Public Health Reports

Vol. 57 • NOVEMBER 27, 1942 • *No. 48*

DISTRIBUTION OF HEALTH SERVICES IN THE STRUCTURE OF STATE GOVERNMENT*

CHAPTER VII—MATERNITY-CHILD HEALTH ACTIVITIES BY STATE AGENCIES

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

All States now recognize in varying degrees the requirements of mothers and children for health and related welfare services. Accordingly, provisions of broad health programs have been focused particularly upon these population groups. In addition, certain other measures designed especially for mothers and children have been initiated to supplement the more general health services.

The extent to which these latter purposes have been accomplished and the agencies through which the services are administered form the central theme of this article, which constitutes chapter VII of Public Health Bulletin No. 184—Third Edition. The present revision, being published serially in the Public Health Reports, is more comprehensive than its predecessors.[1] Besides the activities of

*From the States Relations Division. This is the seventh chapter of the third edition of Public Health Bulletin No. 184. Previous chapters are:

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). Reprint No. 2306.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government—Chapter II. Communicable disease control by State agencies. Pub. Health Rep., 56: 2233 (November 21, 1941). Reprint No. 2334.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government—Chapter III. Tuberculosis control by State agencies. Pub. Health Rep., 57: 65 (January 16, 1942). Reprint No. 2348.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government—Chapter IV. Venereal disease control by State agencies. Pub. Health Rep., 57: 553 (April 17, 1942). Reprint No. 2369.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government—Chapter V. Sanitation by State agencies. Pub. Health Rep., 57: 885 (June 12, 1942) and 917 (June 19, 1942). Reprint No. 2386.

Mountin, Joseph W., and Flook, Evelyn: Distribution of health services in the structure of State government—Chapter VI. Medical and dental care by State agencies. Pub. Health Rep., 57: 1195 (August 14, 1942) and 57:1235 (August 21, 1942). Reprint No. 2395.

Succeeding chapters will be published in subsequent issues of the Public Health Reports.

[1] 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. First edition, April 1929.

State health departments, it describes for the survey year (1940) the functions of all departments of State government which contribute to group or individual health by any one or any combination of the following means: Regulation, promotion, education, supervision, consultation, financial aid, or direct service. In this chapter it is proposed to picture activities of all official units of State governments for the advancement of maternity and child health. Briefly, such activities feature promotion of local maternity-child health facilities; postgraduate education of nurses and physicians in improved obstetric and pediatric techniques; provision of consultation service to practicing physicians; education of the laity in prenatal and child hygiene; direct operation of or extension of financial aid to prenatal and well-child clinics; provision of medical, dental, nursing, and hospital care during pregnancy, delivery, and the postpartum period, of medical, dental, nursing, and hospital care for children, and of special facilities for care of prematurely born infants; control of midwife practices; supervision of maternity hospitals and child-caring institutions; periodic examination of school children; and health instruction of school teachers and children.

The present discussion is built around these and other services set up specifically to meet the health needs of mothers and children. Services for crippled children are omitted from this chapter, however, and handled elsewhere [2] since medical care is the predominant element in such services, whereas preventive and health promotional measures are the chief constituents among activities covered herein. It must be borne in mind that many general health services vitally affect the health of mothers and children and actually furnish a framework for programs organized specifically for these selected population groups. Outstandingly significant are laboratory diagnosis, generalized public health nursing, public health education in its broader aspects, dentistry, general medical care, mental hygiene, sanitation—particularly fly extermination and supervision of milk supplies, and the control of general communicable diseases, tuberculosis, and the venereal diseases. All of these activities, which have an important bearing upon the health of mothers and children yet are not designed for them exclusively, have been, or will be, accorded separate treatment in other chapters.[3] Only State maternity and child health programs having a specialized content of their own are subject to analysis in the present report.

Neither services of local official health agencies nor those of voluntary organizations are included. Activities of Federal agencies, likewise, are without the range of the study. Consequently, reference to Federal participation in maternity and child hygiene would have no

[1] See text footnote* (chapter VI).
[2] See text footnote*.

place in this article, which, as already mentioned, is limited to consideration of State health services, were it not for the fact that State efforts have been enlarged appreciably as a result of Federal financial aid. Under authority of title V of the Social Security Act, enacted in 1935 and amended in 1939, an annual Federal appropriation is made for grants to States in order that health services to mothers and children might be extended and improved, especially in rural areas and in areas suffering from severe economic distress.[4] The United States Children's Bureau is charged with the administration of these grants-in-aid. Apportionment of assistance is based on live births and financial need plus a flat, uniform allotment to each State. A State's eligibility for Federal aid is dependent also upon payment of part of the costs of approved plans from funds appropriated by the State or its local subdivisions.[4] On the whole, this Federal assistance has been a substantial factor in the extension of State maternity services to cover the prenatal, delivery, and postnatal periods and in the further development of child health activities which now benefit preschool and school children as well as infants.

AGENCIES THAT PARTICIPATE IN ACTIVITIES FOR MATERNITY AND CHILD HEALTH

To a large extent, State activities in the interest of maternity and child health are now centered within five departments of State government. Without exception, the health department is the particular unit which is primarily concerned with measures for improving the health of mothers and children. (See table 1.) In all but six States, the department of education collaborates with the health department insofar as the health of school children is concerned. Services of participating welfare departments, on the other hand, are concentrated upon approval and supervision of maternity hospitals, child-boarding homes, child-caring institutions, and/or child-placing agencies. Departments of labor commonly prescribe conditions for employment of women and children and occasionally pass upon structural details of school buildings which affect the health of children. State university hospitals, 20 of which are listed, afford prenatal, obstetrical, and/or pediatric care through both their in-patient and out-patient departments.

Other governmental units that function less frequently in some phase of the State maternity-child health programs are licensing departments, boards, or commissions and a miscellaneous group which

[4] For the terms under which Federal funds for maternity-child health services are allotted, see secs. 502 and 504 of the Social Security Act.

The procedure for making allotments and providing for payments to the States is described in Children's Bureau Publications No. 253, Grants to States for Maternity and Child Welfare under the Social Security Act of 1935 and the Social Security Act Amendments of 1939 (Washington, 1940), No. 254, Federal and State Cooperation in Maternity and Child-Welfare Services under the Social Security Act (Washington, 1939), and No. 259, Maternal and Child Health Services under the Social Security Act; Development of the Program, 1936-39 (Washington, 1941). Children's Bureau, U. S. Department of Labor.

TABLE 1.—*Official State agencies participating in activities for maternity and child health* in 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	Education	Department of industrial relations, department or commission of labor, department of labor and industry, industrial commission, etc.	State university or college	Department of registration and education, committee on licensure or independent licensing and examining boards	Other
Alabama	X	X	X	X			
Arizona	X		X	X			
Arkansas	X	X	X	X	X		
California	X	X	X	X	X	X	
Colorado	X	X		X	X	X	
Connecticut	X	X	X	X			
Delaware	X		X	X			
District of Columbia	X		X			X	X[a]
Florida	X		X	X			
Georgia	X	X	X	X			
Idaho[b]	X	X	X	X			
Illinois	X	X		X	X	X	
Indiana	X	X	X	X	X		
Iowa	X	X	X	X	X		
Kansas	X	X	X	X	X		X
Kentucky	X		X	X			
Louisiana	X	X	X	X		X	X[c]
Maine[b]	X	X	X	X			
Maryland	X		X	X	X		
Massachusetts	X	X	X	X			
Michigan	X	X	X	X	X		
Minnesota	X	X	X	X	X	X	
Mississippi	X		X	X			X
Missouri	X	X	X	X	X		
Montana	X	X		X			
Nebraska	X			X	X		X
Nevada	X		X	X			
New Hampshire	X	X	X	X			
New Jersey	X	X	X	X		X	
New Mexico	X	X	X	X			X
New York	X	X	X	X			
North Carolina	X	X	X	X			
North Dakota	X	X	X	X			
Ohio	X	X	X	X	X	X	
Oklahoma	X		X	X	X		
Oregon	X		X	X	X		
Pennsylvania	X	X	X	X	X		X
Rhode Island	X	X	X	X			X
South Carolina	X			X			
South Dakota	X	X	X	X			
Tennessee	X			X			
Texas	X	X	X	X	X		
Utah	X		X	X		X	
Vermont	X	X	X	X			
Virginia	X	X	X	X	X[a]		
Washington	X	X	X	X			
West Virginia	X	X	X	X			X
Wisconsin	X	X	X	X	X	X	
Wyoming	X		X	X		X	
Alaska	X	X	X				X
Hawaii	X	X	X		X		
Puerto Rico	X		X	X			X
Virgin Islands	X		X			X	X

*Child health activities include those for infant, preschool, and school groups.

**Any differences between information presented in this table and corresponding entries in table 1, chapter 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] Two agencies of this classification.

[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).

[c] Three independent hospital boards administering five separate institutions.

includes a State architect, art commission, highway engineer, minimum wage and industrial safety board, State legislature, State eleemosynary board, board of commissioners, two boards of control, two governors, and several independent State hospitals. Independent State hospitals and similar establishments administered by a board of control or eleemosynary board are likely to participate through operation of prenatal clinics in their out-patient departments and acceptance of maternity cases for delivery service. Licensing departments, boards, or commissions attempt to restrict, to some extent at least, the number of untrained birth attendants who practice as midwives. Approval of construction plans for school buildings is the manner by which State architects, highway engineers, and art commissions contribute to child health, while the board of district commissioners and the governors recorded in table 1 function through participating in the formulation of rules and regulations significant to the health of mothers and children. In one State, the legislature makes direct appropriations to several private hospitals as reimbursement for the free delivery service rendered by those institutions.

CONTENT OF STATE MATERNITY-CHILD HEALTH PROGRAMS

In a discussion devoted to the program content and methods of administering State maternity-child health activities, the reader would soon become lost in detail were it not for the possibility of classifying the various approaches to the problem under several broad functional categories. Consequently, table 2 was organized for concise presentation of the vast body of subject matter which describes the manner in which each agency of State government operates with respect to any health problem. The functions discharged, it will be recalled, may be described as regulatory authority, promotional and educational activities, supervision and consultation, financial aid, and direct operation of service facilities. Subitems of the tabulation reveal the particular means by which the several approaches apply to maternity and child health. Because for some maternity and child health services it is difficult to differentiate between direct State operation and extension of financial aid to activities administered locally, the functional classifications "distributes financial aid" and "operates a direct service program" have been merged in this report under the heading "provides personnel or financial assistance for local service."

Equal stress is not placed on all types of activities by the agencies performing the service; consequently, the discussion which follows will not accord the same amount of consideration to all items listed. Neither will amplification of significant activities always follow the same order in which the respective functions are recorded. Although

the various types of direct and financially aided service have been categorized in table 2 as *maternity health, infant and preschool health,* and *school health,* the lines of demarcation may be less noticeable in discussion because of the overlapping and interweaving of the several branches of service. For instance, reduction of infant mortality rates depends in part upon lowering the number of premature births, birth injuries, and the like. These, in turn, will be diminished by more expectant mothers receiving adequate care throughout the complete maternity cycle. Moreover, because in many instances there is parallel organization of the two branches of service, much repetition may be avoided by merging the description thereof. Finally, a more coherent picture sometimes results from consecutively featuring all aspects of a single branch of activity than from recurrent consideration of that activity as it relates to each of the major functions. Health instruction of school children, for example, is such an important element of the complete school health program that it can be discussed more effectively in conjunction with school examinations than as part of the broader educational activities. Likewise, separate treatment of the licensure, supervision, and instruction of midwives (involving regulation, education, supervision, and direct service) would necessitate discussion of such length that attention to midwifery would appear out of all proportion to the actual weight given this phase of State maternity and child health programs.

According to table 2, which demonstrates the manner whereby each agency of State government functions with respect to maternity and child health, most State [5] health departments give special emphasis to the establishment and maintenance of local facilities equipped to render complete service during pregnancy, delivery, infancy, the preschool period, and the school age. The exact manifestations of such efforts vary from State to State, however, depending upon the extent to which promotion of local endeavors rests on advice, supervision, or financial aid from the State agency. Monetary grants, be it said, may be made either for specific clinic services or for total or partial payment of salaries to local public health personnel.

In twenty-odd States departments of education are concerned with promotion of the physical examination of school children. Occasionally, as in Indiana and Virginia, the department of welfare as well as the department of health functions in a promotional fashion for the establishment of local infant and preschool health facilities.

State departments of health, education, and welfare which operate in a supervisory and advisory capacity are, for the most part, the same

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

TABLE 2.—*Department of State government* responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1, 2[b], 3[c], 4	1, 3[c], 4	1, 3[c], 4	1, 2[d], 3[c], 4	1, 4	1, 2[d], 3[c], 4	1, 3[c], 4	1, 3[c], 7
Promotes local maternity-child health programs	1, 3	1	1, 3[c]	1, 3[c]	1	1[b], 3[c]	1	------
Conducts educational programs for:								
The general public	1, 3	1	1, 3	1	1	1	1	1
Local physicians	1	1	1	1	1	1	1[c]	------
Public health nurses	1	1	1	1	1	1	1	1
Private duty nurses	------	------	------	------	------	1	------	------
Midwives	1	------	1	------	------	1	1	------
Teachers and/or student teachers	3	1	3	1	1	1, 3	------	1, 3
School children	3	1, 3	1, 3	1, 3	------	3	3	1, 3
Supervises and/or provides consultation service to local organizations	1	1	1, 3[c]	1, 3[c]	1	1[b], 3[c]	1	------
Provides personnel or financial assistance for local maternity health services:								
Prenatal and/or postnatal clinics	1	1	1	1, 5	1, 5	------	1	1
Prenatal and/or postnatal home nursing service	1	1	1	1	1	1	1	1
Free delivery service—								
Hospital	1[k], 2[l]	1	2, 5	5	1[k], 2[l], 5	2[l]	------	1
Home—								
Nursing	1[k]	------	------	1	1[k]	1[k]	------	------
Medical	1[k], 2[l]	------	------	------	1[k], 2[l]	2[l]	------	------
Free incubator service	------	------	5	1	1[k]	------	------	1
Free obstetrical consultation service	1	1	1	1	1	1	------	------
Maternity demonstration projects in selected areas	1	------	------	------	1	1	------	------
Additional service not covered in this classification	------	------	------	------	------	1	------	1
Engages in following activities from the State level:								
Follow-up studies of reports of maternity deaths	1	1	1	1	------	1	1	1
Licensure of maternity hospitals or homes	2	------	------	1	1	1	------	1
Licensure or registration of midwives	1	1	1	6	6	1	1	6
Supervision of midwives	1	------	------	------	------	1	1	------
Provides personnel or financial assistance for local infant and preschool health services:								
Clinics for infants and/or preschool children	1	1	1	1, 5	1	1	1	1
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1	1	1	1
Free pediatric consultation service	1	------	------	1	1	1	------	------
Engages in following activities from the State level:								
Special studies of infant mortality records	1	1	1	1	1	1	1	1
Licensure and/or approval of child-caring institutions	2	------	------	2	------	2	------	1
Provides personnel or financial assistance for local school health services:								
Physical examination of school children	1[n], 3[k]	1[n]	1[n]	1[n]	1[n]	3[k]	1	1
Follow-up nursing service to promote and help arrange for correction of defects	1	1	1	1	1	1	1	1
Engages in following activities from the State level:								
Special studies of health problems of school children	1	------	1	1	1[k]	1, 3[k]	1	1
Approval of construction plans of school buildings	3	------	1	1, 3	------	1, 3	1, 3	1, 3

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1,3[c], 4	1, 2[d], 3[c], 4	1, 2[d], 3[c], 4	1, 2[b], 4, 6[c]	1, 2[b], 3[c], 4, 5[c]	1, 2[d] 3[c], 4	1[f], 2[b], 3[c], 4, 5[b], 7	1, 3[c], 4
Promotes local maternity-child health programs	1, 3[c]	1, 3[c]	1	1	1, 2[d], 3[c]	1	1, 3[c]	1[b]
Conducts educational programs for:								
The general public	1	1	1	1	1	1	1	1
Local physicians	1	1	1	1	1	1	1	
Public health nurses	1	1	1	1	1	1	1	1
Private duty nurses	1		1	1	1	1		
Midwives	1	1			1		1	1
Teachers and/or student teachers	1, 3	1	1	1	1	1, 3	1, 3	3
School children		1, 3	3[i]		1, 3	3	3	3
Supervises and/or provides consultation service to local organizations	1, 3[c]	1, 3[c]	1	1	1, 2[d]	1, 3[c]	1, 3[c]	1
Provides personnel or financial assistance for local maternity health services:								
Prenatal and/or postnatal clinics	1	1	1	5	1	1[k]	1, 5	1
Prenatal and/or postnatal home nursing service	1	1	1	1	1	1	1, 5	1
Free delivery service—								
Hospital				2[l], 5	5	1, 5	2[l], 5	
Home—								
Nursing	1	1[k]	1	1[k]	1[k]	1[k]	5	1[k]
Medical	1[k]			2[l]		1[k], 2[l]	2[l], 5	
Free incubator service				1	1	1	1	1[k]
Free obstetrical consultation service	1	1		1	1	1		
Maternity demonstration projects in selected areas	1	1		1	1	1	1	
Additional service not covered in this classification				1				1
Engages in following activities from the State level:								
Follow-up studies of reports of maternity deaths	1	1	1		1	1	1	1
Licensure of maternity hospitals or homes			2	1	2	1	1	
Licensure or registration of midwives	1	1		6				1
Supervision of midwives	1	1			1		1	
Provides personnel or financial assistance for local infant and preschool health services:								
Clinics for infants and/or preschool children	1	1		1, 5	1	1[k]	1, 5	1
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1	1	1	1
Free pediatric consultation service	1	1		1		1		1
Engages in following activities from the State level:								
Special studies of infant mortality records	1[k]	1	1	1[k]	1	1		1
Licensure and/or approval of child-caring institutions				2	2	2		
Provides as a State service or assists local communities in financing the following services for school health:								
Physical examination of school children	1	1	1[n]	1[k]	1[n]	1[n]	1[k,n]	1
Follow-up nursing service to promote and help arrange for correction of defects	1	1	1	1	1	1	1	1
Engages in following activities from the State level:								
Special studies of health problems of school children	1	1		1	1, 5	1	1	1
Approval of construction plans of school buildings	3	1, 3	1, 3	1	1	1[k]	7	3

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1, 3[c], 4	1, 2[d], 3[c], 4	1, 3[c], 4	1, 2[d], 3[c], 4	1[b], 2[b], 3[c], 4	1, 2[b], 3[c], 4, 5[c]	1, 3[c], 4	1, 2[b], 3[c], 4
Promotes local maternity-child health programs	1	1, 3[c]	1	1	1, 3[c]	1	1	1, 3[c]
Conducts educational programs for:								
The general public	1, 3	1	1	1	1	1	1	1
Local physicians	1	1	1	1	1	1	1	1
Public health nurses	1	1	1	1	1	1	1	1
Private duty nurses				1				
Midwives	1		1			1	1	1[i]
Teachers and/or student teachers	3	3	1	1	1, 3	3	1	1, 3
School children	3	3	1	1, 3		3	1	3
Supervises and/or provides consultation service to local organizations	1	1, 3[c]	1	1	1, 3[c]	1, 3[c]	1	1, 3[c]
Provides personnel or financial assistance for local maternity health services:								
Prenatal and/or postnatal clinics	1	1[k]	1, 5	1	1, 5	5	1	
Prenatal and/or postnatal home nursing service	1	1	1	1	1	1	1	1
Free delivery service—								
Hospital	7[m]	1, 2[l]	5	2	5	5	7	5
Home—								
Nursing	1[k]	1	1[k]	1	1[k]	1		
Medical	1[k], 2[l]	1, 2[l]	1, 5		1[k]	1, 2[l]		
Free incubator service	1[k]	1	1		1	1[k]		
Free obstetrical consultation service	1	1	1	1	1	1	1	
Maternity demonstration projects in selected areas	1					1		
Additional service not covered in this classification	1			1				
Engages in following activities from the State level:								
Follow-up studies of reports of maternity deaths		1	1	1	1	1	1	1
Licensure of maternity hospitals or homes		1		2	2	2		2
Licensure or registration of midwives	6		1			6	1	1
Supervision of midwives	1					1	1	1[i]
Provides personnel or financial assistance for local infant and preschool health services:								
Clinics for infants and/or preschool children	1	1	1	1	1, 5	5	1	1
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1	1	1	1
Free pediatric consultation service		1	1	1	1	1		1
Engages in following activities from the State level:								
Special studies of infant mortality records		1	1	1[k]	1	1		1
Licensure and/or approval of child-caring institutions		2		2	2	2		2
Provides personnel or financial assistance for local school health services:								
Physical examination of school children			1[n]	1, 3	1[n]		1[n]	1
Follow-up nursing service to promote and help arrange for correction of defects	1		1	1	1	1	1	1
Engages in following activities from the State level:								
Special studies of health problems of school children	1	1	1	1	1	1		1
Approval of construction plans of school buildings	3	1, 3	3		3	1	1, 3	3

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1, 4	1, 4, 7[e]	1, 3[c], 4	1, 2[d], 3[c], 4	1[b], 3[c], 4	1, 3[c], 4	1[b], 2[d], 3[c], 4	1, 2[b], 3[c], 4
Promotes local maternity-child health programs	1	1	1	1[b], 3[c]	1[b], 3[c]	1	1[b], 3[c]	1
Conducts educational programs for:								
The general public	1	1	1	1	1	1	1, 3	1
Local physicians	1	1	1	1	1	1	1[c]	1
Public health nurses	1	1	1	1	1	1	1	1
Private duty nurses	1					1	1	1
Midwives			1		1	1	1	1
Teachers and/or student teachers	1		1	3	3	3	3	1, 3
School children	1		3	3	3	3	3	1, 3
Supervises and/or provides consultation service to local organizations	1	1	1	1[b], 3[c]	1[b], 3[c]	1	1, 3[c]	1
Provides personnel or financial assistance for local maternity health services:								
Prenatal and/or postnatal clinics		1[k], 5	1	1	1		1	1
Prenatal and/or postnatal home nursing service	1	1	1	1	1	1	1	1
Free delivery service—								
Hospital	2[l]	5	1		2[l]	1, 2[l], 7	2[l]	
Home—								
Nursing	1	5	1	1[k]	1, 2[l]	1	1	1[k]
Medical	2[l]	5	1		2[l]	1, 2[l]	2[l]	1[k]
Free incubator service	1[l]	1	1	1	1		1	
Free obstetrical consultation service	1	1		1	1	1		1
Maternity demonstration projects in selected areas		1				1	1	1
Additional service not covered in this classification				1			1	
Engages in following activities from the State level:								
Follow-up studies of reports of maternity deaths	1	1	1	1	1		1	1
Licensure of maternity hospitals or homes		7		1	1		1	2
Licensure or registration of midwives					6	1	1	1
Supervision of midwives					1		1	1
Provides personnel or financial assistance for local infant and preschool health services:								
Clinics for infants and/or preschool children	1	1[k]	1	1	1		1	1
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1	1	1	1
Free pediatric consultation service		1	1	1[l]	1		1	1
Engages in following activities from the State level:								
Special studies of infant mortality records	1	1	1	1	1	1	1	1
Licensure and/or approval of child-caring institutions				2			2	
Provides personnel or financial assistance for school health services:								
Physical examination of school children	1[a]			3	1[k], [a]	1[a]	3	1, 3
Follow-up nursing service to promote and help arrange for correction of defects	1	1	1	1, 3	1	1	1	1
Engages in following activities from the State level:								
Special studies of health problems of school children	1	1	1[l]	1, 3	1, 3		3	1
Approval of construction plans of school buildings	1			3	1, 3	3	3	

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1, 2[b], 3[c], 4	1, 3[c], 4, 5[c]	1, 3[c], 4, 5[c]	1, 3[c], 4	1, 2[b], 3[c], 4, 5, 7[e]	1[b], 3[c], 4	1, 4	1, 2[d], 3[c], 4
Promotes local maternity-child health programs	1	1, 3[c]	1	1, 3[c]	1[c]	1[b], 3[c]	1	1
Conducts educational programs for:								
The general public	1	1	1	1, 3	1	1	1	1
Local physicians	1		1	1	1	1	1	1
Public health nurses	1	1	1	1	1	1	1	1
Private duty nurses		1		1				1
Midwives					1		1	
Teachers and/or student teachers	1, 3	1, 3	1	1	3	3		1
School children	1, 3	3	3	1, 3	1, 3			3[j]
Supervises and/or provides consultation service to local organizations	1, 3[c]	1, 3[c]	1	1, 3[c]	1, 2[d]	1[b], 3[c]	1	1
Provides personnel or financial assistance for local maternity health services:								
Prenatal and/or postnatal clinics		1[k], 5		5	1, 2, 5		1	1[k]
Prenatal and/or postnatal home nursing service	1	1	1	1	1	1	1	1
Free delivery service—								
Hospital	2[l]	2[l], 5	5	2[l], 5	2, 5	2, 7		
Home—								
Nursing	1[k]	1[k]	1[k]	1		2	1[k]	1[k]
Medical	2[l]	2[l], 5	1[k], 5	2[l]		2		1[k]
Free incubator service				1	1	1		
Free obstetrical consultation service			1				1	
Maternity demonstration projects in selected areas	1	1	1				1	1
Additional service not covered in this classification								
Engages in following activities from the State level:								
Follow-up studies of reports of maternity deaths	1		1	1		1	1	1
Licensure of maternity hospitals or homes	2	1		1	2	2		1
Licensure or registration of midwives		6			3	1	1	
Supervision of midwives					1	1	1	
Provides personnel or financial assistance for local infant and preschool health services:								
Clinics for infants and/or preschool children	1	1[k]		5	1, 5	1	1	1[k]
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1	1	1	1
Free pediatric consultation service			1			1		
Engages in following activities from the State level:								
Special studies of infant mortality records	1[k]	1	1	1	1	1	1	1
Licensure and/or approval of child-caring institutions	2	2			2[k]	2		2[l]
Provides personnel or financial assistance for school health services:								
Physical examination of school children	1		1[a]	1[k], [a]	1	3	1[a]	1
Follow-up nursing service to promote and help arrange for correction of defects	1	1	1	1	1	1	1	1
Engages in following activities from the State level:								
Special studies of health problems of school children		1			1	1		1
Approval of construction plans of school buildings	1, 3	1, 7	3	3	1, 3, 7[e]	3		1

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1[b], 4	1, 2[d], 3[c], 4	3[c], 4	1, 3[c], 4	1, 3[c], 4	1, 3[c], 4	1, 3[c], 4	1, 2[d], 3[c], 4, 5[c]
Promotes local maternity-child health programs	1[b]	1[b]	1	1	1, 2[d], 3[h]	1[b]	1	1, 3[c]
Conducts educational programs for:								
The general public	1	1	1	1	1	1	1	1
Local physicians	1	1	1	1	1	1	1	1
Public health nurses	1	1	1	1	1	1	1	1
Private duty nurses								
Midwives		1			1		1	
Teachers and/or student teachers		1	1	3	1	1	1	1
School children		3	1, 3	1, 3	3	1, 3	1, 3	1, 3
Supervises and/or provides consultation service to local organizations	1[b]	1, 3[c]	1	1	1, 3[c]	1[b]	1	1, 3[c]
Provides personnel or financial assistance for local maternity health services:								
Prenatal and/or postnatal clinics		1	1		1, 5[g]	1	1	1
Prenatal and/or postnatal home nursing service	1	1	1	1[k]	1	1	1	1
Free delivery service—								
Hospital		5			5[g]	1[k], 2[l]	2, 7	2[l], 5
Home—								
Nursing		1[l]	1[k]	1[k]		1[k]	2	
Medical			1[k]		5[g]	1[k], 2[l]	2	2[l]
Free incubator service	1	1	1	1	1[l]	1	1	1
Free obstetrical consultation service		1	1		1	1		1
Maternity demonstration projects in selected areas			1	1	1	1	1	1
Additional service not covered in this classification								1
Engages in following activities from the State level:								
Follow-up studies of reports of maternity deaths		1	1	1	1	1		1
Licensure of maternity hospitals or homes		1	1		1			1, 2
Licensure or registration of midwives			6		1		1	6
Supervision of midwives		1			1			
Provides personnel or financial assistance for local infant and preschool health services:								
Clinics for infants and/or preschool children	1[k]	1	1	1	1, 5[g]	1	1	1
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1	1	1	1
Free pediatric consultation service		1	1			1		1
Engages in following activities from the State level:								
Special studies of infant mortality records	1	1	1		1	1	1	1
Licensure and/or approval of child-caring institutions		2		2	2		2	2
Provides personnel or financial assistance for local school health services:								
Physical examination of school children		1[l], 3	1[k]	1	1	1[a]	1[a]	1[k], [a]
Follow-up nursing service to promote and help arrange for correction of defects	1	1	1	1, 3	1	1	1	1
Engages in following activities from the State level:								
Special studies of health problems of school children		1, 3[l]		1, 3	1			1, 3
Approval of construction plans of school buildings		1, 3	3	1, 3	1	3		3, 7

See footnotes at end of table.

TABLE 2.—*Department of State government responsible for specific duties designed to improve maternity and/or child health 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/or enforces State laws, rules, and regulations pertaining to maternity and child health	1, 3[c], 4	1, 2[c], 3[c], 7	1, 2[d], 3[c]	1, 3[c], 4, 7	1, 3[c], 7
Promotes local maternity-child health programs	1, 3[c]	1	1, 3[c]	1[f]	
Conducts educational programs for:					
The general public	1	1	1, 3		
Local physicians	1	1[c]	1		
Public health nurses	1	1	1, 5	1	
Private duty nurses		1	1, 5		
Midwives			1	1	1
Teachers and/or student teachers	1	1	1, 3		1
School children	1[j], 3	3	3		3
Supervises and/or provides consultation service to local organizations	1	1	1, 3[c]	1[f]	
Provides personnel or financial assistance for local maternity health services:					
Prenatal and/or postnatal clinics	1	1[k]	1	1	1
Prenatal and/or postnatal home nursing service	1	1	1	1	1
Free delivery service—					
Hospital		2[l]		1	1
Home—					
Nursing	1	1			1
Medical					1
Free incubator service	1		1		
Free obstetrical consultation service				1	
Maternity demonstration projects in selected areas		1			
Additional service not covered in this classification					
Engages in following activities from the State level:					
Follow-up studies of reports of maternity deaths	1	1	1	1	
Licensure of maternity hospitals or homes			1		
Licensure or registration of midwives	6		1	1	6, 7
Supervision of midwives			1	1	1
Provides personnel or financial assistance for local infant and preschool health services:					
Clinics for infants and/or preschool children	1	1	1	1	1
Home nursing service for promotion of clinic attendance and follow-up work	1	1	1	1	1
Free pediatric consultation service		1	1	1	
Engages in following activities from the State level:					
Special studies of infant mortality records	1	1	1	1	
Licensure and/or approval of child-caring institutions			2		
Provides personnel or financial assistance for local school health services:					
Physical examination of school children	1[k]	1, 3	1	1	1
Follow-up nursing service to promote and help arrange for correction of defects	1	1	1	1	3
Engages in following activities from the State level:					
Special studies of health problems of school children	1	1	1, 3		
Approval of construction plans of school buildings	3	7	1, 3	1, 3	3

*Code:
1. Department of health
2. Department of welfare, social security, or public assistance
3. Department of education
4. Department of industrial relations, industrial commission, department of labor and industry
5. State university or college
6. Department of registration and education, committee on licensure; independent licensing and examining boards
7. Other departments of State government

**Activities described herein are those which were in operation at the time this survey was made in 1940. Reports submitted to the United States Children's Bureau for the entire year 1940 indicate that, in some instances, additional services were initiated subsequent to the date of interview for this study.

[a] The department of health is really a division (Idaho) and bureau (Maine) of public health, subordinate to the department of public welfare (Idaho) and the department of heath and welfare (Maine).
[b] Maternity and infant and preschool health only.
[c] School health only.
[d] Infant and preschool health only.
[e] Maternity health only.
[f] Maternity and school health only.
[g] Two agencies of this classification function in this capacity.
[h] Infant and preschool and school health only.
[i] Program in beginning stages; indicated agency authorized—however, little or nothing done.
[j] First through eighth grades, inclusive.
[k] Not routinely; for selected areas (usually for demonstration); for selected cases; upon request; or under other special conditions.
[l] As part of State's participation in general medical care for the needy.
[m] Three independent hospital boards, administering five separate institutions, function in this capacity.
[n] Not specifically for this activity as such, but as part of the general health program.

ones which engage in promotional activities. Such supervision and advice pertain to organization of local facilities, to method of procedure, and to the kind and amount of service which might reasonably be expected from the staffs of local governmental units.

To say that stimulation of local interest in the physical betterment of mothers and children is furthered by the educational measures employed by most State health departments only partially indicates the importance of education in the over-all effort to raise the health level of this segment of the population. As a matter of fact, education is the principal approach utilized by official State agencies in the maternity-child health program. Even in the rendering of direct service there is no cleavage between care and personal instruction of the patient.

Educational methods utilized are of several distinct types, depending upon whether they are directed toward professional groups or the laity. Practically all health departments include popular educational campaigns in their maternity-child health programs. While radio talks and skits, newspaper and magazine articles, are prepared for the public at large, certain nonprofessional bodies, usually mothers' clubs, parent-teachers' associations, and similar community service organizations, are selected as a nucleus for imparting information based on recommended procedures for maternity and child hygiene. The foregoing groups, which are reached through lectures, films, demonstrations, and distribution of literature, are then depended upon to disseminate further the knowledge acquired. Subject matter presented by these methods is apt to emphasize the necessity of seeking medical attention early in the term of pregnancy, the importance of returning for physical check-up at regular intervals throughout the prenatal period, the effect of proper rest and diet upon both mother and child, principles of child care, measures for preventing communicable diseases, criteria of normal child development, the advisability of periodic medical examination for children, and the correction of physical defects thus located. More detailed medical instruction is offered the mothers who avail themselves of the prenatal or well-child clinic services maintained by the health department.

As already implied, special educational programs in obstetrics and pediatrics are arranged for persons upon whom mothers and children rely for professional care. Refresher courses for local physicians and dentists are presented through seminars, lectures before county medical societies, personal instruction by the consultant obstetrician

or pediatrician attached to the State health department staff, or formal, intramural postgraduate study. Institutes and regional conferences for local public health nurses nearly always include discussion of the latest developments in prenatal and postnatal home nursing service and care of the newborn, as well as consideration of the nurses' responsibility as clinic assistant, health educator, and promoter of recurrent examination of infants and preschool children. Selected nurses are awarded scholarships for extended courses dealing with such specialized problems as assistance at complicated deliveries or the care of premature infants. Others are given instruction in home delivery service by means of demonstrations and actual field participation. A few health departments include in their educational pursuits nurses on private duty as well as public health nurses. Staff physicians, likewise, are excused from duty to attend intramural courses in advanced obstetrics and pediatrics, while health department dentists are given leave of absence for further study of children's dentistry.

Women functioning as midwives constitute another group for whom special instruction is planned. In a number of States, many maternity patients are economically unable to afford the services of a physician; in other areas, the number of physicians practicing in a community is inadequate; while in still other sections, traditions originating in foreign countries foster preference for midwife care. Consequently, in such localities quite a high percentage of births are attended by nonmedical persons. Rarely are these attendants regular midwives. Instead, they are usually untrained neighbor women who, because they attend several births a year, have come to be known as midwives. In an effort to improve the situation, about 50 percent of the State health departments have worked out plans for instructing these so-called midwives in elementary principles to be observed when attending a woman at childbirth. Manuals are prepared for those whose level of intelligence permits learning by such methods. In addition, there is oral teaching and demonstration, both individually and in groups. Physicians as well as public health nurses serve as instructors. Features of midwife education include maintenance of properly equipped bags, techniques of delivery, use of silver nitrate, completion of birth certificates, personal and home hygiene, limitations of midwifery, and knowledge of conditions which require the services of a physician.

Approximately two-fifths of the State health departments reported that they also maintain some system of supervision which serves as

a check upon application of the principles which are taught. Such supervision includes periodic inspection of midwives' bags, observance of their delivery practices, or follow-up visits within twenty-four hours of a birth to check upon their procedures. States vary as to whether physicians or nurses are employed as midwife supervisors.

Another line of approach to the midwife problem is through regulatory requirement that no nonmedical person shall serve as a birth attendant unless she is licensed as a midwife. The declared practices of the States are given herewith, notwithstanding the fact that large proportions of women in lower economic groups are dependent upon nonmedical attendants, irrespective of whether such attendants come within the purview of any licensing scheme. About three-fifths of the States (nine more than in 1930) prohibit midwives from practicing unless they possess a permit, certificate, or license awarded by the unit of government officially charged with such licensure. In 20 States the health department is the agency which issues midwife licenses, and in 13 States this function is performed by a board of medical examiners or the department of registration for licenses. Requirements for licenses or permits sometimes include the passing of a physical examination; an examination based on knowledge of procedures to be followed when attending a birth; certification by one or more local physicians as to the applicant's ability, habits, and general reputation; and management of a specified number of deliveries under a physician's guidance. At one extreme, the control attempted through licensure is, in effect, an exclusion process designed to eliminate from qualification a majority of the candidates; at the other end of the scale, licensing amounts to little more than routine registration. Even within individual States economic conditions and social attitudes determine local practices that occupy varying positions within this wide range.

Participation in local maternity, infant, and preschool clinic services is an outstanding function of State health departments. Several distinct patterns are followed in supplying personnel or funds. Members of the State staff may serve as clinicians, the State agency may pay the fees and traveling expenses of local clinicians, or State assistance may be limited to the provision of equipment and supplies. In all, nearly four-fifths of the State health departments either supply personnel or financially aid local maternity (prenatal and postnatal) clinics, while all but three of them contribute in one way or another to similar facilities for infants and preschool children. For the most part, the purpose of State performance and aid as herein described is to supplement inadequate local facilities or to reinforce such facilities where special problems exist. On the other hand, the primary objective may be to demonstrate to selected communities the workability and benefits of the services afforded. Under still other circumstances,

the policy of direct State service is an outgrowth of general organization and policy which characterizes the entire system of government in certain jurisdictions. The out-patient departments of some State university hospitals also operate clinics for mothers and children. Prenatal clinics are sponsored by about a dozen State hospitals, and pediatric clinics by nearly as many.

Eligibility for clinic service depends, to a large extent, upon a patient's economic status. While a few States indicate that the service offered is open to all, most of them stipulate that only the medically needy—variously defined as "all who cannot provide service by their own resources," "referrals from physicians and social workers," "people of county hospital level," "all midwife cases," and "those with a maximum income of $20.00 per week per couple, plus $3.50 per week for each child"—are accepted. On the whole, economic restrictions for admission to maternity services are more stringent than for admission to services for children.

The precise scope of services offered in the clinics of the several States varies, but always the aim is to bring under medical and nursing supervision persons who otherwise would have no opportunity to receive professional attention. Furthermore, it is the common aim to begin such supervision early in the period of pregnancy and continue it uninterruptedly throughout the mother's prenatal, puerperal, and postpartum span. Health supervision of children is planned to extend through infancy, preschool, and school life. In the main, maternity clinics offer both antepartum and postpartum medical examination and treatment as well as medical and nursing advice. Patients discovered to be in need of types of medical treatment not available in the clinic are usually referred to private physicians.

In only two jurisdictions, Alabama and Puerto Rico, are birth control clinics operated directly by State health departments; in another, Virginia, the out-patient department of a State-owned general hospital maintains such a clinic. Interest of the North Carolina health department in the program of birth control is expressed through its promotion of the establishment of such clinics at the local level, while in South Carolina, State health department personnel are available for supervision of and consultation to local birth control clinics.

Clinics for infants and preschool children are chiefly examination centers where the educational rather than the clinical phase of child health is emphasized. Ways and means of securing correction for the medical and nutritional defects and unhygienic practices found are given consideration by the clinician and nurse in attendance, and mothers are personally instructed regarding their children's special needs and proper care. Nutritional instruction is emphasized par-

ticularly. Not infrequently, diphtheria immunizations, smallpox vaccinations, and tuberculin tests are performed as part of the clinic routine. Dental examinations likewise are often included. The extent to which children's dentistry is a constituent service of broader child health programs is demonstrated in chapter VI of this series of articles.[6]

Because periodic medical supervision is believed to be vitally important both to mothers during the term of pregnancy and to infants and preschool children, regularity of schedule is stressed in planning clinic sessions both for prenatal patients and for infants and preschool children. Several State health departments have purchased medical trailers or healthmobiles which contain all necessary equipment for conducting maternity and well-child clinics. In these mobile units the State staff travels, circuit fashion, from one point to another, making return visits as frequently as is feasible. By this system, duplication of equipment is avoided, time of personnel is conserved, and professional services are more widely distributed. Furthermore, communities without satisfactory clinic quarters are no longer denied service. To facilitate transportation of mothers and children to clinic centers, it sometimes proves most practical in rural communities to combine the maternity and child conferences into a single service facility.

Provision of home nursing service for prenatal and postnatal cases, for infants, and for preschool children is an element of the maternity-child health programs of all State health departments. In extending home nursing services, the State agency functions either through direct assignment of State nurses to particular localities, through loan of nurses from the central staff for emergency service in selected communities, or through subsidy of local nursing activities by means of complete or partial payment of their salaries and travel. Nurses supplied under any of these arrangements serve both mothers and children. This is to be expected, since rarely are the nurses specialists in either field, but regular public health nurses engaged in generalized health activities.

Participation in free nursing or medical delivery service for maternity cases is one of the more recently developed functions of State health departments. Seldom is such service available for the entire State. The more usual policy has been to introduce it into selected sections having especially high mortality rates. This plan has evolved from the experience of lowering such rates with the provision of proper obstetrical care. Most of the areas selected for these services lacked sufficient medical and nursing facilities to serve adequately maternity patients of the lower income groups residing therein. Over two-thirds of the State health departments, either through pro-

[6] See text footnote *.

vision of personnel or financial assistance to local communities, furnish some measure of nursing service for home deliveries. Nurses serving in this capacity render actual bedside care to the mother during the various stages of childbirth and attend both the mother and newborn infant for a designated time thereafter.

The practice by State health agencies of furnishing medical care for deliveries was less well developed at the time of this survey than the plan of supplying State nursing assistance to private physicians; only 17 health departments reported administration of medical care programs including attendance at home births. Eight of this group supplied hospital delivery service for complicated or primipara cases, while three additional departments financed hospital—but not home—deliveries. The fee system is customarily employed for reimbursement of physicians who deliver patients where provisions for such service are made. Such fees range in amount from $10.00 to $50.00. A rather unique feature of the Alabama and Florida programs is the State maintenance of a 10- and a 20-bed maternity hospital, respectively. These small hospitals were built as Work Projects Administration enterprises and offer delivery service exclusively.

Besides the delivery service afforded by State health departments, 24 State departments of welfare include in their arrangements for general medical care of the needy the item medical delivery service in the home and/or hospital, while the university hospitals of 19 States also provide free or part-pay hospitalization for maternity cases. Furthermore, in 5 additional States, hospital delivery service is available wholly or partially at State expense through general hospitals administered variously by a board of control, State eleemosynary board, or an independent hospital commission.

Three-fifths of the State health departments own incubators which are loaned to local hospitals, to health officers, or to private physicians for the care of premature infants. Some of these incubators are electrically heated and some are of the hot-water type. They are available for either hospital or home use—throughout the State in most instances, though sometimes for selected areas only. Occasionally, State incubator service is furnished as an educational and promotional measure rather than as a service unit. Under this plan, blueprints are distributed to local hospitals, and the State agency urges that incubators be built locally.

Employment of consultants for service to practicing local physicians in their offices or hospitals is a slightly more prominent feature of State services associated with obstetrics than of those involving pediatrics. Consultant obstetricians are available to private physicians at State expense in 32 jurisdictions, and consultant pediatricians are employed by nearly as many. In some States these consultants are full-time members of the health department staff; in others, they are

retained on either a part-time salary or individual fee basis. While their first responsibility is to render consultation service to local physicians and clinicians regarding individual cases which present complications, those who are employed full time also conduct refresher courses, arrange demonstrations, promote and supervise local clinics, and assist in the general education programs.

While in the strictest sense, follow-up studies of maternal and infant mortality records could scarcely be termed real service, in a broader sense they constitute a control device for the State's service program. Only through knowledge of the leading causes of puerperal and infant mortality can an effective approach be made toward reducing the number of such deaths. Determination of the particular population groups or geographic sections in which there are relatively high rates is essential, also, from the standpoint of selected communities for concentration of service. According to table 2, some analysis of maternal mortality records is reported by more than four-fifths of the State health departments, while nearly all of them make similar studies of infant deaths. These analytical procedures differ considerably in method, of course. Some represent merely gross tabulations, while others include detailed case-by-case investigation.

Although protection of the health of mothers and children is not founded basically upon law enforcement or drafting of regulations, reference to table 2 denotes that in almost all jurisdictions several agencies of State government exercise regulatory control over certain matters which are significant to maternity-child health programs in their broader concepts. More conspicuous among the regulatory measures pertaining to maternity and child health are promulgation and enforcement of rules and regulations for communicable disease control, requirement that serologic tests routinely be made a part of the physical examination of every pregnant woman, and insistence upon the instillation of silver nitrate or other approved preparation in the eyes of every newborn infant. Because of their close association with health problems of a specific nature, these regulatory activities of State health departments have already been treated in detail in previous chapters of this series.[7]

Regulation of midwives, as defined by licensure, was discussed earlier in the present report. In some States, licensure and supervision are required also for maternity hospitals and child-caring institutions. Thirty-one and twenty-five States, respectively, pursue the policy of licensing or registering such establishments, and responsibility is divided between the departments of health and welfare. The position of the department of welfare is much more prominent with respect to custody over child-caring institutions (which may include orphanages, child-boarding homes, and/or day nurseries) than with regard

[7] See text footnote* (chapters II, III, and IV).

to control of maternity hospitals. Establishments of the latter classification are more apt to fall within the scope of health department authority. Reference to the situation in 1930 [8] discloses that within the past 10 years there has been a marked tendency to transfer maternity hospital control from the department of welfare to the health department, but that regulation of children's institutions remains almost entirely a welfare department function.

All States, the District of Columbia, and Puerto Rico have enacted legislation which, in varying measures, regulates the conditions under which women and children may be gainfully employed. In nearly all jurisdictions the department of labor or industrial commission is the State agency charged with administering and enforcing these laws. While limitations differ markedly from State to State, conditions which are subjected to regulation most frequently include: For women, employment in certain occupations, maximum number of hours for each working day and each working week, rest periods to be observed, seats in all establishments where women are employed, types of work prohibited at night, and—in a few States—definite periods of leave required for maternity cases; for children, minimum age for employment, age for which school attendance is compulsory, kind of employment permitted outside school hours, maximum number of hours for each working day and each working week, kinds of night work prohibited certain age groups, and requirement that each child shall possess a work permit. Employment certificates for school children, though required by State law, are usually issued by local school authorities.

Over four-fifths of the States require that plans for new school buildings be approved before construction begins. Such approval includes consideration of proper lighting, heating, ventilation, plumbing, sewage disposal facilities, and water supply. The department of education is responsible for this approval singly in 17 States and jointly with the health department in 14. In 8 States the health department alone is charged with this duty, while the department of labor, art commission, or State architect occasionally shares responsibility. Sanitary maintenance of the water supplies and sewage disposal facilities of school premises also has a bearing upon school health. Information regarding the functions of State agencies in school sanitation may be obtained from chapter V.[9]

Occasionally, regulatory authority of the State department of education in the interest of better health for school children also has to do with administering the school health law as it applies to physical examination of school children. This last function, however, is more often a duty of the health department than of the department of educa-

[8] See footnote [1].
[9] See text footnote [*].

tion. State legislation relative to school examinations falls roughly into two broad classifications, "compulsory" and "permissive." Of the two, permissive examinations are authorized more frequently than compulsory ones are imposed.

For children of school age, the school curriculum is prescribed by the State department of education and usually includes definite courses of study in health. These courses commonly result from joint deliberations of the health department and the department of education. Besides imparting knowledge, the health instruction of school children is designed to inculcate habits and attitudes contributory to healthful living and the building of sound bodies.

Another educational approach to improvement of the health of school children is through in-service training given teachers and inclusion of health instruction in the curriculum of teachers' training colleges. Here, again, the health department and the department of education are apt to collaborate in impressing upon teachers and prospective teachers the importance of their position in raising the health standard of the school child. The teacher's opportunity in this respect stems partly from responsibility for presentation of subject matter, but more particularly from close association with the children which permits recognition, in the earliest stages, of symptoms of acute illness, physical defects, and subnormal development.

Health services for school children are administered in a somewhat different fashion from those for younger children. Periodic physical inspection or examination is the framework for correction or improvement of a child's physical defects; yet marked disagreement appears to exist regarding the most efficacious method for obtaining maximum value from such examinations.

Relatively few States encourage annual examination of all school children. Instead, they favor restriction of the number examined, with more concentration upon correction of defects. Furthermore, they urge that parents be present at the time of examination in order that there might be developed a better understanding of any defects found and the importance of securing early correction thereof. In selecting children to be examined, more States utilize the system of choosing certain school grades for examination each year than follow any other plan. Through this selection, each child is reexamined every two or three years, depending upon the interval between the school grades chosen. Another method of selecting school children to be examined is that termed "screening." By this scheme, children of all grades are inspected by a teacher or nurse, and those having noticeable defects are referred to the physician for thorough examination.

The types of school examinations sponsored by the various States range from superficial testing of vision and hearing by teachers or nurses to complete physical examinations by physicians. Reports

from States selected at random for the specific items covered are cited to illustrate types of practice:

Arkansas	Thorough inspection, including vision, hearing, nutrition, and gross defects.
Delaware	Complete physical examination.
Florida	Complete physical examination, including the special senses.
Illinois	General physical examination, including hearing, sight, throat, weight, and respiration.
Indiana	Examination, including sight, hearing, inspection for disease, disabilities, or other defects which may reduce efficiency.
Kentucky	Examination for evidences of communicable diseases, parasitic diseases, and physical defects.
Maryland	Complete physical and dental examinations.
South Carolina	(1) Screening—on basis of head, heart, lungs, etc. (2) General physical examination when indicated.
Vermont	Examination of eyes, ears, nose, throat, heart, lungs, teeth, height, weight, and general nutrition.
Wyoming	Inspection of eyes, ears, and throat by teachers and nurses.

Most State health agencies supervise school medical services to a greater or lesser extent. However, health department subsidy for physical examination of school children is rarely earmarked as such, but is covered by the cooperative health department budget which originates partly from State and partly from local sources. Six departments of education, on the other hand, extend financial aid to local communities for the express purpose of contributing to the support of school medical examinations. Examinations of school children are made directly by State personnel in 20 jurisdictions; in 9 of these, service is rendered by the State for selected areas only, upon request only, or under other special circumstances. In nearly half of the jurisdictions where school examinations are not performed by members of the State staff, a uniform system—promoted by the State—is followed by the constituent subdivisions.

Outstanding among the health problems of school children, as revealed by routine physical examinations, are dental defects, faulty nutrition, defective vision, and impairment of hearing. State health departments—ranging in number from 10 to 28 for the several specific problems—have made special studies pertaining to these defects. In several other States the department of education has initiated similar studies. Investigations dealing with disease incidence and immunization are also related to health problems of school children. Studies of this type were covered in chapter II.[10] Cardiac disease and goiter are less common ailments of school children, but in several States they represent a problem of sufficient magnitude to provoke special consideration.

[10] See text footnote *.

Practically all States, through their aid in expanding general public health nursing services, indirectly assist in providing nursing service to promote and help arrange for correction of physical defects of school children. It must be understood that all phases of State activities for the improvement of school health, like services for younger children and for mothers, are sharply influenced by and closely tied in with local health organization. Even State sponsorship of uniform arrangements within its boundaries frequently does not entail direct service by the State agency. More often than not, for all types of maternity and child hygiene, local personnel render the actual service, while the State staff assists through advice, financial aid, and a general balancing influence. However, within individual States, practices vary in accordance with the resources or the desires of local communities.

EXPENDITURES FOR MATERNITY-CHILD HEALTH ACTIVITIES

As pointed out in each of the preceding chapters,[11] any attempt to isolate complete expenditure figures for a particular health activity is beset with difficulties. Insofar as arriving at the cost of State activities which contribute to the health of mothers and children is concerned, these difficulties are centered in the fact that maternity-child health programs formally organized and budgeted as such do not cover the entire scope of maternity and child health activities. The foregoing sections of this report have delineated numerous methods whereby such official agencies of State government as departments of welfare, education, and labor, State university hospitals, and State general hospitals of other control supplement the maternity and child health services of State health departments. However, for very few of these agencies is it possible to give specifically the cost of such services, because usually contributions to maternity and child health do not represent separate and distinct programs organized as such. For example, the cost to the department of education of maintaining a health curriculum adapted to the course of study of the several school grades is usually an integral part of general education. Furthermore, no separate arrangement is likely to be made for instruction of teachers and teacher-training students in matters pertaining to child and community health. Instead, such health courses or lectures are apt to be included merely as one of several bodies of subject matter covered. Again, environmental hygiene is only one of many considerations in the construction and upkeep of school buildings. In the same manner, departments of welfare, which license maternity hospitals or child-caring and placing agencies and institutions, frequently do so in conjunction with other activities which are not pertinent to the present study. Moreover,

[11] See text footnote [4].

medical delivery service available through State welfare agencies is only one item of broader programs of general medical care for the needy. Likewise, enforcement of labor laws affecting the health of women and children is usually merged with other types of labor control. Finally, maternity clinics operated by State university hospitals for the most part are units of the general out-patient department services.

Within State health departments also there is interlacement of activity insofar as maternity and child health is concerned. Related health department functions which are also significant to the health of mothers and children include broad public health education programs, intramural training of public health personnel, general communicable disease control, tuberculosis control, venereal disease control, dental hygiene, collection and analysis of vital statistics, and laboratory diagnosis. Likewise, along with numerous other health services, maintenance of maternity and child health facilities at the local level is included in the purposes for which financial aid is extended to local health departments by State agencies.

The influence of such general health activities upon maternity and child health is recognized by the United States Children's Bureau, which is responsible for the administration of Federal grants-in-aid to the several States for extension and improvement of maternal and child health services. Such recognition is apparent from the fact that the proportions of State and local funds expended for these service categories which are shown to be for health services to mothers and children are accepted for matching purposes.[12] However, in the prevailing system of accounting, funds are assigned to primary categories of service; thus the exact amount of State money appropriated for general health activities but expended for maternity and child health services is difficult to determine from the financial data collected for the purpose of revising Public Health Bulletin No. 184. At the same time, because the United States Children's Bureau requires that—in order to receive Federal aid under title V of the Social Security Act—State health departments must designate the portion of State money appropriated for general health services but expended for health services which are limited to mothers and children, it was possible to obtain from that source a figure which is believed to be a reliable index for comparing the expenditures of the several State health departments for maternity and child health.

In view of the circumstances set forth, it is obvious that no absolutely complete or accurate figure can be ascertained concerning the amount expended by all State agencies for maternity and child health services. Therefore, it becomes necessary to confine discussion of the cost of State maternity and child health services to the cost of such

[12] See footnote [4].

services which are administered and aided by State health departments. Consequently, the fiscal material presented in table 3 represents expenditures of State health departments alone, but includes their outlay for administration, regulation, supervision, actual field service, and financial aid to local communities for health services to mothers and children during the fiscal year 1940. It is recognized, of course, that large sums are expended by other State agencies. For instance, the obstetrical services furnished directly by State university hospitals and indirectly by departments of welfare and the school health services afforded by departments of education undoubtedly all attain sizable proportions. As already stated, however, accounts of these agencies do not lend themselves to break-down of expenditures for health services available to mothers and children exclusively.

In table 3 are recorded not only the approximate gross disbursements of each State health department for maternity and child health during a 12-month period, but also the expenditure per live birth in each jurisdiction. For the Nation as a whole, the aggregate amount reaches more than $6,000,000. This figure covers the operating cost of all services rendered mothers and children by the central and district staffs of State health agencies plus all assistance extended by the State health department to its local counterparts for similar purposes.

Break-down of the figures recorded in table 3, which cover both Federal funds and State money specifically earmarked for maternity and child health, gives the impression that over two-thirds of the full amount expended by State health agencies of the entire country for improving the health of mothers and children was derived from Federal allotments. This seeming overbalance of Federal funds is occasioned by the fact that local funds as well as those appropriated by the State enter into the matching formula of the United States Children's Bureau. Since the present study is restricted to consideration of State activity, however, local contributions form no part of the subject of discussion.

According to table 3, expenditures of individual State health departments for the improvement of maternity and child health range from almost $34,000 in Nevada to over $357,000 in New York. These figures are not particularly meaningful, however, until they are related to the individual problems of the various States. Reduction of total expenditures to a per capita basis also has little significance insofar as maternity and child health activities are concerned, since such programs are not designed to serve the entire population. Consequently, the number of live births occurring in a State was selected as a significant unit for measuring the relative needs for maternity and child health services in the several jurisdictions, despite the fact that these funds are used for health service to children of all ages. This choice was influenced by the fact that number

TABLE 3.—*Approximate total expenditures* and expenditures per live birth by State health departments for maternity and child health activities in each State and Territory, the District of Columbia, and the Virgin Islands during the fiscal year 1939–40*

State or Territory	Approximate total expenditure* for maternity and child health activities	Live births, 1939	Approximate expenditure* per live birth for maternity and child health activities
Total	$6,172,600	2,350,325	$2.63
Alabama	226,200	61,385	3.68
Arizona	75,200	10,928	6.88
Arkansas	129,800	35,565	3.65
California	148,000	103,453	1.43
Colorado	95,400	20,692	4.61
Connecticut	94,000	23,463	4.01
Delaware	53,200	4,384	12.14
District of Columbia	90,300	14,037	6.43
Florida	119,500	32,328	3.70
Georgia	192,000	64,781	2.96
Idaho	60,800	11,068	5.49
Illinois	316,400	117,841	2.68
Indiana	91,400	58,349	1.57
Iowa	120,200	43,765	2.75
Kansas	112,400	29,115	3.86
Kentucky	118,500	60,587	1.96
Louisiana	113,100	48,844	2.32
Maine	80,700	14,987	5.38
Maryland	124,000	28,291	4.38
Massachusetts	153,100	63,657	2.41
Michigan	193,100	94,418	2.05
Minnesota	90,700	50,237	1.81
Mississippi	128,100	51,721	2.48
Missouri	135,200	58,876	2.30
Montana	61,800	10,897	5.67
Nebraska	49,700	22,338	2.22
Nevada	33,900	1,940	17.47
New Hampshire	60,000	7,934	7.56
New Jersey	149,600	56,379	2.65
New Mexico	95,700	14,215	6.73
New York	357,300	187,575	1.90
North Carolina	194,500	79,149	2.46
North Dakota	55,700	13,158	4.23
Ohio	145,000	109,272	1.33
Oklahoma	102,300	43,471	2.35
Oregon	73,300	16,715	4.39
Pennsylvania	254,700	161,049	1.58
Rhode Island	64,900	10,444	6.21
South Carolina	149,000	42,811	3.48
South Dakota	58,300	11,616	5.02
Tennessee	124,400	53,353	2.33
Texas	252,000	121,049	2.08
Utah	76,300	13,007	5.87
Vermont	70,500	6,375	11.06
Virginia	136,900	52,921	2.59
Washington	56,400	26,538	2.13
West Virginia	96,000	41,545	2.31
Wisconsin	153,400	54,168	2.83
Wyoming	40,300	4,897	8.23
Alaska	52,000	1,514	34.35
Hawaii	71,200	9,392	7.58
Puerto Rico	76,200	73,044	1.04
Virgin Islands	(a)	787	(a)

*Expenditures for the services considered are those reported by the several State health departments to the United States Children's Bureau as being expended for health services limited to mothers and children under plans approved by the Federal administrative agency. Funds disbursed include Federal grants and money appropriated by State legislative bodies. Financial assistance extended by State health agencies to local health units for maternity and child health services, but not the complete expenditures of political subdivisions for these purposes, are included.

(a) No record of expenditures for maternity and child health as a separate activity.

of live births was made an important factor under the provisions of the Social Security Act for determining the amount of Federal aid to which a State is entitled for carrying out its plan of service to mothers and children.[13]

Neither of the States which mark the extremes in aggregate expenditures occupy terminal positions from the standpoint of expenditures per live birth. By the second unit of measurement, Alaska leads with a disbursement of $34.35 per birth, while Puerto Rico ranks lowest, reporting a corresponding expenditure of $1.04. Thus, even on a relative basis, there is a wide divergence among the States in the amounts expended for maternity and child health services.

Further investigation reveals that the lower figure cited—slightly more than $1.00 per birth—is more typical of the country as a whole than is the higher amount—over $34.00. Expenditures per birth of the middle 50 percent of the States fall within the boundaries of $2.31 and $5.49, while $3.22 represents the median and $2.63 the average investment.

In seeking an explanation of the differences noted, consideration was given to influence of the two State characteristics which have been found to affect fiscal practices in the support of other health services. These two characteristics are wealth, as measured by per capita spendable money income, and location within a particular geographic area (Northeastern, Southern, Central, and Western). Investigation disclosed that, although in general the wealthier 50 percent of the States tend to spend more for maternity and child health than do the poorer half, the financial resources of a State appear to have less conspicuous bearing upon the extent to which it supports maternity and child-health activities than was discernible in other categories of service. This status is only to be expected, inasmuch as the Federal Government contributes a large proportion of the total sum expended for materity and child health services, and the allotment formula utilized is designed to offset, partially at least, the usual adverse effect of low per capita income upon health services. Moreover, the several geographic groupings are characterized by such widely varying internal behavior that whatever differences do exist between expenditures of the median State of each section are believed to reflect the formula used for apportioning Federal aid and not to result from location alone.

Study of the degree to which balancing is effected by the allotment procedure, on a basis of the proportionate number of births occurring in each State, points to a greater outlay per birth for maternity-child health services in States with few births than in those with many. This conclusion is arrived at from arraying the jurisdictions in descending order according to the percentage which the number of live

[13] See footnote [4].

births in each State is of the total number of live births in the United States, dividing the States thus arrayed into quarters, and computing the expenditure per live birth for the median State of each quarter. The outcome of this test was as follows: Highest quarter, $2.05; second quarter, $2.35; third quarter, $4.23; and lowest quarter, $7.56. In other words, as the number of births in a State as related to the total number in the country increases, the proportionate expenditure for State maternity and child health services decreases. That this situation still exists in spite of Federal effort to give additional aid to jurisdictions having the greatest problem is an interesting observation which indicates that, while Federal influence may minimize certain differences among the States, it does not wholly counterbalance those differences.

Again it must be emphasized that both the total expenditures cited and the expenditures as related to an index of the relative problems of the various States are measures of State health department activity only and do not include services of local health departments except as they are aided by the State. Consequently, it is not to be construed that the differences among the States represent entirely differences in quantity or quality of service available to the public. They may indicate differences in organization, for in some jurisdictions most of the maternity and child health services are financed by State and Federal funds, while in others the largest expenditures for these services are from local sources.

Repeatedly, throughout this discussion, reference has been made to the growth which has taken place in State maternity and child health programs. Perhaps the most telling evidence of the expansion which has occurred during the past decade lies in the increased amount of money expended. Cursory inspection of total expenditure figures for 1930 ($1,382,400) [14] and the 1940 total recorded in table 3 ($6,172,600) suggests that about four and one-half times as much was disbursed during the most recent survey year as during the earlier one. These differences apply to total disbursements, of course, and give no indication of the ratio on a per client basis, since the population base for the two years is not the same. While 1930 money was devoted to care for expectant mothers and infants only, 1940 services were available to maternity cases, infants, preschool, and school children.

Moreover, by carefully weighing the two sets of figures, one finds that they are not entirely comparable—even for aggregate sums—since the earlier publication did not include expenditures of the District of Columbia or the three Territories. Consequently, for the purpose of establishing comparability, it was necessary to restrict the picture of growth to changes in the financial structure of the 48 State health departments, as applied to activities for the improvement of

[14] See footnote [1].

maternity and child health. Such adjustment of the 1940 total does not alter the conclusion that there has been remarkable development in the programs under consideration, for within the 48 State health organizations the annual expenditure has risen from $1,382,400 in 1930 to $5,882,900 in 1940. In other words, from the standpoint of gross expenditures, four and one-fourth times as much money was being disbursed by State health departments for maternity and child hygiene at the end of the 1930-1940 decennary as at the beginning. No determination was made of differences in the amount allotted for each person eligible for service under the two programs.

DISCUSSION

Funds available to State health departments for administration of health services relative to mothers and children have more than quadrupled during the 1930–1940 decade. While a portion of these increased funds are utilized for continuation and expansion of traditional activities, a number of new channels of service have been opened also. Furthermore, the population base which is served has been broadened.

Among the older branches which have undergone further development are operation of prenatal, infant, and preschool clinics; licensing of maternity hospitals and of child-caring or placing institutions and agencies; instruction, supervision, and licensing of midwives; education of the public in matters pertaining to better health for mothers and children; physical examination of school children; and extension of financial aid to local health units for support of maternity-child health services rendered locally.

Items embraced more recently by the broadened State programs include postgraduate education of nurses and physicians in obstetrical and pediatric care; provision of supervision and consultation service to local health units concerning organization of programs at that level; employment of obstetrical and pediatric consultants for service to individual practicing physicians and clinic personnel; analysis of infant and maternal mortality rates for determining the possibilities of reducing such deaths; furnishing free nursing and medical service for home delivery or arranging for free hospital delivery for selected cases; and supplying incubators for use of premature infants. Besides, the population coverage has been extended. Formerly, services were limited to expectant mothers and infants. Now, in addition to pregnant women, the entire child population may be served.

Considerable variation exists in the extent to which the aforementioned services are offered by the several States. Besides, absence of service at the State level does not necessarily reflect upon that State indifference toward the importance of the particular service item. Subsidized local health units may or may not function in lieu of the State agency.

While the health department is the official State agency primarily responsible for activities leading to better health for mothers and children, several other governmental units, particularly the departments of welfare, labor, and education and State university hospitals, also make some contribution to the over-all State plan. For the most part, departments of welfare are concerned with licensure and supervision of child-caring institutions and, through their arrangements for general medical care of the needy, with provision of medical delivery service; departments of education participate in school health work; and hospitals affiliated with State universities offer both in-patient and out-patient services for maternity cases during the complete maternity cycle.

According to the best fiscal data available in 1940, activities for maternity and child health as administered or aided by State health departments were costing over 6 million dollars per year. While it appears that 69 percent of this expense was borne by Federal grants made available under title V of the Social Security Act, this proportion is exaggerated by the fact that significant amounts of local money are also used for matching purposes; however, local participation forms no part of this analysis. Inasmuch as the States are obliged to maintain the basic organizational structure which supports the several public health specialties, even State contribution in reality is much greater than it appears to be when credit is given only for the specialized maternity and child health elements of the program.

SUPERFICIAL VASCULARIZATION OF THE CORNEA

The Result of Riboflavin Therapy [1]

By HAROLD R. SANDSTEAD, *Passed Assistant Surgeon, United States Public Health Service*

In 1931, Day, Langston, and O'Brien (*2*) reported the production of a vascularizing keratitis in vitamin G deficient animals. Bessey and Wolbach (*1*) in 1939 again produced a vascularizing keratitis in animals deprived of riboflavin and reported curing the condition by feeding the vitamin. Kruse, Sydenstricker, Sebrell, and Cleckley (*5, 6*) in January and June 1940 reported that a superficial vascularizing keratitis of the cornea in patients shown to be receiving insufficient riboflavin was cured by the riboflavin and recurred when the vitamin was withdrawn.

In May and November of 1940, Johnson and Eckhardt (*3, 4*) treated patients with rosacea keratitis with favorable results. Wiehl

[1] From the Division of Public Health Methods, National Institute of Health. Submitted for publication April 20, 1942.

489329°—42——5

and Kruse (7) have used superficial vascularization as a sign of riboflavin deficiency in survey work. More recently the Conference on Methods and Procedures for Nutrition Survey (as reported in Public Health Reports, February 6, 1942) stated: "Characteristic capillary invasion of the cornea is an index of riboflavin deficiency, and it is recommended that this examination [slit lamp and biomicroscopic examination] be used in group assessments of the nutritional status."

It is the purpose of this report to present data on (1) the prevalence of superficial vascularization of the cornea in population groups of various sizes, and (2) the effect of riboflavin therapy on that condition.

STUDY GROUPS

In the present survey 366 persons in all were examined [2] and 52 of that number were included in a riboflavin feeding project. All subjects were residents of Hagerstown, Md., or its immediate vicinity. The groups and their major characteristics are as follows:

TABLE 1.—*Groups studied*

Group	Number	Sex		Color	Age range	When surveyed
		Male	Female			
School children (St. Mary's School).	107	55	52	White	7–18	October and November 1941.
Youths (National Youth Administration).	190	29	161	176 White, 14 Negro	16–24	July to September 1941.
Adults (National Defense Training School).	57	57	----	White	17–58	May 1941.
Other adults	12	12	----	White	29–50	September 1941.

METHOD OF EXAMINATION

All subjects were examined (by binocular corneal microscope, with slit lamp illumination) and, for purposes of recording, each cornea was arbitrarily divided into four quadrants: (1) nasal, (2) superior, (3) temporal, and (4) inferior. In each quadrant, the number of "tiers" of *circulating* capillary loops (serrations) was noted and recorded in terms of the greatest number of tiers visible counting from the limbus centripetally toward the pupil, i.e., 0, 1, 2, 3, or whatever number was seen; central penetration was estimated (in millimeters) and recorded, as was also activity or rate of flow (sluggish, moderate, or rapid). In order to verify the observation, two examiners routinely made independent examinations of all who received therapy, as well as of the majority of the whole survey group. At each examination, the examiners' observations were checked and found to be in close agreement.

[2] Using a binocular corneal microscope (Bausch & Lomb) with slit lamp illumination.

PREVALENCE AND DEGREE OF EXTENSION OF VASCULARIZATION OF THE CORNEA

In table 2 are shown the number and percentage of subjects with the maximum number of tiers of circulating capillary loops (serrations) in any quadrant of either cornea. The observations indicate that 80 to 95 percent of the persons examined have some degree of corneal invasion by capillaries.

The table shows the differences between the groups. Corneal invasion was observed relatively more frequently, in more severe form, i.e., to a greater depth (in terms of the number of tiers of vessels present) in the two older groups than in the school children. The percentage of subjects having no corneal vessels or only a marginal tier in any quadrant of either cornea was: among the parochial school children, 63.5; among NYA youths, 27.9; and among adults of the survey group, 45.2.

TABLE 2.—*Prevalence of vascularized cornea by groups*

	Maximum number of tiers of capillary loops in any quadrant					Total number having corneal vascularization	Total number examined
	0	1	2	3	4 and more		
St. Mary's School:							
Girls—Number	10	25	13	4		42	52
Percent	19.2	48.1	25.0	7.7		80.8	100.0
Boys—Number	9	24	17	3	2	46	55
Percent	16.4	43.6	30.9	5.45	3.62	83.6	100.0
Total—Number	19	49	30	7	2	88	107
Percent	17.8	45.8	28.0	6.3	1.87	82.2	100.0
National Youth Administration:							
Girls—Number	8	36	81	30	6	153	161
Percent	4.96	22.2	50.3	18.7	3.71	95.04	100.0
Boys—Number	4	5	15	4	1	25	29
Percent	13.8	17.2	51.5	13.8	3.45	86.2	100.0
Total—Number	12	41	96	34	7	178	190
Percent	6.3	21.6	50.5	17.9	3.68	93.7	100.0
National Defense Training School and other adults:							
Males—Number	14	16	27	8	4	55	69
Percent	20.3	23.2	39.1	11.6	5.8	79.7	100.0

One other measure of the degree of involvement of the cornea may be expressed in the number of quadrants of the circumferences of the two corneas invaded by capillaries. Among the parochial school children 67 percent had no more than two quadrants (out of eight) involved; among the National Youth Administration youths 17 percent had as few as two quadrants affected; and among the older group only 30 percent had as few as two quadrants with capillary invasion.

Very generally, the greater the number of quadrants involved the greater the extension of the vessels toward the pupil. Where no more

than two quadrants were involved it was unusual to find more than one tier of vessels; but when seven or eight quadrants were involved it was rare to find fewer than two tiers. This occurred only in the older group.

THERAPY

In order to observe the effect of riboflavin on superficial vascularization of the cornea, two groups of different ages were studied. Segregation of the subjects into control and therapy groups was done by a third person so that the two examiners had no knowledge of an individual's therapy status until after his final examination.

Twenty-four youths who presented varying degrees of capillary invasion of the cornea, as noted at the original survey, were re-examined and divided equally into control and riboflavin feeding groups. Five older male subjects with corneal involvement, having very good economic status, were also placed in the riboflavin feeding group. The riboflavin[3] was dispensed in 5-mg. capsules and the control group received placebo capsules. Each subject received written instructions to take one capsule three times daily and was given a recording card which he was to present at his next examination. Therapy was instituted on September 15 and continued for 60 days, with two exceptions in which it was administered for 68 and 110 days. Re-examinations were made at approximately 10-day intervals.

The corneal vascularization of the older subjects who had received 615 to 1,630 mg. of riboflavin for at least 60 days was not significantly different from that of persons of similar age in the control group.[4] In both groups there was individual fluctuation in the area and degree of involvement.

Young children attending the parochial school were studied because of the possibility that the poor physical and economic status of the National Youth Administration youths might possibly be influencing factors in the response to the therapy. A group of 22 children were equally divided into therapy and control groups. Riboflavin in 5-mg. capsules and control capsules were dispensed at 8:30 a. m. and 3:00 p. m. daily at school and taken at home over the week ends and holidays. After 49 days of therapy the subjects were re-examined. As in the previous project no apparent therapeutic effect was observed.

DISCUSSION

Superficial vascularization of the cornea is extremely prevalent. In the parochial school children studied, only 18 percent were without penetration of vessels beyond the limbus. A marginal tier of one

[3] Recently purchased from E. R. Squibb & Co. and properly protected from deterioration; 3 separate lots used.

[4] However, in a number of instances, coexisting asymptomatic stomatitis was definitely improved or completely cured in the same course of therapy.

capillary loop into one or all quadrants of the cornea was found in 46 percent of this group. In 36 percent of these children, central penetration of two or more tiers of anastomosing capillary loops was seen.

The National Youth Administration subjects were in striking contrast to the school children. Only 6.3 percent were without corneal vascularization; 21.6 percent had one tier of vessels, while 72 percent had two or more anastomosing tiers. Extensive superficial corneal vascularization was found in 4 percent of these youths. The group represents both rural and urban youth of poor economic status.

Slight degrees of invasion of the peripheral portion of the cornea are so prevalent without other ophthalmological evidence of disease that questions of etiology and permanency arise. In several of the exanthems an acute catarrhal conjunctivitis is the rule. Particularly is this true of measles and occasionally the cornea is affected. One may speculate as to the possibility that this group of diseases may account for much of the vascularization seen in childhood.

In the two controlled feeding projects, one of which was by individual school feeding, no significant change in the degree of corneal vascularization occurred which could be ascribed to riboflavin effect. In no instance was there a complete disappearance of the vessels and in several a progression was observed. At the present time, therefore, it seems doubtful that superficial vascularization of the cornea, as observed in this study and as found in the general population (*7*, *8*), should be considered a diagnostic sign of riboflavin deficiency; further controlled investigations along this line should be made.

REFERENCE

(*1*) Bessey, O. A., and Wolbach, S. B.: Vascularization of the cornea of the rat in riboflavin deficiency, with a note on corneal vascularization in vitamin A deficiency. J. Exp. Med., **69**: 1–12 (January 1, 1939).

(*2*) Day, P. L., Langston, W. C., and O'Brien, C. S.: Cataract and other ocular changes in vitamin G deficiency. Am. J. Ophthal., **14**: 1005–1009 (October 1931).

(*3*) Johnson, L. V., and Eckhardt, R. E.: Ocular conditions associated with clinical riboflavin deficiency. Arch. Ophthal., **24**: 1001–1005 (November 1940).

(*4*) Johnson, L. V., and Eckhardt, R. E.: Rosacea keratitis and conditions with vascularization of cornea treated with riboflavin. Arch. Ophthal., **23**: 899–907 (May 1940).

(*5*) Kruse, H. D., Sydenstricker, V. P., Sebrell, W. H., and Cleckley, H. M.: Ocular manifestations of ariboflavinosis. Pub. Health Rep., **55**: 157–169 (January 26, 1940).

(*6*) Sydenstricker, V. P., Sebrell, W. H., Cleckley, H. M., and Kruse, H. D.: The ocular manifestations of ariboflavinosis. J. Am. Med. Assoc., **114**: 2437–2445 (June 22, 1940).

(*7*) Wiehl, D. G., and Kruse, H. D.: Medical evaluation of nutritional status. V. Prevalence of deficiency diseases in their subclinical stage. The Milbank Memorial Fund Quarterly, **19**: 241–251 (July 1941).

(*8*) Nutrition Survey of Population Groups. Report of a conference on methods and procedures. Pub. Health Rep., **57**: 189–194 (February 6, 1942).

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

October 11–November 7, 1942

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 7, 1942, the number reported for the corresponding period in 1941, and the median number for the years 1937–41.

DISEASES ABOVE MEDIAN PREVALENCE

Influenza.—For the 4 weeks ended November 7 there were 5,404 cases of influenza reported, as compared with 5,009, 3,285, and 3,361 for the corresponding period in 1941, 1940, and 1939, respectively. While the number of cases was only slightly larger than that reported during the corresponding period in 1941, it represented an increase of approximately 60 percent over the 1937–41 median incidence. Each region of the country except the North Central reported an excess over the seasonal expectancy, but the highest incidence was reported from the South Atlantic and West South Central regions. Almost 70 percent of the total cases occurred in three States, viz, Texas (2,026), South Carolina (1,021), and Virginia (676). An increase of this disease is expected at this time of the year; and while so many of the regions reported excesses over the 5-year median, the number of cases was not especially large in any region. However, the presence of influenza is usually reflected in the death rate and the average rate from all causes in large cities for the 4 weeks under consideration was 11.7 per 1,000 population, as compared with 11.0 for the corresponding period in the 3 preceding years.

Meningococcus meningitis.—In relation to preceding years the incidence of meningococcus meningitis continued considerably above the level of 1941 and also above the 1937–41 median level. The number of cases reported for the 4 weeks ended November 7 was 237, as compared with 117, 106, and 135 for the corresponding period in 1941, 1940, and 1939, respectively, and with a median of 135 cases for this period in the years 1937–41. Regions along the Atlantic and the Pacific coasts reported the largest excesses over the seasonal expectancy. States in those regions reporting the largest numbers of cases were: New York (51 cases), Pennsylvania (23), Massachusetts (12), New Jersey (11), Maryland (15), and California (14)—more than one-half of the total cases were reported from those six States. In the East North Central region the incidence was about normal and other regions reported a decline from the 5-year expectancy.

DISEASES BELOW MEDIAN PREVALENCE

Diphtheria.—The number of cases (2,484) of diphtheria reported for the 4 weeks ended November 7 was approximately the same as that recorded for the corresponding period in 1941, but it was only about 75 percent of the 1937–41 median incidence. The number of cases occurring in the Pacific region was slightly above the 5-year expectancy, but in all other regions the incidence was relatively low.

Measles.—For the country as a whole the incidence of measles was comparatively low. However, a comparison of geographic regions shows that the disease was unusually high in the New England, Middle Atlantic, Mountain, and Pacific regions; in the New England and Pacific regions the numbers of cases were approximately double the median figures, with minor increases in the other two regions. In other regions the disease was less prevalent than in previous years.

Poliomyelitis.—There were 600 cases of this disease reported for the current 4-week period, as compared with 1,320, 1,789 and 1,163 cases reported for the corresponding period in 1941, 1940, and 1939, respectively. Compared with the 1937–41 median incidence, the number of cases for the country as a whole was relatively low, and a similar situation existed in each geographic region except the New England and West South Central. In the New England region the excess over the median was slight, but in the West South Central region the number of cases (64) represented an excess over the 5-year expectancy of approximately 30 percent.

Scarlet fever.—The expected seasonal increase of scarlet fever appeared in all sections of the country during the current 4-week period. The number of cases (8,900) was about 22 percent higher than the 1941 figure, but it was slightly less than the median figure (9,382) for this period. Significant increases over the seasonal expectancy were reported from the New England, South Atlantic, and Pacific regions, with minor excesses in the South Central regions; in other regions the incidence was relatively low.

Smallpox.—The downward trend of this disease that has been in progress since 1938 was interrupted during the current period by the occurrence of 45 cases, as compared with 36 for the corresponding period in 1941. For the first time since about the middle of 1938 the number of cases for a current 4-week period is higher than it was during the corresponding period in the preceding year. The current increase was largely due to an excess of cases in the West North Central region (14 cases as compared with 7 in 1941) and the South Atlantic region (8 cases as against none last year). While the number of cases for the country as a whole was higher than that of last year, it was less than 40 percent of the 1937–41 median incidence for this period.

Typhoid and paratyphoid fever.—The number of cases of typhoid and paratyphoid fever declined considerably during the 4 weeks ended November 7. Compared with preceding years the incidence (599 cases) was about 30 percent less than that of last year and about 45 percent less than the 1937–41 median incidence for the same weeks. The situation was favorable in practically all sections of the country.

Whooping cough.—The incidence of whooping cough was also below the normal seasonal level, approximately 11,000 cases being reported for the current 4-week period, as compared with an average of approximately 12,000 cases for the same weeks in 1938–41. The incidence was unusually high in the North Atlantic, West North Central, and West South Central regions, about normal in the Pacific region, and considerably below the 5-year median in other regions.

MORTALITY, ALL CAUSES

The average mortality rate from all causes in large cities for the 4 weeks ended November 7, based on data received from the Bureau of the Census, was 11.7 per 1,000 population (annual basis), as compared with 11.0 for the corresponding period in the 3 preceding years. The first sign of an unusual increase in the death rate appeared during the week ended October 3, when the rate rose from 10.7 during the preceding week to 11.5 during the week ended October 3 and to 12.2 for the week ended October 10. For the 4 subsequent weeks the rates were 11.6, 11.7, 12.0, and 11.6, respectively. The relatively high death rates during the past few weeks has no doubt been mostly due to respiratory diseases, and while the rate for the week ended November 7 was almost down to the level of October 3, it may be only temporary, as an increase of influenza and pneumonia cases is normally expected at this season of the year, and it is apparent that the presence of these diseases greatly affects the death rate.

Number of reported Cases of 9 communicable diseases in the United States during the 4-week period October 11–November 7, 1942, the number for the corresponding period in 1941, and the median number of cases reported for the corresponding period, 1937–41

Division	Current period	1941	5-year median	Current period	1941	5-year median	Current period	1941	5-year median
	Diphtheria			Influenza [1]			Measles [2]		
United States	2,484	2,480	3,219	5,404	5,009	3,361	5,283	5,194	5,410
New England	24	18	31	25	7	7	1,125	725	583
Middle Atlantic	136	132	215	75	42	50	926	862	862
East North Central	265	238	410	214	187	224	651	702	702
West North Central	117	117	131	50	54	54	297	352	381
South Atlantic	946	1,038	1,305	1,874	1,499	1,456	111	885	580
East South Central	363	355	439	293	117	241	80	282	190
West South Central	432	449	449	2,250	2,482	1,005	93	218	128
Mountain	73	57	95	448	395	359	745	536	516
Pacific	128	76	106	175	226	124	1,255	632	632
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States	237	117	135	600	1,320	1,163	8,900	7,318	9,382
New England	31	12	8	34	70	29	863	611	456
Middle Atlantic	85	23	27	99	432	122	1,382	1,078	1,545
East North Central	27	17	25	130	223	215	2,347	1,983	2,866
West North Central	7	9	11	109	83	170	1,039	792	1,147
South Atlantic	39	26	26	38	197	69	1,434	1,117	1,216
East South Central	16	15	20	34	195	58	756	750	725
West South Central	5	8	10	64	50	49	355	241	350
Mountain	1	1	3	19	17	40	196	257	377
Pacific	26	6	7	73	53	100	528	489	441
	Smallpox			Typhoid and paratyphoid fever			Whooping cough [2]		
United States	45	36	119	599	847	1,096	10,795	12,053	[3] 12,265
New England	0	0	0	30	24	25	1,349	926	1,000
Middle Atlantic	0	0	0	77	120	132	3,357	2,856	3,114
East North Central	4	13	36	129	95	124	2,782	3,931	3,794
West North Central	14	7	29	20	59	67	1,446	684	608
South Atlantic	8	0	0	120	225	221	857	1,194	1,162
East South Central	2	5	6	63	128	134	291	528	463
West South Central	9	7	9	99	119	195	529	387	359
Mountain	2	2	19	42	47	70	292	508	367
Pacific	6	2	19	19	30	52	892	1,039	876

[1] Mississippi, New York, and Pennsylvania excluded; New York City included.
[2] Mississippi excluded.
[3] Four years (1938–41) only.

DEATHS DURING WEEK ENDED NOVEMBER 14, 1942

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

	Week ended Nov. 14, 1942	Corresponding week 1941
Data from 88 cities of the United States:		
Total deaths	8,593	8,276
Average for 3 prior years	8,206	
Total deaths, first 45 weeks of year	375,670	374,796
Deaths per 1,000 population, first 45 weeks of year, annual rate	11.7	11.6
Deaths under 1 year of age	615	545
Average for 3 prior years	524	
Deaths under 1 year of age, first 45 weeks of year	25,977	23,767
Data from industrial insurance companies:		
Policies in force	65,244,143	64,642,665
Number of death claims	10,393	9,699
Death claims per 1,000 policies in force, annual rate	8.3	7.8
Death claims per 1,000 policies, first 45 weeks of year, annual rate	9.1	9.4

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 21, 1942

Summary

The incidence of meningococcus meningitis continues above the 5-year (1937–41) median expectancy and above that for any other year since 1937. The cases reported currently were distributed throughout all geographic areas. Decreases were reported for the New England and Middle Atlantic States, where the highest rates have been recorded for recent weeks, and increases were shown in North Central, East South Central and Mountain States, which previously have recorded the lowest rates.

A break in the normal seasonal decline of poliomyelitis occurred during the weeks ended November 14 and 21, due in large part to the numbers of cases reported in Texas and California. In July, Los Angeles reported only 1 case, in August 5 cases, in October 27 cases, and up to November 21, 17 cases have been reported in the city, 13 of which occurred during the week ended November 21.

The number of cases of influenza increased from 1,596 for the preceding week to 1,769 for the current week, more than 75 percent of which occurred in the West South Central and South Atlantic States. The largest numbers of cases were reported in Texas (553), South Carolina (439), and Virginia (157).

With the exception of measles and meningococcus meningitis, the total number of cases reported to date is below the 5-year (1937–41) median for each of the 9 communicable diseases included in the following table for which comparable data are available for prior years.

Other diseases reported during the week include 1 case of anthrax (in Pennsylvania), 1 case of leprosy (in New York), 9 cases of smallpox, 12 cases of tularemia, and 91 cases of endemic typhus fever (31 in Texas and 28 in Georgia).

The death rate for the current week for 88 large cities in the United States is 12.7 per 1,000 population, as compared with 12.0 for the preceding week, and a 3-year (1939–41) average of 11.4 for the corresponding week. During the current week, increased rates were noted for the New England and Middle Atlantic areas while a decrease was recorded for the Pacific States.

Telegraphic morbidity reports from State health officers for the week ended November 21, 1942, and comparison with corresponding week of 1941 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 1937–41	Week ended		Median 1937–41	Week ended		Median 1937–41	Week ended		Median 1937–41
	Nov. 21, 1942	Nov. 22, 1941		Nov. 21, 1942	Nov. 22, 1941		Nov. 21, 1942	Nov. 22, 1941		Nov. 21, 1942	Nov. 22, 1941	
NEW ENG.												
Maine	1	0	1	1		1	5	142	46	1	0	0
New Hampshire	0	1	0		2		30	17	4	0	0	0
Vermont	0	0	0				120	1	12	0	0	0
Massachusetts	1	5	5				261	108	177	4	3	1
Rhode Island	1	4	0				0	3	2	2	0	0
Connecticut	2	0	0	3		3	72	65	45	0	1	1
MID. ATL.												
New York	13	14	19	[1] 16	[1] 7	[1] 11	207	136	149	12	7	3
New Jersey	4	2	13	4	4	7	20	15	18	1	1	1
Pennsylvania	14	12	33				447	332	332	2	3	3
E. NO. CEN.												
Ohio	14	22	46	3	9	9	21	28	28	3	1	0
Indiana	11	13	17	22	32	7	16	17	18	0	0	0
Illinois	26	30	39	9	6	10	33	30	32	1	4	4
Michigan [2]	9	7	12	6	1		49	50	78	5	0	0
Wisconsin	2	5	2	28	17	28	66	157	98	0	0	0
W. NO. CEN.												
Minnesota	3	0	1		1	1	1	10	59	0	0	0
Iowa	4	7	4	4	1	1	28	18	18	0	0	0
Missouri	12	10	15		12	4	8	13	9	0	0	1
North Dakota	2	0	1	2		4	1	18	5	1	0	0
South Dakota	3	1	1				19	1	1	0	0	0
Nebraska	2	7	2	8			50	5	2	0	0	0
Kansas	8	6	6	1	1	1	28	66	19	2	0	0
SO. ATL.												
Delaware	0	1	1				1	1	1	1	0	0
Maryland [3]	17	29	14	4	4	5	21	52	4	3	0	0
Dist. of Col.	0	0	2	2			1	2	2	0	0	0
Virginia	25	51	51	157	157	118	6	102	48	3	0	2
West Virginia	9	10	12	25	13	13	4	76	17	0	0	0
North Carolina	49	60	80	9	5	5	2	165	165	0	1	1
South Carolina	28	23	16	439	291	284	5	8	5	1	0	0
Georgia	25	21	21	35	59	31	8	21	9	2	1	1
Florida	16	8	9	3		3	5	9	9	0	0	1
E. SO. CEN.												
Kentucky	12	17	17	7	3	10	19	36	36	1	0	1
Tennessee	15	31	31	28	31	38	15	37	13	4	1	1
Alabama	15	39	33	53	66	66	2	9	9	1	0	2
Mississippi [3]	10	15	14							1	1	0
W. SO. CEN.												
Arkansas	11	29	23	53	128	62	8	66	8	1	1	1
Louisiana	13	7	9	10	11	6	3	2	1	1	0	1
Oklahoma	17	18	18	65	113	38	2	24	5	1	0	0
Texas	58	76	61	553	1,295	237	7	112	14	0	2	1
MOUNTAIN												
Montana	2	4	2		7	5	7	26	23	0	0	0
Idaho	1	6	0	1	8		19	6	6	3	0	0
Wyoming	0	0	0	31	2		14	0	0	0	0	0
Colorado	14	13	7	39	17	13	7	108	26	0	0	0
New Mexico	1	4	4	1		1	8	19	14	0	0	0
Arizona	1	4	4	84	105	105	8	29	3	0	0	0
Utah [3]	0	2	2		7	6	188	25	17	0	1	0
Nevada	0	1					5	3		0	0	
PACIFIC												
Washington	0	1	2				408	10	15	1	0	0
Oregon	0	1	2	17	9	18	189	25	19	0	0	0
California	22	25	32	46	45	34	39	259	162	6	1	1
Total	493	642	802	1,769	2,469	1,332	2,483	2,464	2,703	64	29	29
46 weeks	13,452	14,244	20,295	94,637	506,658	179,196	480,638	840,068	359,527	3,103	1,796	1,796

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended November 21, 1942, and comparison with corresponding week of 1941 and 5-year median—Continued

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended		Median 1937–41	Week ended		Median 1937–41	Week ended		Median 1937–41	Week ended		Median 1937–41
	Nov. 21, 1942	Nov. 22, 1941		Nov. 21, 1942	Nov. 22, 1941		Nov. 21, 1942	Nov. 22, 1941		Nov. 21, 1942	Nov. 22, 1941	
NEW ENG.												
Maine	0	2	0	9	17	9	0	0	0	1	0	1
New Hampshire	0	2	0	4	14	7	0	0	0	1	0	0
Vermont	1	0	0	3	7	7	0	0	0	0	0	0
Massachusetts	1	4	2	245	170	119	0	0	0	0	2	2
Rhode Island	0	0	0	12	14	5	0	0	0	0	0	0
Connecticut	0	2	0	38	20	35	0	0	0	0	2	2
MID. ATL.												
New York	2	15	7	240	216	236	0	0	0	8	6	6
New Jersey	3	3	2	39	86	85	0	0	0	3	1	2
Pennsylvania	2	16	4	136	210	312	0	0	0	4	7	10
E. NO. CEN.												
Ohio	0	8	7	169	137	225	0	1	1	2	9	9
Indiana	1	4	1	53	105	139	2	1	1	1	2	2
Illinois	11	5	5	162	160	287	0	2	2	3	3	8
Michigan [3]	1	8	6	93	115	287	0	1	9	2	1	2
Wisconsin	2	3	3	204	111	117	1	0	2	0	1	1
W. NO. CEN.												
Minnesota	3	8	4	47	50	84	0	1	6	2	0	0
Iowa	1	0	4	51	33	70	0	1	3	5	2	2
Missouri	3	3	3	64	80	80	0	1	2	0	4	4
North Dakota	0	0	0	11	3	24	0	0	0	0	0	0
South Dakota	0	1	1	16	33	33	0	0	0	0	0	0
Nebraska	4	0	3	15	16	17	1	0	0	0	1	1
Kansas	2	2	2	83	70	91	0	1	1	2	1	1
SO. ATL.												
Delaware	0	0	0	10	15	9	0	0	0	0	2	2
Maryland [3]	0	4	1	25	43	43	0	0	0	3	2	4
Dist. of Col.	0	1	0	13	14	10	0	0	0	0	0	0
Virginia	0	2	2	84	68	55	0	0	0	1	6	6
West Virginia	1	0	0	45	68	81	0	1	0	0	5	6
North Carolina	0	3	2	85	89	78	0	0	0	2	1	2
South Carolina	2	0	0	21	10	12	0	1	0	2	1	2
Georgia	1	1	1	57	49	38	0	1	0	3	5	5
Florida	3	2	1	9	7	7	0	0	0	1	1	3
E. SO. CEN.												
Kentucky	4	3	3	56	85	85	1	0	0	3	6	6
Tennessee	2	28	1	68	125	91	0	0	1	10	11	4
Alabama	0	9	3	33	51	35	0	0	0	1	0	2
Mississippi [3]	3	4	2	43	21	17	0	0	0	5	4	3
W. SO. CEN.												
Arkansas	0	1	1	22	11	20	1	0	1	4	13	10
Louisiana	0	0	0	10	7	14	0	0	0	8	3	7
Oklahoma	0	1	1	20	23	23	0	0	2	0	4	5
Texas	14	1	1	62	93	93	0	0	0	5	6	14
MOUNTAIN												
Montana	0	1	0	8	28	28	0	1	1	1	0	1
Idaho	1	2	1	8	1	11	1	0	0	1	0	2
Wyoming	0	0	0	5	5	5	0	0	0	0	0	0
Colorado	2	1	1	36	25	31	1	0	1	2	4	2
New Mexico	0	0	0	10	7	11	1	0	0	4	7	5
Arizona	0	1	0	5	2	5	0	0	0	1	1	1
Utah [3]	0	0	1	19	8	12	0	0	0	0	0	1
Nevada	0	0	------	0	1	------	0	0	------	0	0	------
PACIFIC												
Washington	3	1	1	24	21	36	0	0	1	1	1	3
Oregon	4	3	3	16	4	24	0	0	0	0	0	2
California	23	3	5	146	94	179	0	1	1	2	1	9
Total	100	158	158	2,634	2,642	3,571	9	14	61	94	126	196
46 weeks	3,833	8,688	8,688	110,559	110,079	140,753	707	1,242	9,062	6,304	7,880	11,922

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended November 21, 1942, and comparison with correspondlng week of 1941 and 5-year median—Continued

Division and State	Whooping cough		Week ended November 21, 1942								
	Week ended			Dysentery			Encephalitis, infectious	Leprosy	Rocky Mountain spotted fever	Tularemia	Typhus fever
	Nov. 21, 1942	Nov. 22, 1941	Anthrax	Amebic	Bacillary	Unspecified					
NEW ENG.											
Maine	65	23	0	0	0	0	1	0	0	0	0
New Hampshire	1	0	0	0	0	0	0	0	0	0	0
Vermont	40	12	0	0	0	0	0	0	0	0	0
Massachusetts	285	134	0	0	2	0	0	0	0	0	0
Rhode Island	4	35	0	0	0	0	0	0	0	0	0
Connecticut	107	73	0	0	0	0	1	0	0	0	0
MID. ATL.											
New York	581	474	0	1	13	0	0	1	0	0	1
New Jersey	186	226	0	0	0	0	0	0	0	0	0
Pennsylvania	305	223	1	0	1	0	0	0	0	1	0
											0
E. NO. CEN.											
Ohio	180	235	0	0	0	0	0	0	0	0	0
Indiana	28	41	0	0	0	2	0	0	0	1	0
Illinois	198	237	0	3	1	0	3	0	0	1	0
Michigan [1]	263	279	0	0	12	0	0	0	0	0	1
Wisconsin	199	338	0	0	0	0	1	0	0	1	0
W. NO. CEN.											
Minnesota	54	56	0	5	0	0	0	0	0	0	0
Iowa	17	26	0	0	0	0	0	0	0	2	0
Missouri	5	21	0	0	0	0	1	0	0	0	0
North Dakota	10	9	0	0	0	0	0	0	0	0	0
South Dakota	5	3	0	0	0	0	0	0	0	0	0
Nebraska	7	9	0	0	0	0	0	0	0	0	0
Kansas	67	87	0	0	0	0	0	0	0	0	0
SO. ATL.											
Delaware	3	2	0	0	0	0	0	0	0	0	0
Maryland [1]	116	27	0	0	0	0	0	0	0	0	0
Dist. of Col	19	14	0	0	0	0	0	0	0	0	0
Virginia	36	51	0	0	0	24	0	0	0	0	0
West Virginia	25	9	0	0	0	0	0	0	0	0	0
North Carolina	60	102	0	0	0	0	0	0	0	0	0
South Carolina	31	22	0	0	2	0	0	0	0	0	7
Georgia	16	15	0	4	5	0	0	0	0	0	28
Florida	11	9	0	2	0	0	0	0	0	0	4
E. SO. CEN.											
Kentucky	78	124	0	0	2	0	1	0	0	2	0
Tennessee	43	26	0	1	0	1	0	0	0	0	8
Alabama	13	30	0	0	0	0	0	0	0	0	7
Mississippi [2]	----	----	0	0	0	0	0	0	0	0	1
W. SO. CEN.											
Arkansas	7	15	0	2	12	0	0	0	0	1	0
Louisiana	0	3	0	2	1	0	0	0	0	0	2
Oklahoma	15	18	0	0	0	0	0	0	0	0	0
Texas	162	102	0	3	107	0	0	0	0	0	31
MOUNTAIN											
Montana	16	27	0	0	0	0	0	0	0	0	0
Idaho	5	2	0	0	0	0	0	0	0	0	0
Wyoming	4	9	0	0	0	0	0	0	0	0	0
Colorado	23	42	0	0	0	0	1	0	0	1	0
New Mexico	27	25	0	0	0	0	0	0	0	0	0
Arizona	1	10	0	0	0	10	0	0	0	0	0
Utah [2]	18	20	0	0	0	0	1	0	0	0	0
Nevada	0	9	0	0	0	0	0	0	0	0	0
PACIFIC											
Washington	11	116	0	0	0	0	0	0	0	0	0
Oregon	18	33	0	0	0	0	0	0	0	0	0
California	235	152	0	2	10	0	0	0	0	2	1
Total	3,600	3,555	1	25	168	37	10	1	0	12	91
46 weeks	159,129	187,724									

[1] New York City only.

[2] Period ended earlier than Saturday.

WEEKLY REPORTS FROM CITIES

City reports for week ended November 7, 1942

This table lists the reports from 88 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.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Atlanta, Ga.	2	0	16	1	1	1	6	0	5	0	0	5
Baltimore, Md.	0	0	3	1	1	2	13	0	13	0	2	62
Billings, Mont.	0	0	----	0	0	0	1	0	2	0	0	3
Birmingham, Ala.	0	0	2	0	1	0	4	0	5	0	0	0
Boise, Idaho	0	0	----	0	0	0	0	0	0	0	0	0
Boston, Mass.	3	0	----	0	4	2	6	1	66	0	0	40
Bridgeport, Conn.	0	0	----	0	0	0	2	1	2	0	0	7
Brunswick, Ga.	0	0	----	0	0	0	0	0	0	0	0	2
Buffalo, N. Y.	0	0	----	0	22	0	12	0	5	0	0	10
Camden, N. J.	0	0	----	0	0	0	2	0	1	0	0	13
Charleston, S. C.	1	0	4	0	0	0	0	0	0	0	0	0
Charleston, W. Va.	0	0	----	0	0	0	0	0	1	0	0	0
Chicago, Ill.	13	0	1	2	12	0	26	5	50	0	0	60
Cleveland, Ohio	2	0	2	0	2	0	5	0	39	0	1	46
Columbus, Ohio	0	0	3	3	0	0	4	0	28	0	0	8
Concord, N. H.	0	0	----	0	0	0	2	1	0	0	0	0
Cumberland, Md.	0	0	----	0	0	0	1	0	0	0	0	0
Dallas, Tex.	2	0	----	0	0	0	4	0	4	0	0	3
Denver, Colo.	5	0	22	0	3	0	4	0	6	0	0	2
Detroit, Mich.	0	0	----	0	21	0	9	1	22	0	0	82
Duluth, Minn.	0	0	----	0	0	0	0	0	0	0	0	5
Fall River, Mass.	0	0	----	0	0	0	1	0	3	0	0	6
Fargo, N. Dak.	0	0	----	0	0	1	0	0	1	0	0	0
Flint, Mich.	2	0	----	0	1	0	5	0	4	0	1	12
Fort Wayne, Ind.	0	0	----	0	0	1	5	0	0	0	0	0
Frederick, Md.	0	0	----	0	0	0	1	0	0	0	0	0
Galveston, Tex.	1	0	----	0	0	0	1	0	0	0	0	0
Grand Rapids, Mich.	0	0	----	1	0	0	0	0	2	0	0	5
Great Falls, Mont.	0	0	----	0	0	0	1	0	0	1	0	0
Hartford, Conn.	0	0	----	0	0	0	3	1	2	0	0	7
Helena, Mont.	0	0	----	0	0	0	0	0	1	0	0	0
Houston, Tex.	0	0	----	0	0	0	2	0	2	0	1	2
Indianapolis, Ind.	1	0	----	0	3	0	5	0	11	0	0	14
Kansas City, Mo.	0	0	----	1	2	0	5	0	17	0	0	3
Kenosha, Wis.	0	0	----	0	0	0	0	0	4	0	0	0
Little Rock, Ark.	0	0	2	1	0	0	1	0	1	0	0	1
Los Angeles, Calif.	5	0	5	1	10	1	15	2	19	0	0	29
Lynchburg, Va.	2	0	----	0	0	0	1	0	0	0	0	0
Memphis, Tenn.	1	0	4	0	0	0	2	0	3	0	0	7
Milwaukee, Wis.	0	0	----	0	38	1	1	0	43	0	0	35
Minneapolis, Minn.	0	0	----	0	0	1	4	1	18	0	0	8
Missoula, Mont.	0	0	----	0	0	0	0	0	1	0	0	0
Mobile, Ala.	1	0	1	0	0	0	1	0	0	0	0	0
Nashville, Tenn.	1	0	----	0	0	0	3	0	8	0	0	0
Newark, N. J.	0	0	1	0	3	3	7	0	8	0	0	11
New Haven, Conn.	0	0	2	0	1	0	0	0	5	0	0	18
New Orleans, La.	1	0	2	2	0	0	8	0	1	0	0	2
New York, N. Y.	9	1	9	2	10	8	44	3	94	0	3	112
Omaha, Nebr.	1	0	----	0	0	0	4	0	3	0	0	0
Philadelphia, Pa.	1	1	2	1	135	1	16	1	44	0	0	135
Pittsburgh, Pa.	2	0	1	0	3	3	6	0	7	0	0	27
Portland, Maine	0	0	----	0	0	1	3	3	1	0	0	7
Providence, R. I.	1	0	----	0	0	1	4	0	1	0	1	23
Pueblo, Colo.	0	0	----	0	1	0	1	0	1	0	0	0
Racine, Wis.	0	0	----	0	1	0	0	0	4	0	0	1
Raleigh, N. C.	0	0	----	0	1	0	0	0	0	0	0	9
Reading, Pa.	0	0	2	0	0	0	2	0	0	0	0	5
Richmond, Va.	0	0	1	1	0	0	2	0	2	0	0	6

City reports for week ended November 7, 1942—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
Roanoke, Va	0	0	------	0	0	0	2	0	0	0	0	0
Rochester, N. Y	0	0	------	0	2	0	1	1	6	0	0	13
Sacramento, Calif	10	1	------	0	0	0	2	0	5	0	0	4
Saint Joseph, Mo	0	0	------	0	0	0	3	0	1	0	0	0
Saint Louis, Mo	1	0	------	0	4	0	8	2	18	0	0	6
Saint Paul, Minn	0	0	------	2	0	0	6	0	8	0	0	23
Salt Lake City, Utah	0	0	------	1	57	0	1	0	5	0	0	2
San Antonio, Texas	1	0	------	1	0	0	5	0	1	0	0	1
San Francisco, Calif	1	0	1	0	11	0	7	0	8	0	0	6
Savannah, Ga	0	0	1	1	0	0	0	0	1	0	0	1
Seattle, Wash	1	0	------	0	6	0	1	0	3	0	0	6
Shreveport, La	1	0	------	0	0	0	3	0	1	0	1	0
South Bend, Ind	0	0	------	0	0	0	0	0	2	0	0	1
Spokane, Wash	2	0	2	2	5	1	0	1	2	0	0	1
Springfield, Ill	0	0	------	0	0	0	0	0	1	0	0	12
Springfield, Mass	0	0	------	0	5	0	2	0	37	0	0	3
Superior, Wis	0	0	------	0	1	0	2	0	0	0	0	4
Syracuse, N. Y	0	0	------	0	2	0	3	0	1	0	0	20
Tacoma, Wash	0	0	------	0	30	0	4	0	1	0	0	0
Tampa, Fla	1	0	------	0	0	0	0	0	2	0	0	1
Terre Haute, Ind	0	0	------	0	0	0	0	0	1	0	0	0
Topeka, Kans	0	0	------	0	0	0	1	0	1	0	0	0
Trenton, N. J	0	0	1	0	1	0	1	0	4	0	0	0
Washington, D. C	1	0	1	0	0	1	7	0	14	0	0	7
Wheeling, W. Va	0	0	------	0	0	0	2	0	1	0	0	7
Wichita, Kans	0	0	------	0	1	0	0	0	2	0	0	6
Wilmington, Del	0	0	------	0	0	0	3	0	1	0	0	3
Wilmington, N. C	2	0	------	0	0	0	1	1	2	0	0	1
Winston-Salem, N. C	2	0	------	0	0	0	0	0	3	0	0	4
Worcester, Mass	0	0	------	0	1	0	5	0	12	0	1	5

Anthrax—Cases: Wilmington, Del., 1.
Dysentery, amebic—Cases: Baltimore, 3; Detroit, 1; New York, 1.
Dysentery, bacillary—Cases: Baltimore, 4; Charleston, S. C., 2; Detroit, 2; Fall River, 2; Los Angeles, 4; New Haven, 1; New York, 7; Rochester, 2; Saint Louis, 1; Shreveport, 2; San Francisco, 1.
Leprosy—Cases: New Orleans, 1.
Rocky Mountain spotted fever—Cases: San Francisco, 1.
Typhus fever—Cases: Charleston, S. C., 2; Los Angeles, 1; Savannah, 5; Tampa, 1.

Rates (annual basis) per 100,000 population for the group of 88 cities included in the preceding table (estimated population, 1942, 33,667,679)

Period	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
		Cases	Deaths						
Week ended Nov. 7, 1942	12.39	14.09	3.72	62.26	50.33	109.03	0.15	1.70	150.23
Average for week 1937–41	19.10	13.93	[1] 2.96	[2] 84.54	[1] 48.31	103.33	0.63	5.01	160.79

[1] 3-year average, 1939–41.
[2] Median

PLAGUE INFECTION IN CALIFORNIA

Under dates of November 9 and 12, 1942, plague infection was reported found in pools of fleas and lice and one tick from rodents and a jack rabbit collected in California as follows:

Alameda County: September 19, 70 fleas from 9 ground squirrels, *C. beecheyi*, taken 2 miles south of Pleasanton.

Alpine County: September 15, 23 fleas from 24 chipmunks, *Eutamias* sp., and 25 fleas from 4 wood rats, *Neotoma* sp., taken from Crystal Springs Public Camp, 1 mile west of Woodford.

Kern County: August 5, 200 fleas from 9 ground squirrels, *C. beecheyi*, taken 2 miles east of Lebec.

Los Angeles County: July 28, 1 tick from 1 jack rabbit, *Lepus* sp., taken 9 miles west of Fairmont.

Marin County.—Camp Mendell: September 16, 44 fleas from 9 rats, *Rattus norvegicus;* September 17, 56 fleas from 10 rats, same species, and 48 fleas from 12 mice, *Mus californicus* and *Peromyscus truei;* September 18, 20 fleas from 6 rats, *Rattus norvegicus.* Fort Cronkhite: September 15, 5 fleas from 3 mice, *Mus californicus;* September 16, 32 fleas from 14 mice, same species, and 6 fleas from 17 rats *Rattus norvegicus;* September 17, 71 fleas from 27 mice, *Mus californicus* and *Peromyscus truei*, and 19 fleas from 7 mice, *Mus californicus:* September 18, 55 fleas from 23 mice, same species. Fort Baker: September 16, 17 fleas from 4 rats, *Rattus norvegicus;* September 17, 28 lice from 3 rats, same species.

Mono County: September 8, 18 fleas from 23 chipmunks, *Eutamias* sp., taken one-half mile east of Mammoth Post Office.

Siskiyou County: June 3, 71 fleas from 7 ground squirrels, *C. douglasii*, taken 4 miles north of Montague; June 4, 63 fleas from 8 golden mantled squirrels, *C. lateralis*, taken 22 miles northeast of Weed near Grass Lake; September 16, 83 fleas from 5 ground squirrels, *C. douglasii*, taken 3½ miles south of Grenada; September 18, 204 fleas from 10 ground squirrels, same species, taken one-quarter mile south of Edgewood.

Ventura County: September 1, 190 fleas from 12 ground squirrels, *C. beecheyi*, taken 1 mile north of Seacliff and 8 miles west of Ventura.

TERRITORIES AND POSSESSIONS

Hawaii Territory

Plague (rodent).—Two rats found during the week ended October 24, 1942, and one rat found during the week ended October 31, 1942, all in Paauhau area, Hamakua District, Island of Hawaii, T. H., have been proved positive for plague.

FOREIGN REPORTS

BRITISH EAST AFRICA

Tanganyika Territory—Cerebrospinal meningitis.—Cerebrospinal meningitis has been reported in Tanganyika Territory, British East Africa, as follows: during the week ended October 3, 1942, 288 cases with 37 deaths; week ended October 10, 139 cases, 15 deaths; week ended October 17, 439 cases, 74 deaths.

CANADA

Provinces—Communicable diseases—Week ended October 24, 1942.—During the week ended October 24, 1942, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis	1	1		6	4	1		1		14
Chickenpox		8	1	154	169	88	39	3	65	527
Diphtheria		9	4	57		11			1	82
Dysentery				16						16
German measles				68	5		2	2	2	79
Influenza		9			10				6	25
Measles		1		120	79	2	19		2	223
Mumps		32	4	138	214	10	43	55	187	683
Pneumonia		2			11				11	24
Poliomyelitis		2		4	2	5	2		3	18
Scarlet fever		8	12	153	90	7	25	50	57	402
Tuberculosis	1	5	15	110	78	17		11	1	238
Typhoid and paratyphoid fever		2		24	6			1	1	34
Undulant fever				1	1					2
Whooping cough		8	1	224	83	21	8	17	19	381
Other communicable diseases		3		3	277	1	2	1	7	294

CHILE

Santiago—Cerebrospinal meningitis.—According to information dated October 27, 1942, the epidemic of cerebrospinal meningitis in Santiago, Chile, apparently reached its peak during the week ended September 5, 1942. Since that time the weekly numbers of new cases and deaths reported have steadily decreased. The following table shows the numbers of cases and deaths reported by weeks:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Previously reported, 1942, to August 15	1,451	208	September 26	193	20
August 22	238	43	October 3	209	50
August 29	206	21	October 10	155	10
September 5	273	47	October 17	111	21
September 12	208	25	Total	3,261	479
September 19	217	34			

CUBA

Provinces—Notifiable diseases—4 weeks ended October 10, 1942.—During the 4 weeks ended October 10, 1942, 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			1	13		10	24
Chickenpox				1	1		2
Diphtheria	2	17	3	2		2	26
Hookworm disease		12		1			13
Leprosy				2			2
Malaria	85	6	1	53	4	229	378
Measles	2	4			3	10	19
Poliomyelitis	10	28	8	11	23	9	89
Tetanus, infantile	1						1
Tuberculosis	11	65	11	34	20	62	203
Typhoid fever	6	39	5	55	8	28	141

[1] Includes the city of Habana.

SWEDEN

Notifiable diseases—September 1942.—During the month of September 1942, cases of certain notifiable diseases were reported in Sweden as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	8	Poliomyelitis	155
Diphtheria	79	Scarlet fever	1,622
Dysentery	235	Syphilis	52
Epidemic encephalitis	3	Typhoid fever	15
Gonorrhea	1,552	Undulant fever	6
Hepatitis, epidemic	453	Weil's disease	9
Paratyphoid fever	11		

WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases]

NOTE.—Since many of the figures in the following tables are from weekly reports, the accumulated totals are for approximate dates.

Place		January–August 1942	September 1942	October 1942—week ended—				
				3	10	17	24	31
ASIA								
Ceylon	C	102						
China:								
Kunming (Yunnanfu)	C	[1] 804						
Shanghai	C	1						
India	C	72,391	8,663					
Calcutta	C	1,967	88	22				
Chittagong	C	55						
Rangoon	C	1						
India (French)	C	10						

[1] For the period May 12 to July 4, 1942.

World distribution of cholera, plague, smallpox, typhus fever, and yellow fever—Continued

PLAGUE

[C indicates cases; P, present]

Place		January–August 1942	September 1942	October 1942—week ended— 3	10	17	24	31
AFRICA								
Basutoland	C	10						
Belgian Congo	C	4						
British East Africa:								
Kenya	C	656	26	2	4	9		
Nairobi	C	64						
Uganda	C	318	3	3	4	2		
Egypt: Port Said	C	3						
Madagascar	C	91	1					
Morocco	C	312	13	2	3	13	6	
Senegal	C	[1] 5	1					
Union of South Africa	C	68						
ASIA								
China.[2]								
India	C	710	127					
Indochina (French)	C	72	1					
Palestine: Haifa	C	5						
EUROPE								
Portugal: Azores Islands	C	1						
NORTH AMERICA								
Canada: Alberta Province—								
Plague-infected fleas		P						
SOUTH AMERICA								
Argentina: Cordoba Province	C	7						
Brazil:								
Alagoas State	C	3						
Pernambuco State	C	6						
Chile: Valparaiso	C	1						
Peru:								
Ancash Department	C	6						
Lambayeque Department	C	3						
Libertad Department	C	7						
Salaverry—Plague-infected rats		P						
Lima Department	C	53						
Lima	C	18						
Piura Department	C	15						
OCEANIA								
Hawaii Territory: Plague-infected rats		42	1		4	2	2	1
New Caledonia	C		[3] 1					

[1] Includes 4 suspected cases.

[2] Plague has been reported in China as follows: Chekiang Province, Apr. 1–10, 1942, 4 cases; Fukien Province, Jan. 1–Apr. 5, 1942, plague appeared in 11 localities; Hunan Province, week ended Apr. 18, 1942, 2 cases; Suiyuan Province, pneumonic plague appeared in epidemic form during the period Jan. 1–Apr. 4, in the northwestern area.

[3] Pneumonic.

World distribution of cholera, plague, smallpox, typhus fever, and yellow fever—Continued

SMALLPOX

[C indicates cases]

Place		January–August 1942	September 1942	October 1942—week ended— 3	10	17	24	31
AFRICA								
Algeria	C	629	58		20			
Belgian Congo	C	321						
British East Africa: Tanganyika	C	21	12	4	2	10		
Dahomey	C	56						
French Guinea	C	76	58					
Gold Coast	C	1,095	108					
Ivory Coast	C	50						
Morocco	C	1,341	47	14	56	47	31	
Nigeria	C	1,566	195					
Niger Territory	C	772	212					
Portuguese East Africa	C	39	7					
Senegal	C	17						
Sudan (French)	C	213	61		22			
Tunisia	C	1						
Union of South Africa	C	823						
Zanzibar	C	[1] 2						
ASIA								
Ceylon	C	7						
China	C	9						
India	C	22,002	378					
Indochina (French)	C	2,908	254				[2] 121	
Iran	C	50						
Iraq	C	225	1					
Syria and Lebanon	C		175					
Trans-Jordan	C	2						
EUROPE								
France:								
Seine Department	C	44						
Unoccupied zone	C	13						
Great Britain:								
England and Wales	C	5						
Scotland	C	53						
Portugal	C	41	7		1	1		
Spain	C	200	4		1			
Turkey	C	[3] 105	223	37	27	123	49	
NORTH AMERICA								
Canada	C	4						1
Guatemala	C		6					
Mexico	C	93	3					
Panama Canal Zone	C	[4] 1						
SOUTH AMERICA								
Brazil	C	1						
Colombia	C	444						
Peru	C	[5] 1,147						
Venezuela (alastrim)	C	137						

[1] Imported.
[2] For the period Oct. 1–20, 1942.
[3] For the month of August 1942.
[4] In the Canal Zone only.
[5] For the period Jan. 1–June 30, 1942.

World distribution of cholera, plague, smallpox, typhus fever, and yellow fever—Continued

TYPHUS FEVER

[C indicates cases]

Place		January–August 1942	September 1942	October 1942—week ended— 3	10	17	24	31
AFRICA								
Algeria	C	34,550	363		72			
Basutoland	C	32						
British East Africa: Kenya	C	14	4					
Egypt	C	22,497	156					
Ivory Coast	C	4						
Morocco	C	25,546	120	25	30	39	44	
Nigeria	C	5						
Niger Territory	C	1						
Senegal	C	[1] 3						
Sierra Leone	C	7						
Tunisia	C	15,856	296		105			
Union of South Africa	C	613						
ASIA								
China	C	217						
India	C	7				2		
Iran	C	765						
Iraq	C	90	4					
Palestine	C	50	32	1	6			
Syria	C	22						
Trans-Jordan	C	5						
EUROPE								
Bulgaria	C	643	4					
Czechoslovakia	C	5						
France:								
Seine Department	C	1						
Unoccupied zone	C	228						
Germany	C	[2] 1,817						
Hungary	C	725	16	5	8	1	2	
Irish Free State	C	15						
Portugal	C	1						
Rumania	C	3,397	39	18		35	8	15
Spain	C	3,870						
Canary Islands	C	1						
Switzerland	C	1	2					
Turkey	C	305	28	4	3	4	6	
Union of Soviet Socialist Republics	C	67						
NORTH AMERICA								
Guatemala	C	121	11					
Jamaica	C	43	4					
Mexico	C	521	9					
Panama Canal Zone	C	1						
Puerto Rico	C	3						
SOUTH AMERICA								
Chile	C	49	8	2	2			
Colombia	C	1						
Ecuador	C	69	26		11		6	
Peru	C	923						
Venezuela	C	17						
OCEANIA								
Australia	C	27						
Hawaii Territory	C	34	4			2	2	

[1] Suspected.

[2] The report of 2,043 cases of typhus fever in Germany as published in the PUBLIC HEALTH REPORTS of Oct. 30, 1942, is an error. The number of cases reported should have been 1,817.

World distribution of cholera, plague, smallpox, typhus fever, and yellow fever—Continued

YELLOW FEVER

[C indicates cases; D, deaths]

Place		January–August 1942	September 1942	October 1942—week ended— 3	10	17	24	31
AFRICA								
Belgian Congo: Libenge	D	[1] 1						
British East Africa: Kenya	C	1						
French West Africa	C	1						
Gold Coast	C	[2] 2	[1] 1					
Ivory Coast	C	[2] 2	4			[3] 1		
Nigeria	C	1			[1] 1			
Senegal [4]	D	1						
Sierra Leone: Freetown	C	2						
Sudan (French)	D	1	1					
Togo: Hohoe	C	1						
SOUTH AMERICA [5]								
Brazil:								
Acre Territory	D	4						
Bahia State	D	1						
Para State	D	1						
Colombia:								
Boyaca Department	D	5						
Cundinamarca Department	D	4						
Intendencia of Meta	D	3						
Santander Department	D	4						
Venezuela: Bolivar State	C		1					

[1] Suspected.
[2] Includes 1 suspected case.
[3] Death.
[4] According to information dated Feb. 9, 1942, 15 deaths from yellow fever among Europeans have occurred in Senegal.
[5] All yellow fever in South America is of the jungle type unless otherwise specified.