2
Missouri	0	3	3	62	62	103	1	0	2	2	1	5
North Dakota	2	0	0	16	8	35	0	1	10	0	1	1
South Dakota	0	0	0	13	13	34	0	0	2	0	0	1
Nebraska	0	2	2	13	17	25	0	0	0	6	0	1
Kansas	1	7	2	85	53	91	0	0	1	0	4	3
SO. ATL.												
Delaware	1	0	0	12	7	9	0	0	0	0	0	1
Maryland [2]	2	1	1	50	32	45	0	0	0	4	0	5
Dist. of Col	2	0	0	17	10	10	0	0	0	0	1	1
Virginia [1]	7	12	1	79	86	54	1	0	0	9	10	7
West Virginia	1	19	0	67	49	81	0	0	0	5	3	7
North Carolina [1]	5	2	1	83	89	89	0	0	0	3	2	2
South Carolina [1]	3	0	1	14	23	13	0	0	0	3	0	2
Georgia [1]	4	1	1	63	43	38	1	0	0	8	9	10
Florida [1]	4	1	1	4	2	2	0	0	0	2	8	3
E. SO. CEN.												
Kentucky	3	3	3	54	48	69	0	0	0	15	13	12
Tennessee [1]	29	4	1	122	117	71	1	10	1	4	8	5
Alabama [1]	4	0	1	63	42	31	0	0	0	4	7	5
Mississippi [1]	3	2	2	12	15	15	0	0	0	3	4	3
W. SO. CEN.												
Arkansas [4]	3	0	2	7	13	20	0	1	1	4	7	10
Louisiana [1]	1	3	1	2	10	17	0	0	0	11	3	7
Oklahoma	1	3	1	20	29	29	0	1	2	1	5	9
Texas [1]	2	3	3	75	45	51	0	5	1	7	9	14
MOUNTAIN												
Montana	1	0	0	29	10	32	0	0	2	0	0	2
Idaho	0	2	1	6	7	13	0	0	1	0	0	2
Wyoming [4]	1	6	0	9	8	8	0	0	1	3	0	0
Colorado	0	1	1	29	24	32	0	0	1	1	2	1
New Mexico	0	0	0	6	5	14	0	0	0	1	3	5
Arizona	1	0	0	6	6	6	0	1	0	0	0	1
Utah [3]	1	2	1	8	24	15	0	0	0	0	2	1
Nevada	0	0	------	1	0	-------	0	0	-------	0	0	-------
PACIFIC												
Washington	0	7	1	20	30	39	0	0	1	0	1	1
Oregon	5	3	1	6	11	24	0	10	8	0	3	3
California [1]	2	1	8	134	99	180	2	0	1	4	6	6
Total	174	205	161	2,651	2,568	3,613	8	44	61	136	176	242
46 weeks	8,535	9,200	6,793	109,986	138,396	164,148	1,264	2,176	9,062	7,828	8,911	13,346

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended November 15, 1941, and comparison with corresponding week of 1940—Continued

Division and State	Whooping cough	
	Week ended	
	Nov. 15, 1941	Nov. 16, 1940
NEW ENG.		
Maine	43	18
New Hampshire	44	0
Vermont	9	8
Massachusetts	158	165
Rhode Island	12	2
Connecticut	54	80
MID. ATL.		
New York [1]	466	465
New Jersey	224	188
Pennsylvania	----------	736
E. NO. CEN.		
Ohio	173	420
Indiana	39	20
Illinois	202	134
Michigan [2]	304	433
Wisconsin	244	188
W. NO. CEN.		
Minnesota	52	52
Iowa	15	21
Missouri	32	48
North Dakota	13	19
South Dakota	6	2
Nebraska	0	21
Kansas	79	49
SO. ATL.		
Delaware	9	46
Maryland [2]	28	83
Dist. of Col	21	3
Virginia [1]	101	91
West Virginia	60	15
North Carolina [1]	127	107
SO. ATL.—continued		
South Carolina [1]	32	39
Georgia [1]	21	10
Florida [1]	6	7
E. SO. CEN.		
Kentucky	52	68
Tennessee [1]	22	82
Alabama [1]	9	3
Mississippi [1]	----------	----------
W. SO. CEN.		
Arkansas [4]	11	11
Louisiana [1]	2	4
Oklahoma	23	10
Texas [1]	71	89
MOUNTAIN		
Montana	35	1
Idaho	5	6
Wyoming [4]	2	0
Colorado	81	38
New Mexico	20	9
Arizona	3	10
Utah [3]	29	25
Nevada	64	0
PACIFIC		
Washington	111	57
Oregon	18	24
California [1]	164	285
Total	3,296	4,192
46 weeks	187,618	146,871

[1] Typhus fever, week ended Nov. 15, 1941, 79 cases as follows: New York, 1; Virginia, 1; North Carolina, 2; South Carolina, 2; Georgia, 35; Florida, 3; Tennessee, 2; Alabama, 8; Mississippi, 6; Louisiana, 5; Texas, 13; California, 1.

[2] New York City only.

[3] Period ended earlier than Saturday.

[4] Rocky Mountain spotted fever, week ended Nov. 15, 1941, 3 cases, as follows: Arkansas, 1; Wyoming, 2

WEEKLY REPORTS FROM CITIES

City reports for week ended November 1, 1941

This table lists the reports from 134 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	----	0	0	2	8	0	1	1	1	21
New Hampshire:											
Concord	0	----	0	0	0	0	0	0	0	0	13
Manchester	0	----	0	0	2	9	0	0	0	0	21
Nashua	0	----	0	0	0	0	0	0	0	7	10
Vermont:											
Barre	0	----	----	0	----	0	0	----	0	0	----
Burlington	0	----	0	1	0	0	0	0	0	5	9
Rutland	0	----	0	0	1	0	0	0	0	0	9
Massachusetts:											
Boston	0	----	0	5	10	27	0	2	0	40	169
Fall River	2	----	0	0	0	11	0	0	0	0	29
Springfield	0	----	0	7	0	5	0	0	0	8	23
Worcester	0	----	0	0	5	9	0	1	0	12	49
Rhode Island:											
Pawtucket	0	----	----	1	----	1	0	----	0	0	----
Providence	1	----	0	8	4	3	0	1	0	28	53
Connecticut:											
Bridgeport	0	----	0	0	1	0	0	1	0	0	26
Hartford	0	----	0	0	5	3	0	1	0	4	52
New Haven	0	----	0	10	2	2	0	1	0	8	33
New York:											
Buffalo	0	----	1	1	8	14	0	5	0	5	153
New York	16	1	0	20	61	63	0	42	3	244	1,366
Rochester	1	----	0	0	2	1	0	1	0	2	72
Syracuse	1	----	0	0	1	0	0	0	0	18	37
New Jersey:											
Camden	0	----	0	0	3	4	0	1	0	5	31
Newark	0	2	0	0	5	15	0	1	1	51	84
Trenton	0	----	0	0	4	5	0	0	0	8	40
Pennsylvania:											
Philadelphia	2	1	1	2	17	25	0	20	2	35	440
Pittsburgh	5	1	2	1	6	17	0	11	1	34	145
Reading	0	----	0	2	0	0	0	0	0	1	15
Scranton	0	----	----	3	----	2	0	----	0	4	----
Ohio:											
Cincinnati	1	1	0	2	1	51	0	2	0	73	104
Cleveland	1	3	0	3	12	21	0	6	1	44	176
Columbus	0	1	1	2	3	7	0	4	0	7	97
Toledo	0	1	1	0	2	5	0	1	0	19	63
Indiana:											
Anderson	0	----	0	0	0	0	0	0	0	0	9
Fort Wayne	1	----	0	1	3	0	0	1	0	0	33
Indianapolis	3	----	0	0	5	12	0	4	0	12	104
Muncie	0	----	0	0	0	0	0	0	0	0	13
South Bend	0	----	0	0	0	0	0	0	0	0	22
Terre Haute	0	----	0	0	1	0	0	1	0	0	32
Illinois:											
Alton	0	----	0	0	1	0	0	0	0	0	7
Chicago	12	4	1	12	19	59	0	22	0	95	707
Elgin	0	2	0	0	0	0	0	0	0	5	6
Springfield	0	----	0	0	2	3	0	0	0	0	17
Michigan:											
Detroit	0	1	1	3	10	51	0	20	0	53	240
Flint	0	----	0	0	2	1	0	0	0	2	22
Wisconsin:											
Kenosha	0	----	0	0	0	3	0	0	0	3	7
Madison	0	----	0	0	0	2	0	0	0	5	10
Milwaukee	1	1	1	4	5	4	0	2	0	93	95
Racine	0	----	0	1	0	11	0	0	0	14	18
Superior	0	----	0	0	0	0	0	0	0	0	5
Minnesota:											
Duluth	0	----	0	0	1	2	0	0	0	4	18
Minneapolis	0	----	1	4	2	12	0	0	0	21	88
St. Paul	0	----	0	2	4	2	0	0	0	18	51
Iowa:											
Cedar Rapids	0	----	----	0	----	2	0	----	0	0	----
Davenport	2	----	----	0	----	1	0	----	0	0	----
Des Moines	1	----	0	1	0	2	0	0	0	1	35
Sioux City	1	----	----	0	----	0	0	----	0	0	----
Waterloo	1	----	----	0	----	2	0	----	0	0	----

City reports for week ended November 1, 1941—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Missouri:											
Kansas City	0	------	1	1	3	20	0	3	0	3	92
St. Joseph	1	------	0	1	4	3	0	0	0	0	23
St. Louis	0	------	0	1	9	18	0	4	1	4	234
North Dakota:											
Fargo	0	------	0	0	1	1	0	0	0	0	20
Grand Forks	0	------	------	0	------	1	0	------	0	0	------
Minot	0	------	0	4	0	0	0	0	0	0	6
South Dakota:											
Aberdeen	0	------	------	0	------	0	0	------	0	2	------
Sioux Falls	0	------	0	0	0	1	0	0	0	0	12
Nebraska:											
Lincoln	1	------	------	1	------	0	0	------	0	0	------
Omaha	0	------	0	2	4	0	0	1	0	0	44
Kansas:											
Lawrence	0	1	0	0	0	0	0	0	0	0	9
Topeka	0	------	0	1	0	2	0	0	0	6	8
Wichita	0	------	0	2	1	1	0	0	0	2	28
Delaware:											
Wilmington	1	------	0	0	1	4	0	0	0	1	23
Maryland:											
Baltimore	0	4	0	13	7	14	0	10	2	30	196
Cumberland	0	------	0	0	0	0	0	0	1	0	11
Frederick	0	------	0	0	1	0	0	0	0	0	4
Dist. of Col.:											
Washington	4	1	1	0	8	12	0	9	0	24	185
Virginia:											
Lynchburg	0	------	0	0	0	0	0	0	0	0	9
Norfolk	5	------	0	0	1	2	0	2	3	1	28
Richmond	3	------	1	0	3	3	0	2	0	0	53
Roanoke	0	------	0	0	0	1	0	0	0	1	14
West Virginia:											
Charleston	0	------	0	0	0	2	0	0	1	5	12
Huntington	3	------	------	0	------	0	0	------	0	0	------
Wheeling	0	------	0	4	1	4	0	1	0	0	12
North Carolina:											
Gastonia	4	------	------	0	------	0	0	------	0	0	------
Raleigh	0	------	0	0	0	0	0	0	1	2	16
Wilmington	0	------	0	1	2	0	0	1	0	1	17
Winston-Salem	3	------	0	17	0	1	0	0	0	0	15
South Carolina:											
Charleston	0	8	0	1	1	0	0	0	4	0	14
Florence	0	------	0	0	1	2	0	1	0	0	7
Greenville	1	------	0	0	0	0	0	0	0	0	14
Georgia:											
Atlanta	0	8	1	0	4	4	0	6	1	1	76
Brunswick	0	------	0	0	1	0	0	0	0	0	2
Savannah	1	------	0	0	2	2	0	0	0	0	33
Florida:											
Miami	0	------	0	1	1	0	0	1	0	2	39
St. Petersburg	0	------	0	0	1	1	0	0	0	3	17
Tampa	2	------	0	0	1	1	0	1	0	1	33
Kentucky:											
Ashland	0	------	0	0	0	0	0	1	1	2	4
Covington	0	------	0	0	0	3	0	3	0	0	11
Lexington	0	------	0	0	0	0	0	0	0	4	14
Louisville	0	1	0	0	2	20	0	1	1	36	74
Tennessee:											
Knoxville	2	------	1	0	0	3	0	1	0	0	29
Memphis	1	------	0	0	1	1	0	2	2	1	70
Nashville	2	------	2	1	2	4	0	4	0	15	35
Alabama:											
Birmingham	0	1	0	0	4	4	0	3	1	1	71
Mobile	1	------	0	0	1	0	0	1	0	0	14
Montgomery	0	------	------	0	------	0	0	------	0	0	------
Arkansas:											
Fort Smith	0	------	------	0	------	1	0	------	0	0	------
Little Rock	0	1	0	1	2	0	0	1	0	2	32
Louisiana:											
Lake Charles	0	------	0	0	0	0	0	0	0	0	1
New Orleans	1	5	0	0	4	1	0	2	2	6	94
Shreveport	1	------	0	0	3	0	0	1	0	0	43
Oklahoma:											
Oklahoma City	0	8	0	0	2	4	0	0	0	0	44
Tulsa	1	------	0	6	1	1	0	2	0	0	19

City reports for week ended November 1, 1941—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Texas:											
Dallas	8	1	1	5	3	5	0	0	1	8	48
Fort Worth	6	------	0	0	2	1	0	0	0	0	36
Galveston	0	------	0	0	0	0	0	1	0	0	11
Houston	2	------	0	0	5	1	0	6	0	3	91
San Antonio	0	4	3	1	5	4	0	6	0	0	81
Montana:											
Billings	0	------	0	0	1	1	0	0	0	0	10
Great Falls	0	------	0	7	1	3	0	0	0	3	7
Helena	0	------	0	0	0	0	0	0	0	0	2
Missoula	0	1	0	0	0	0	0	0	0	0	12
Colorado:											
Colorado Springs	0	------	0	0	0	3	0	1	0	0	9
Denver	2	9	0	5	4	3	0	0	0	24	86
Pueblo	0	------	0	20	1	1	0	0	0	0	15
New Mexico:											
Albuquerque	0	------	0	0	0	0	0	1	0	0	7
Arizona:											
Phoenix	0	16	--------	1	-------	0	0	-------	0	4	--------
Utah:											
Salt Lake City	0	------	0	3	2	0	0	0	0	9	26
Washington:											
Seattle	0	------	1	0	4	2	0	2	0	19	98
Spokane	0	------	0	0	2	6	0	0	0	12	32
Tacoma	0	------	0	0	0	2	0	1	0	4	28
Oregon:											
Portland	0	4	0	1	0	2	0	0	0	3	90
Salem	0	------	--------	0	-------	0		------	0	0	--------
California:											
Los Angeles	3	17	0	22	3	0	0	13	0	23	341
Sacramento	1	------	0	0	3	1	0	0	0	0	33
San Francisco	0	3	0	3	5	6	0	3	1	15	172

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Delaware:			
Boston	0	0	3	Wilmington	0	0	4
New York:				Maryland:			
Buffalo	0	0	1	Baltimore	0	0	1
New York	1	0	23	District of Columbia:			
Rochester	0	0	4	Washington	0	0	2
Syracuse	0	0	4	Virginia:			
New Jersey:				Lynchburg	0	0	1
Newark	0	0	2	Norfolk	0	0	1
Pennsylvania:				South Carolina:			
Philadelphia	0	0	5	Charleston	0	0	1
Pittsburgh	1	0	1	Georgia:			
Ohio:				Atlanta	0	0	1
Cincinnati	1	0	4	Tennessee:			
Cleveland	0	0	3	Nashville	0	0	8
Columbus	0	0	1	Alabama:			
Toledo	0	0	2	Birmingham	0	0	4
Illinois:				Mobile	0	0	1
Chicago	0	0	4	Utah:			
Michigan:				Salt Lake City	0	0	1
Detroit	0	0	3	Washington:			
Minnesota:				Seattle	1	0	0
Duluth	0	0	2	Oregon:			
Minneapolis	0	0	2	Portland	0	0	1
Missouri:				California:			
St. Joseph	1	0	0	Los Angeles	0	0	1
St. Louis	0	0	1				

Dengue.—Cases: Charleston, S. C., 2.
Encephalitis, epidemic or lethargic.—Cases: Nashua, 1; New York, 1; Minneapolis, 2; Sacramento, 1. Deaths: New York, 1; Birmingham, 1.
Pellagra.—Cases: Savannah, 2; Miami, 1; Birmingham, 2; Phoenix, 5.
Typhus fever.—Cases: Winston-Salem, 1; Atlanta, 5; Savannah, 2; Tampa, 1; New Orleans, 5.

Rates (annual basis) per 100,000 population for a group of 88 selected cities (population, 1940, 33,738,690)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases
		Cases	Deaths							
Week ended Nov. 1, 1941	12.98	12.21	3.09	31.22	48.84	91.03	0.00	36.32	4.17	180.67
Average for week, 1936-40	23.74	13.12	4.37	81.85	64.98	109.81	.62	49.36	5.78	159.33

TERRITORIES AND POSSESSIONS

VIRGIN ISLANDS OF THE UNITED STATES

Notifiable diseases—July–September 1941.—During the months of July, August, and September 1941, cases of certain notifiable diseases were reported in the Virgin Islands as follows:

Disease	July	August	September	Disease	July	August	September
Chickenpox			15	Malaria	2	4	
Dengue	31	17	2	Pellagra		1	
Filariasis	6	8	6	Pneumonia (all forms)		4	1
Gonorrhea	15	31	21	Syphilis	29	35	34
Hookworm disease	4	2	6	Tuberculosis	2	1	1

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended October 11, 1941.—During the week ended October 11, 1941, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		1	1	2	7	1		1	3	16
Chickenpox		28		56	99	58	35		51	327
Diphtheria		15	1	21	3	3	22		1	66
Dysentery				35	12					47
Influenza		10				2			20	32
Lethargic encephalitis					1	1	[1] 18			20
Measles				253	9		4	4	6	276
Mumps		1		124	58	18	17	2	11	231
Pneumonia		1			3		1		2	7
Poliomyelitis			12	3	7	13	3		3	41
Scarlet fever		17	4	98	116	11	3	13	13	275
Smallpox							1			1
Tuberculosis	2	4	14	93	43	42		1		199
Typhoid and paratyphoid fever		1		39	6		3	3		52
Whooping cough			3	131	99	1	12	2	9	257

[1] Encephalomyelitis.

CUBA

Provinces—Notifiable diseases—4 weeks ended October 11, 1941.—During the 4 weeks ended October 11, 1941, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana[1]	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	2	1	1	9	1	9	23
Chickenpox		2				11	13
Diphtheria	1	13	10	1		3	28
Hookworm disease				3			3
Leprosy	2	13				2	17
Malaria	64	9	1	36	2	45	157
Measles		15	4	1			20
Poliomyelitis		1					1
Scarlet fever		1					1
Trachoma				1			1
Tuberculosis	15	78	17	50	7	35	202
Typhoid fever	13	44	13	55	14	27	166
Whooping cough	1					1	2

[1] Includes the city of Habana.

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-named diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday of each month.

Yellow Fever

British East Africa—Uganda.—According to a report dated September 9, 1941, 1 case of yellow fever occurred in the western part of Uganda, British East Africa. All precautionary measures have been taken.

Sudan (French)—Kindia.—On October 31, 1941, 3 fatal cases of yellow fever were reported in Kindia, French Sudan.

* * *

COURT DECISION ON PUBLIC HEALTH

Operation of city sewage disposal plant not enjoined.—(Texas Court of Civil Appeals; *Mitchell et al.* v. *City of Temple et al.*, 152 S.W.2d 1116; decided June 11, 1941, rehearing denied July 2, 1941.) A suit was brought against the city of Temple and certain of its officers to abate, by injunction, and as a nuisance, the operation of the city's sewage disposal plant. The suit was for injunction only and not for damages. It was alleged that the plant and the sewer pipe leading from the city into it constituted a nuisance in that (1) obnoxious and repulsive odors, permitted to escape from the plant, came into the houses of the plaintiffs, and (2) because of leaks in joints of the sewer line, sewage was permitted to escape therefrom and to seep into the wells of some of the plaintiffs, thus rendering the water unfit for use, and, in addition, to seep into the nearby ravines and cause the breeding and collection of mosquitoes and flies and obnoxious odors.

The trial court denied a temporary injunction and, on appeal to the court of civil appeals, the plaintiffs in the main contended that, under the evidence adduced by them, they were entitled to the injunction prayed for to abate such nuisance as a matter of law.

The appellate court said that the granting of a temporary injunction was vested largely in the discretion of the trial court and that in the instant case the evidence was conflicting both as to the nature and extent of the odors from the plant and as to whether or not whatever leakage or seepage there might originally have been at the joints in the sewer line had been corrected and no longer existed. It was stated to be now well settled that, on the issue of a temporary injunction in such cases, the trial court was entitled to take into consideration the question of comparative injury or "balancing of the equities"

and that, if granting the injunctive relief would work a greater hardship and injury upon the public than would result to the plaintiff by denying the relief, the court was clearly authorized to deny it. "The general rule", said the court, "seems to be that if public necessity, public health and convenience outweigh any resulting private injury, or if granting the writ will cause great harm to the public, the writ will be refused." In affirming the judgment of the trial court the appellate court said that, even if the testimony of the plaintiffs were taken as true and without contradiction, it was manifest that a much greater injury would be inflicted upon the people of the city of Temple, shown to have a population of 15,000, by completely enjoining the operation of its sewage disposal plant than would result to the plaintiffs from a refusal to enjoin the plant's operation. "They [the plaintiffs] undoubtedly have an adequate remedy at law by way of damages."

×