

U. S. DEPARTMENT OF LABOR

JAMES J. DAVIS, Secretary

CHILDREN'S BUREAU

GRACE ABBOTT, Chief

THE PROMOTION OF THE WELFARE  
AND HYGIENE OF MATERNITY  
AND INFANCY

THE ADMINISTRATION OF THE ACT OF CONGRESS  
OF NOVEMBER 23, 1921

FISCAL YEAR ENDED JUNE 30, 1927



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## LETTER OF TRANSMITTAL

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U. S. DEPARTMENT OF LABOR,  
CHILDREN'S BUREAU,  
*Washington, June 25, 1928.*

SIR: There is transmitted herewith the report of the administration of the maternity and infancy act for the fiscal year ended June 30, 1927, prepared under the direction of Dr. Blanche M. Haines, director of the maternity and infant-hygiene division of the bureau. Inasmuch as this is a report on the fifth year that the Federal subsidy has been available for this work, material supplied by the States showing some of the results of the act are given in more detail than in previous reports.

As this report goes to press the provisional birth and death rates for 1927 have been made public by the Bureau of the Census, showing a very much greater saving of infant life in the registration area as a whole than in any previous year. Infant mortality rates for 1927 were lower than for 1926 in 30 of the 33 States for which figures for both years are available. In the 33 States and the District of Columbia in 1926, according to the Bureau of the Census, there were 1,759,429 births and 129,030 deaths of infants under 1 year of age. In 1927 there were 1,763,035 births and 113,391 infant deaths in the same area. For the birth-registration area the infant mortality (that is, the deaths of infants under 1 year of age per 1,000 live births) was 64 in 1927, as compared with 73 in 1926 and 76 in 1921.

The death rate fluctuates from year to year because of temporary and local causes. The trend or the level around which it fluctuates is a criterion of progress. The rate for 1927 establishes a new and very much lower level.

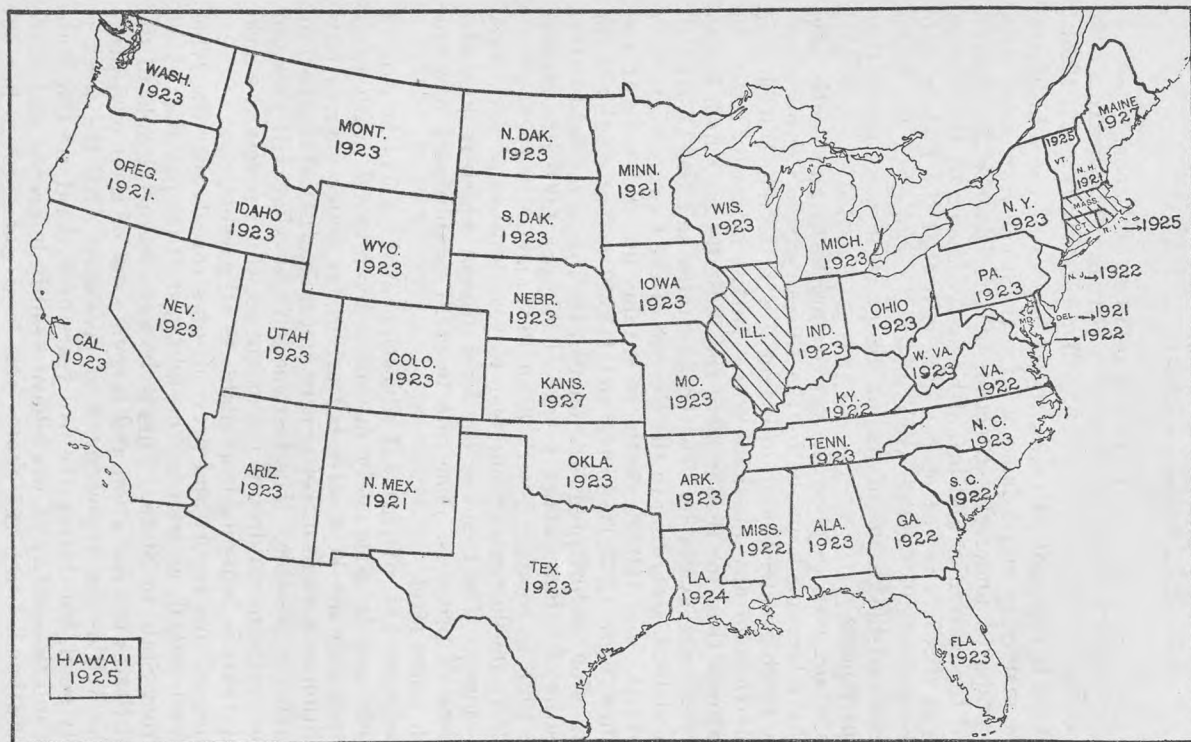
However, the value of parental education in the scientific care of children can not be adequately measured by lowered death rates. Children not only are kept alive but are in far better general physical condition as a result of better care, but no statistical comparison of these gains is possible. The best measure of what will prove of the greatest value to children is the extent to which practical education in child care is being made available to all parents.

A reading of this report and previous ones reveals that the types of work undertaken, as well as the administration practices, vary greatly from State to State. This is because the act leaves to the individual States the initiation and carrying out of their own plans of work as well as the appointment of personnel. All the work is not equally good, but during the five years of Federal aid the State programs and the quality of work have steadily improved and effective cooperation between the States and local communities has become more general.

Respectfully submitted.

Hon. JAMES J. DAVIS,  
*Secretary of Labor.*

GRACE ABBOTT, *Chief.*



STATES ACCEPTING THE BENEFITS OF THE ACT FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY, WITH DATES OF LEGISLATIVE ACCEPTANCE

[Diagonal lines indicate States not cooperating]

## THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY

The act for the promotion of the welfare and hygiene of maternity and infancy, known as the Sheppard-Towner Act, was passed by the Sixty-seventh Congress and approved by the President on November 23, 1921.<sup>1</sup>

At the close of the fiscal year 1927 all the States except three were cooperating under the provisions of the act, the three exceptions being Massachusetts, Connecticut, and Illinois; and the Territory of Hawaii also was cooperating, the Sixty-eighth Congress having extended to this Territory the benefits of the act.<sup>2</sup>

### EXTENSION OF THE AUTHORIZED APPROPRIATION FOR MATERNAL AND INFANT HYGIENE

Although the maternity and infancy act itself was permanent legislation, section 2 authorized an annual appropriation of \$1,240,000 for a five-year period only, which ended with the close of the fiscal year 1927. Believing that the authorization for appropriations should be extended, the Secretary of Labor with the approval of the President in December, 1925, recommended to the chairmen of the House and Senate committees which had considered the measure when it was previously before Congress that the appropriation in the amount originally specified should be authorized for the fiscal years 1928 and 1929.

The bill introduced by the chairman of the House committee (H. R. 7555) embodying the recommendation made by the Secretary for a two-year extension of the maternity and infancy appropriation was favorably reported by the Committee on Interstate and Foreign Commerce and passed the House April 5, 1926, by a vote of 218 to 44. The House bill was reported to the Senate by the Committee on Education and Labor with an amendment providing that the authorization should be extended for one year only. The bill did not come to a vote in the Senate until January 13, 1927. Although the votes recorded in connection with bringing it to a vote, such as making the bill unfinished business, indicated that more than two-thirds of the Senate favored the House bill, there was very determined opposition on the part of a few Senators, so that defeat by filibuster was threatened. To prevent this the friends of the measure proposed that with the expiration of the two-year extension of the authorized appropriation the act itself should be "after June 30, 1929, of no force and effect." With this compromise amendment the House bill was promptly passed by the Senate and the amendment concurred in by the House. Thus the appropriation has been authorized for the fiscal years 1928 and 1929, and the original act ceases simultaneously with the appropriation on June 30, 1929.<sup>3</sup>

<sup>1</sup> For text of the law see Appendix A, pp. 135-137.

<sup>2</sup> The most recent acceptances of the provisions of the act were those of Kansas, on Mar. 16, 1927, and of Maine, on Apr. 12, 1927.

<sup>3</sup> For text of this act (44 Stat. 1024) see Appendix A, p. 137.



## FUNDS AVAILABLE AND ACCEPTED BY THE STATES

The funds authorized by the maternity and infancy act first became available in March, 1922. The administration of the funds from that date to June 30, 1926, has been reported.<sup>4</sup> Table 1 shows the amounts available and the total amounts accepted by the States from the appropriations for the fiscal years 1922, 1923, 1924, 1925, and 1926, and for 1927 up to June 30, 1927.

TABLE 1.—Amounts available to States and Hawaii from Federal maternity and infancy funds and amounts accepted<sup>1</sup>

[Statement as of June 30, 1927]

State	Maximum amounts available from 1922 appropriation <sup>2</sup>	Amounts accepted by States from 1922 appropriation	Maximum amounts available from 1923, 1924, 1925, 1926, and 1927 appropriations	Amounts accepted by States and Hawaii <sup>3</sup> from—				
				1923 appropriation	1924 appropriation	1925 appropriation	1926 appropriation	1927 appropriation <sup>4</sup>
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Total	477,500.00	316,554.02	31,201,725.96	716,333.40	877,122.04	932,754.69	949,646.00	904,824.74
Alabama	10,297.56	10,297.56	25,836.95	25,836.95	25,836.95	25,836.95	25,836.95	25,836.95
Arizona	5,753.88	5,000.00	12,253.71	5,000.00	12,253.71	12,253.71	5,000.00	12,253.71
Arkansas	8,953.03	5,000.00	21,817.51	6,855.75	16,817.51	13,500.00	14,000.00	12,000.00
California	12,731.12	( <sup>5</sup> )	33,112.01	24,279.35	13,114.93	15,620.00	26,730.00	25,470.00
Colorado	7,119.83	5,000.00	16,337.20	9,976.99	9,999.33	9,999.37	10,000.00	10,000.00
Connecticut	8,114.75	8,114.75	19,311.48	9,655.74				
Delaware	5,503.10	5,503.10	11,504.01	11,504.01	11,504.01	11,504.01	11,504.01	11,504.01
Florida	7,184.90	5,000.00	16,531.72	8,621.28	16,531.72	16,531.72	16,531.72	16,531.72
Georgia	11,533.10	6,750.00	29,530.55	11,000.00	15,250.00	29,530.00	29,530.00	23,610.00
Hawaii			<sup>3</sup> 11,725.96			11,725.96	9,934.37	5,000.00
Idaho	5,974.30	5,000.00	12,912.66	6,250.00	7,912.66	5,691.60	9,308.40	6,000.00
Illinois	19,631.03	( <sup>5</sup> )	53,739.10					
Indiana	11,611.07	8,199.09	29,763.62	24,995.00	26,250.00	25,750.00	25,000.00	25,000.00
Iowa	10,423.56	10,423.56	26,213.60	26,213.60	26,213.60	26,213.60	26,213.60	26,213.60
Iowa	8,991.51	8,991.51	21,932.52	12,097.33				16,800.00
Kansas	8,991.51	8,991.51	26,298.64	26,298.64	26,298.64	26,298.64	26,298.64	26,298.64
Kentucky	10,452.00	10,452.00	22,129.80				22,129.80	22,129.80
Louisiana	9,057.50		15,179.77					5,000.00
Maine	6,732.66		19,777.05	19,277.05	19,269.05	19,164.58	19,277.00	19,277.00
Maryland	8,270.49	7,913.57	35,981.70					
Massachusetts	13,691.06		34,741.11	34,741.11	34,741.11	34,741.11	34,741.11	34,741.11
Michigan	13,276.07	13,253.97	26,099.65	26,099.65	26,099.65	26,099.65	26,099.65	26,099.65
Minnesota	10,385.44	10,385.44	22,076.58	22,076.58	22,076.58	22,076.58	22,076.58	22,076.58
Mississippi	9,039.70	9,039.70	28,527.38	21,762.17	24,000.00	25,000.00	25,000.00	32,958.19
Missouri	12,679.67	12,473.15	13,701.91	13,701.91	13,701.91	13,701.91	13,700.00	13,700.00
Montana	6,238.31	6,238.31	18,743.21	17,661.69	7,409.50	11,915.00	12,980.00	11,000.00
Nebraska	7,924.66	7,924.66						

<sup>1</sup> Under the terms of the act each State accepting receives \$5,000 outright; an additional \$5,000 is available to each State if matched; the balance of the appropriation is distributed among the States, if matched, on the basis of population. Amounts shown as accepted are the amounts actually accepted by the States less refunds of unexpended balances returned to the Federal Treasury as of June 30, 1927.

<sup>2</sup> Owing to the fact that only a few months of the 1922 fiscal year remained at the time the appropriation act for that year was passed a full appropriation was not made.

<sup>3</sup> The benefits of the act were extended to Hawaii on Mar. 10, 1924. No appropriation therefore was available to that Territory in 1923 and 1924. The total amount available to the States in each year from 1923 to 1927 has been \$1,190,000.

<sup>4</sup> These funds are available until July 1, 1928. Actual acceptances up to June 30, 1927, are here given.

<sup>5</sup> California and Illinois accepted the full amount available. However, these funds were not spent but were returned to the Federal Treasury.

<sup>6</sup> The Promotion of the Welfare and Hygiene of Maternity and Infancy. U. S. Children's Bureau Publications Nos. 137, 146, 156, and 178. Washington, 1924, 1925, 1926, and 1927.

TABLE 1.—Amounts available to States and Hawaii from Federal maternity and infancy funds and amounts accepted—Continued.

State	Maximum amounts available from 1922 appropriation	Amounts accepted by States from 1922 appropriation	Maximum amounts available from 1923, 1924, 1925, 1926, and 1927 appropriations	Amounts accepted by States and Hawaii from—				
				1923 appropriation	1924 appropriation	1925 appropriation	1926 appropriation	1927 appropriation
Nevada.....	<i>Dollars</i> 5,174.63	<i>Dollars</i> 5,000.00	<i>Dollars</i> 10,522.06	<i>Dollars</i> 5,000.00	<i>Dollars</i> 10,522.00	<i>Dollars</i> 10,522.00	<i>Dollars</i> 10,522.00	<i>Dollars</i> 10,522.00
New Hampshire.....	5,999.61	5,000.00	12,988.31	5,000.00	12,988.31	12,988.31	12,988.31	12,988.31
New Jersey.....	12,119.83	12,119.83	31,284.55	31,284.55	31,284.55	31,284.55	31,284.55	31,284.55
New Mexico.....	5,812.96	5,812.96	12,430.33	12,430.33	12,236.40	12,430.33	12,430.33	12,430.33
New York.....	28,429.70		80,041.78		80,041.78	80,041.78	80,041.78	80,041.78
North Carolina.....	10,773.47	10,773.47	27,259.66	27,259.66	27,259.66	27,259.66	27,259.66	27,259.66
North Dakota.....	6,459.36	5,000.00	14,362.74	6,000.00	6,000.00	8,300.00	8,300.00	6,500.00
Ohio.....	17,993.41	7,187.95	48,843.46	11,900.00	17,297.89	26,606.96	31,400.73	5,000.00
Oklahoma.....	9,575.88	5,000.00	23,679.48	5,000.00	20,934.06	23,679.17	23,679.48	23,679.48
Oregon.....	6,767.35	6,232.61	15,283.46	8,000.00	15,283.46	15,283.46	12,395.87	15,283.46
Pennsylvania.....	24,672.69	24,667.12	68,810.99	68,810.20	68,810.99	68,810.99	68,810.99	68,810.99
Rhode Island.....	6,363.54		14,076.28		4,999.86	14,076.28	14,076.28	14,076.28
South Carolina.....	8,798.54	8,797.50	21,355.65	21,355.65	21,355.65	21,355.47	21,355.65	21,355.65
South Dakota.....	6,436.07	6,436.07	14,293.11	12,844.24	14,272.92	13,451.18	14,293.11	5,000.00
Tennessee.....	10,274.35	5,000.00	25,767.55	18,521.94	22,410.73	25,767.55	25,767.55	24,795.00
Texas.....	15,520.41	9,363.93	41,450.52	32,567.38	40,689.20	40,447.84	35,350.52	35,350.52
Utah.....	6,013.85	5,000.00	13,030.89	6,365.00	13,000.00	13,000.00	13,000.00	13,000.00
Vermont.....	5,795.09	(e)	12,376.90		2,775.33	4,281.36	5,000.00	5,000.00
Virginia.....	10,209.61	10,209.61	25,574.00	25,574.00	25,574.00	25,574.00	25,574.00	25,574.00
Washington.....	8,060.58	4,998.70	19,149.55	10,000.00	10,000.00	10,000.00	10,000.00	5,000.00
West Virginia.....	8,302.16	5,000.00	19,871.74	5,000.00	10,000.00	16,000.00	19,871.74	19,871.74
Wisconsin.....	10,938.04	8,995.03	27,751.62	27,750.44	27,751.62	27,751.62	27,751.62	5,000.00
Wyoming.....	5,438.57	4,998.87	11,311.12	5,000.00	11,000.00	6,600.00	6,600.00	7,500.00

<sup>e</sup> Vermont accepted \$5,000, but it was returned to the Federal Treasury.

Under the terms of section 2 of the maternity and infancy act "so much of the amount apportioned to any State for any fiscal year as remains unpaid to such State at the close thereof shall be available for expenditures in that State until the close of the succeeding fiscal year."<sup>5</sup> Consequently 1927 funds may be accepted and expended during the fiscal year 1928. (See pp. 33-34.)

<sup>5</sup> In this connection reference may be made to rulings of the Comptroller General of the United States Treasury in regard to the appropriations for carrying out the maternity and infancy act:

"That any interest accruing while the moneys are held by the States inures to the benefit of the United States as owner of the funds and not to the States as trustees and should be accounted for and paid into the United States Treasury accordingly. The law does not contemplate, however, that the money shall be held by the States and bear interest, but shall be promptly applied to the purpose for which furnished, and the amounts should not be furnished in amounts necessarily resulting in large sums being held and thus bearing interest." (May 12, 1922.)

"That in case the State fails to appropriate an amount specifically equal to the amount of the allotment authorized by the Federal appropriation, moneys applied to the same purpose through other State appropriations may not be considered as making the appropriated funds of the State equal to the allotments authorized by the Federal appropriation unless it is established that the fact that the other appropriation was available for the 'services and facilities provided for in this act' controlled the State legislature in making its specific appropriation, in which case there would be justification for considering these moneys in determining that the amount appropriated by the State is equal to the Federal allotment." (June 23, 1923.)

## SUMMARY OF STATE ACTIVITIES DURING 1927

The State agency to which the administration of the maternity and infancy act within each State is intrusted in accordance with section 4 of the act initiates the plan of work for that State and submits it for approval, together with a budget covering proposed expenditures for the period, to the Federal Board of Maternity and Infant Hygiene.<sup>6</sup> Previous reports of the administration of the act have reflected the independence of the States in making and carrying out their own plans. These have varied with climatic conditions, geographical barriers and means of communication, economic conditions, race, nativity, and density of the population, availability of medical and nursing service, and the existing local child-health activities. During the past year the Federal board has had before it plans for very different activities and different methods for carrying out the same activities. The board's function has been to decide, not whether the plans of the State bureau or division of child hygiene are in its opinion the best possible, but whether the expenditures proposed under the plans are "in conformity with the provisions of this act and reasonably appropriate and adequate to carry out its purposes."<sup>7</sup>

### TYPES OF WORK

The types of work undertaken in the States under the maternity and infancy act are quite uniformly educational. It is therefore a logical extension of the American principle of providing free public education for the people. In this instance education in the hygiene of maternity and infancy is offered to parents and prospective parents.

Practically all State work falls into one of three classes, as follows:

1. Instruction of the individual through any of the following methods: Instruction of parents at itinerant conferences conducted by physicians and nurses as to the care of the mother and child, the same type of individual instruction in conferences at permanent centers conducted by physicians and nurses, instruction of mothers through home visits by public-health nurses and by demonstrations in the home in infant and maternal care.

2. Instruction of groups through lectures, motion pictures, slides, charts, and exhibits; classes in infant and child care for girls 10 to 15 years of age; classes in infant care and prenatal care for mothers; classes in infant care and prenatal care for teachers to prepare them to include maternity and infancy instruction in their class work; instruction of midwives in classes and groups, and to some extent individually; graduate courses in maternity and infancy work for

<sup>6</sup> See sec. 3 of the act, Appendix A, p. 135.

<sup>7</sup> See secs. 8 and 12 of the act, Appendix A, pp. 136, 137.



nurses through State or regional conferences and institutes; graduate courses in pediatrics and obstetrics for physicians (usually in conjunction with State or county medical societies).

3. Instruction through the dissemination of literature prepared by the State or by the Federal Government on phases of maternal care, infant care and hygiene, child care and management, and other features of the work.

#### PERSONNEL OF THE ADMINISTRATIVE STAFFS

In each State the personnel of the bureau or division administering the maternity and infancy act is determined by the needs of the State and the size of its budget. Physicians, nurses, dentists or dental hygienists, and clerks make up the major part of the personnel.

During the fiscal year 1927 physicians directed the work in the Territory of Hawaii and in 30 States: Arkansas, California, Delaware, Georgia, Idaho, Indiana, Kansas, Kentucky, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin, and Wyoming. Nurses directed the work in 9 States: Alabama, Florida, Nebraska, New Hampshire, New Mexico, Oregon, South Carolina, Washington, and West Virginia. In 5 States—Arizona, Colorado, Iowa, Louisiana, and Nevada—the administrative heads were neither physicians nor nurses.

Including State directors, 40 physicians on the State staffs gave full-time service for the entire year, and 20 gave full-time service for part of the year. Ten additional physicians gave part-time service (seven for the entire year, three for part of the year). Additional physicians were employed to conduct child-health or prenatal conferences and to do special work. For example, New York State paid 209 physicians for occasional service.

Public-health nurses were on the staff of every State bureau or division. Approximately 770 nurses were employed for some period during the year. Of these, 190 headquarters staff nurses were paid from maternity and infancy funds for full-time service, and about the same number were paid for part-time service, for all or part of the year. Of the 354 county nurses whose salary was paid wholly or in part out of maternity and infancy funds, 87 were paid for full-time service and 267 were paid for part-time service, for all or part of the year. The other nurses included temporary employees and nurses who worked in towns in some cooperative relationship with the States.

Dentists or dental hygienists were employed for varying periods by eight States—Iowa, Louisiana, Maryland, Mississippi, New York, Pennsylvania, Utah, and Virginia. Supervisors and teachers of midwives were employed in nine States—Arkansas, Louisiana, Michigan, Mississippi, New Jersey, New York, Pennsylvania, Tennessee, and West Virginia. Six States reported maternity and infant home inspectors; other workers included lecturers, laboratory assistants, vital-statistics workers, accountants, clerks, stenographers, motion-picture operators, and chauffeurs.

Volunteer workers were reported as giving service in 17 States. These included physicians, dentists, nurses, and lay persons. Physi-

cians and dentists gave their services at conferences and centers. Lay workers sponsored conferences, assisted at centers and conferences, and did follow-up work after conferences. Many nurses gave similar service.

### CONFERENCES

Conference work has been one of the main methods of teaching infant and child care and also prenatal care in the cooperating States. Through the conferences many parents have received for the first time important information on the care and hygiene of their children, and expectant mothers have learned of the value of prenatal care for both their babies and themselves. Some of the conferences have been held regularly at permanent health centers to which children and mothers returned in successive visits for advice or reexamination. The physicians who made examinations were assisted by staff nurses or other cooperating nurses. In many cases such conferences were part of the work of the county health officer in counties to which maternity and infancy nurses had been assigned. In contrast to conferences at permanent centers were the itinerant conferences, which were educational to the community as well as to the individual parents whose children were examined. Through itinerant conferences the community learns that the health conference is not a clinic for sick children nor an obstetrical clinic but an opportunity for the mother to have explained to her how to keep her baby and herself well by using intelligently the available medical service and also by improving the home care she gives to her children and herself. The staff for itinerant conferences usually consists of a physician and a nurse. In States using trucks (such as health-mobiles or health cars) additional personnel may include chauffeurs, motion-picture operators, and lecturers. The health cars usually carry exhibits, films, slides, charts, and posters in addition to their equipment for conference work. The motion pictures are shown in the evening, and talks are given to groups while the car is in the community. Through the medium of health cars information on maternal, infant, and child care may be carried to localities that are isolated and that may not be accessible for the more usual forms of health work. In some States a small automobile transports physician, nurse, and equipment for the itinerant conferences.

Five types of conference were reported to have been held during the year under review: Combined prenatal and child-health conferences conducted by physicians, child-health conferences conducted by physicians, prenatal conferences conducted by physicians, health conferences conducted by nurses only (with no physician present) for both children and expectant mothers, and dental conferences conducted by dentists. Dental conferences, at which dentists gave information on the development of the teeth and advice as to their care, were frequently conducted at the same time as the child-health conferences.

Eleven State bureaus or divisions reported a total of 1,808 combined prenatal and child-health conferences conducted by physicians, at which 1,263 expectant mothers and 27,382 infants and preschool children were examined. The number of visits reported made to the conferences in these States by expectant mothers was 1,570 (one State not reporting on this item); and the number of visits made by

children was 38,418. Child-health conferences conducted by physicians, at which children were examined and their mothers were given advice, were a feature of the work in 36 States and Hawaii. There were 21,347 such conferences, at which 136,813 infants and preschool children were examined. Infants and preschool children made 264,270 visits to these conferences in 34 States and Hawaii; 2 States did not report on this item. Physicians made examinations of infants and preschool children at child-health or combined prenatal and child-health conferences in 42 States and Hawaii.

Prenatal conferences conducted by physicians were included in the work of 22 States. There were 3,231 such conferences; 17,762 expectant mothers were registered for these conferences in 21 States, and 14,930 were examined by physicians in 19 States. The number of visits made to conferences by expectant mothers was 32,274. One State did not report the number of mothers registered, and three States did not report the number of visits.

Health conferences were conducted by nurses (with no physician present) in 25 States. Usually they were held in connection with baby-weighing stations or were a feature of the work in counties to which maternity and infancy nurses had been assigned. The number of conferences reported held by nurses was 6,273. The number of children reported inspected by them was 34,519, and the number of mothers reported as having been advised on prenatal care was 8,260.

To sum up, in 43 States and the Territory of Hawaii 200,223 infants and preschool children were examined by physicians or advice as to their care was given by physicians or nurses, and in 34 States 27,377 women were given prenatal advice by physicians or nurses.

Dental conferences were conducted in 16 States. The total number of conferences reported by 15 of these States was 1,124, and 27,870 preschool children were reported as receiving advice on the care of their teeth. A total of 1,664 expectant mothers were reported advised, but only three States reported on this item.

Table 2 summarizes the conference work in the cooperating States and the Territory of Hawaii.

TABLE 2.—Conferences held and permanent centers established in the States and the Territory of Hawaii cooperating under the maternity and infancy act during the year ended June 30, 1927

States and Territory cooperating	Conferences conducted by physicians									Conferences conducted by nurses					Conferences conducted by dentists			New centers established <sup>1</sup>				
	Combined prenatal and child health					Child health			Prenatal			Number of conferences	Children inspected	Mothers instructed	Visits to conferences by—		Number of conferences	Persons receiving dental advice		Combined prenatal and child health	Child health	Prenatal
	Number of conferences	Expectant mothers registered	Children registered	Visits to conferences by—		Number of conferences	Children registered	Number of visits	Number of conferences	Expectant mothers registered	Number of visits				Children	Expectant mothers		Expectant mothers	Children			
				Expectant mothers	Children																	
Total.....	1,808	1,355	27,382	1,570	38,418	21,347	138,322	264,270	3,231	17,762	32,274	6,273	34,519	8,260	73,616	5,029	1,124	1,664	27,870	70	235	14
Alabama.....						2,396	7,856	15,241	358	2,766	(?)	378	2,614	4,487	6,000	(?)			3			
Arizona.....						33	722	891				23	248		16	9		367				
Arkansas.....	124	61	1,754	61	1,754	52	1,570	1,570	1	16	16	21	298	50	298	50					4	2
California.....						360	8,118	9,178	78	186	626	21	935		1,696						21	1
Colorado.....						51	2,353	2,353	19	237	237						47		2,353		2	
Delaware.....	39	12	973	12	973	276	702	3,808	52	262	587	1,086	2,642	292	21,356	687				1		
Florida.....						40	1,184	1,184	59	488	488	377	4,461	887	(?)	(?)	287	(?)	(?)	3	5	
Georgia.....						638	8,942	14,629	293	5,854	(?)	42	389	44	(?)	(?)				1	1	
Hawaii.....						1,302	5,629	21,832												12		
Idaho.....	96	8	3,983	8	3,983																	
Indiana.....						204	6,078	6,078														
Iowa.....						198	4,255	4,255	75	(?)	(?)	99		(?)		(1)	105		1,358			
Kentucky.....						333	6,204	6,408	36	1,063	3,037										10	
Louisiana.....						210	6,571	6,821	16	88	88	16	3,170	457	3,170	457	80		4,316			
Maryland.....						380	5,579	5,579				32	435	26	(?)	(?)	55		490	2		
Michigan.....						141	2,711	2,711	65	91	91								4			1
Minnesota.....						4	69	69	13	95	95											
Mississippi.....						282	3,097	3,097									68	1,418	7,000			
Missouri.....						201	2,376	3,504				298	6,356	* 311	6,356	(?)	29		1,790		4	
Montana.....	2	10	13	10	17	104	1,627	1,676	2	5	5	389	3,417	58	3,417	128				1		
Nebraska.....						56	2,056	2,056														
Nevada.....	6	11	93	11	93							356	149	68	852	112						
New Hampshire.....						139	4,259	4,259														

MATERNITY AND INFANCY

New Jersey						736	623	6,234	36	71	182	240	913		9,956						12	1	
New Mexico												171	859		1,660	(?)	1		3		2	1	1
New York						1,012	6,742	15,006	1,480	4,860	22,080	974	(?)	(?)	5,422	2,091	198		2,624		2	10	8
North Carolina	386	723	3,043	723	3,939																1		
North Dakota						208	5,312	5,312															
Ohio						76	3,580	3,580															18
Oklahoma	87	8	1,046	(?)	1,046	72	1,803	1,803	1	4	4												
Oregon						146	2,350	(?)	218	330	1,273						51	(?)	582		5	2	
Pennsylvania						9,689	15,456	85,089	312	1,055	2,837												37
Rhode Island						34	446	(?)				123	446		2,001								
South Carolina						196	3,099	3,516	48	67	268	8	77	17	77	17					1		
South Dakota	78	42	3,172	42	3,172							8	12		12		1		150				
Tennessee						363	3,603	3,603	8	21	21	74	792		792								8
Texas						357	3,209	3,967	17	166	268	643	3,361	92	4,079	382	48	147	1,260			54	
Utah	409	82	4,378	82	10,558							2	21		21		125				23		
Vermont						3	85	85															
Virginia	124	105	291	304	703	335	4,454	5,468				602	2,517	191	5,055	444	(?)		3,283		9	16	
Washington						69	3,992	3,992															
West Virginia						614	828	8,634	44	37	71	238	407	195	929	195	20	99	373			17	
Wisconsin	457	293	8,631	317	12,180																14		
Wyoming						37	782	782				59			450		450						

<sup>1</sup> New permanent health centers, whose support has been assumed wholly or in part by the respective counties or communities in the majority of the States.

<sup>2</sup> Not reported.

<sup>3</sup> Includes some mothers instructed in nurses' offices.

<sup>4</sup> May include some conferences at which physicians were present.



## PERMANENT PRENATAL AND CHILD-HEALTH CENTERS

Permanent locally supported centers have been developed in many communities in which itinerant conferences had been held. The itinerant conference has shown the need for a permanent source of information on maternal and infant care, and the community has assumed the responsibility of supplying it through establishment and support of a permanent center.

The establishment of permanent prenatal and child-health centers is extremely important in the development of the work for the promotion of the welfare and hygiene of maternity and infancy. The local support of a center demonstrates the interest of the community in the welfare of mothers and children of that community. When a county has reached the point of maintaining a center and paying both physician and nurse for services at the center, this county has assumed some responsibility for maternal and infant care. In many counties in which the unit cost of the work is high and county resources are limited, State assistance in maternity and infancy work will be necessary for some years, perhaps permanently, just as State subsidies for local education have been found necessary in many States.

Centers vary in form. The most useful centers are those supported entirely by local funds, for which the community has assumed responsibility. Local physicians and nurses conduct the conferences in rooms equipped and maintained for the purpose, and conferences are held regularly once a month, once a week, or oftener. Another type is supported by the county or a local group, but the nurse arranges for conferences at more or less regular intervals, using whatever rooms are available, such as schoolhouses or town halls. The nurse carries the scales with her; blankets or sheets are used to form examining cubicles; and local physicians examine the mothers and children. Many conferences of this type are held at regular intervals with State staff or county health staff supplying the nurses and physicians. If county health departments exist the conferences may be held in the offices of the county departments, many such departments having a conference room for this purpose.

The regularity with which conferences are held in rural and isolated districts is influenced by climatic conditions and the transportation difficulties and also by the availability of county or State physicians and nurses for conducting conferences. In many districts the nearest local physicians and nurses are too remote or too few in number to make frequent conferences possible.

Complete reports of attendance at centers and amount of work accomplished are not available owing to the fact that as soon as a center becomes the responsibility of a community and ceases to have State assistance or supervision it may or may not send detailed reports to the State bureau or division of child hygiene. Whether or not a full report of the local center is regularly furnished to the State department the State through its bureau or division continues to keep in touch with the local work and helps in the solution of problems that arise from time to time.

Three types of centers have been developed: Combined prenatal and child-health centers attended by both mothers and children, child-health centers in which children are examined and advice is

given in regard to their care, and prenatal centers. During the year under review a total of 319 new permanent health centers of the three types were reported established by 26 States and the Territory of Hawaii. (Table 2.) A total of 70 combined prenatal and child-health centers were established in 13 States: Alabama, Delaware, Florida, Maryland, Michigan, New Mexico, New York, North Carolina, Oregon, South Carolina, Utah, Virginia, and Wisconsin—the State of Utah leading with the establishment of 23 combined prenatal and child-health centers. A total of 14 new prenatal centers were established in 6 States: Arkansas, California, Michigan, New Jersey, New Mexico, and New York. A total of 235 new child-health centers were established in the Territory of Hawaii and 18 States: Arkansas, California, Colorado, Florida, Georgia, Kentucky, Missouri, Montana, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Virginia, and West Virginia.

### CORRECTION OF DEFECTS

A child-health conference has a twofold purpose—that of disseminating information to parents on the care and hygiene of infants and preschool children and that of examining so-called well children and pointing out to the parents any deviations from the normal that are found. No treatment is given, nor is remedial work done in these conferences. If defects or pathological conditions are found the parents are referred for corrections to the family physician so far as possible—or, in indigent cases, to community or county agencies or to treatment clinics if such are available. In some States a copy of the examination report is sent to the family physician. The method pursued of referring the parents for correction of defects to family physicians and other agencies precludes the collection of accurate data on correction of defects unless follow-up work is undertaken; and almost none of the States has sufficient workers on the staff to follow up all the children seen at conferences, either to urge parents to see that corrections advised are made or to ascertain whether corrections have been made.

Twenty States reported the approximate number or percentage of children for whom the parents had had defects corrected. Percentages of corrections of defects varied greatly. For example, Indiana reported that 5,932 children had 29,086 defects, and defects were corrected for approximately 60 per cent of the children. Wisconsin reported that 6,951 children had 14,820 defects, and parents had the defects corrected in approximately 25 per cent of the children.

### COUNTY HEALTH UNITS

Under legislation recently enacted, many of the State health departments are successfully promoting the establishment of full-time county health units. The minimum staff for a county health department should include a full-time medical health officer, a nurse, a sanitary inspector, and a clerk. On December 31, 1926, there were 341 county health departments in 34 States.<sup>8</sup> Excluding the New

<sup>8</sup> Smillie, W. C.: "The future of county health work in the United States." *Journal of the American Medical Association*, vol. 89 (Sept. 24, 1927), pp. 1034-1038.

England States, which operate local government chiefly through townships instead of counties, only nine States had no full-time county health units: Delaware, Idaho, Indiana, Michigan, Nebraska, Nevada, New Jersey, North Dakota, and Wisconsin. In a number of these the use of county funds for this purpose has not yet been authorized.

An impetus to county-unit organization has been developed through plans for rehabilitation of the areas flooded by the Mississippi River, by establishing in the sections of the States that were inundated full-time county and district health services with the assistance of the United States Public Health Service and the International Health Division of the Rockefeller Foundation. This increase in full-time county health departments has developed a greater demand for county nurses, and many States have included in their plans and budgets provisions for helping to finance maternity and infancy nursing services in these full-time county health departments as well as in counties not having full-time health departments or having no county health organizations. Placing a maternity and infancy nurse in the county has often been the first step in creating an interest in the establishment of a full-time county health department. During the year under review 354 nurses were detailed to counties in a total of 27 States, the expense being borne wholly or in part by the State bureaus or divisions.

The State agencies administering the funds have different methods of evaluating the amount of service the county nurse gives to maternity and infancy work in a generalized nursing service in order to insure that it is in proportion to the amount of maternity and infancy funds the nurse receives for work with mothers and children. This has been done through the monthly reports of nurses which show time and work given to maternity and infancy activities and also through the observations made by State supervisors of nurses.

The following activities of county units are considered maternity and infancy work: Home visits to mothers, infants, and preschool children; prenatal and child-health conferences; classes for mothers, girls, and midwives in which maternal and child care are taught; supervision of midwives; nutrition classes; time spent in promoting immunization of preschool children against diphtheria, typhoid fever, and smallpox; and collecting hookworm and other laboratory specimens from expectant mothers and preschool children.

#### HOME VISITS

Much of the maternity and infancy work is done by means of home visits made by itinerant nurses from the bureau or division staffs or by county or other local nurses paid in full or in part from maternity and infancy funds. The maternity and infancy program in certain States is largely a nursing program and aims to reach parents with advice on the care of mother and child through the contact of nurses with the individuals in the homes. A few States with relatively densely populated areas have sufficiently large staffs to permit some regular follow-up or periodic visits. Sparsely settled States find nurses' visits the most feasible plan for reaching remote and isolated settlers with information on the care of mothers and



children. Through the home visits the nurses teach mothers the importance of prenatal care in its influence on their own well-being and on that of the unborn infant. They emphasize the importance of breast feeding. They give instruction on the hygiene and care of infants and preschool children. They find children and mothers who need assistance and medical care and arrange for such care.

During the year under review 39 States and the Territory of Hawaii reported a total of more than 721,000 home visits by nurses. Practically all these were to expectant mothers, infants, and preschool children in their homes; some were to midwives. Virginia led in the number of home visits by nurses, with a total of 88,849 visits. Virginia also led in the number of county nurses (39) receiving some contribution toward their salaries from maternity and infancy funds. Pennsylvania reported 87,058 home visits by State nurses. Pennsylvania has in its State department of health a division of public-health nursing employing 125 to 135 nurses, whose service covers the State. These nurses were paid from maternity and infancy funds for time spent in maternity and infancy work. New York reported 73,784 home visits. Alabama, where the county-unit system is a major feature of the plan of work, reported 72,132 home visits. In Rhode Island, where the program stresses conference work and home visiting, nurses made 54,803 home visits. Georgia reported 42,862 visits, Delaware 32,458, and North Carolina 32,041. (Table 3.)

TABLE 3.—Number of visits made by nurses, number of community and group demonstrations, and number of counties in which maternity and infancy work has been done, in the States and the Territory of Hawaii cooperating under the maternity and infancy act, during the year ended June 30, 1927

States and Territory cooperating	Number of home visits by nurses	Number of community demonstrations	Number of group demonstrations	Number of counties in which maternity and infancy work has been done—		Number of counties in State
				Since the beginning of cooperation	During 1927	
Total.....	721,159	75	12,574	2,460	1,884	2,937
Alabama.....	72,132			31	31	67
Arizona.....	4,250	17	83	14	6	14
Arkansas.....	3,877		30	75	60	75
California.....	26,982	1	534	58	55	58
Colorado.....	1,627		41	57	51	63
Delaware.....	32,458	1		3	3	3
Florida.....	21,702			67	67	67
Georgia.....	42,862		3,882	149	117	161
Hawaii.....	11,155			4	4	5
Idaho.....	477		15	44	43	44
Indiana.....			520	91	36	92
Iowa.....				98	49	99
Kansas.....				8	8	105
Kentucky.....				120	86	120
Louisiana.....	408	2	127	60	48	64
Maryland.....	3,314		30	23	23	23
Michigan.....	9,311	3	66	83	68	83
Minnesota.....	4,334		676	87	75	87
Mississippi.....	3,699			82	82	82
Missouri.....	3,728	18		111	36	114
Montana.....	2,456	1	45	56	45	56
Nebraska.....	2,436		38	73	59	93
Nevada.....	9,180			17	17	17
New Hampshire.....	12,498		332	10	10	10

TABLE 3.— *Number of visits made by nurses, etc.*—Continued

States and Territory cooperating	Number of home visits by nurses	Number of community demonstrations	Number of group demonstrations	Number of counties in which maternity and infancy work has been done—		Number of counties in State
				Since the beginning of cooperation	During 1927	
New Jersey.....	15,314	12		21	21	21
New Mexico.....	10,322	6	282	27	14	31
New York.....	73,748	10	3,249	62	62	62
North Carolina.....	32,041			46	31	100
North Dakota.....	2,791			40	25	53
Ohio.....	19,146			77	65	88
Oklahoma.....	596		649	75	63	77
Oregon.....	15,723		(1)	36	22	36
Pennsylvania.....	87,058			67	67	67
Rhode Island.....	54,803		3	4	4	5
South Carolina.....	3,303	3	297	46	41	46
South Dakota.....	693		134	64	64	69
Tennessee.....	16,173		7	73	58	95
Texas.....	11,355		788	90	30	254
Utah.....	2,454		96	28	28	29
Vermont.....		1	14	12	8	14
Virginia.....	88,849		52	97	56	100
Washington.....	(1)		(1)	30	21	39
West Virginia.....	12,733		546	50	47	55
Wisconsin.....	1,811		(1)	71	69	71
Wyoming.....	3,360		38	23	9	23

<sup>1</sup> Not reported.

### COMMUNITY AND GROUP DEMONSTRATIONS

A phase of educational work carried through State programs from year to year has been the general instruction given to the public through actual demonstration of maternity and infancy work.

A "community demonstration" is usually carried on by workers whom the State bureau or division of child hygiene details to the community for the purpose. Assistance may be given by local physicians, nurses, and lay persons in some cases. The demonstration may cover one phase or several phases of the maternity and infancy work, and it may continue not only a few days but a few weeks or months or even a year or more. During the year under review 12 States conducted a total of 75 community demonstrations: Arizona, California, Delaware, Louisiana, Michigan, Missouri, Montana, New Jersey, New Mexico, New York, South Carolina, and Vermont. (Table 3.)

A "group demonstration" generally covers one or more specific phases of maternal, infant, or child care, and is made (usually by a nurse) in connection with a child-health conference, mothers' class, or other appropriate occasion, or before a group assembled for the purpose. Group demonstrations were conducted in 30 States: Arizona, Arkansas, California, Colorado, Georgia, Idaho, Indiana, Louisiana, Maryland, Michigan, Minnesota, Montana, Nebraska, New Hampshire, New Mexico, New York, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming. The total number of group demonstrations reported in 27 of these States was 12,574, Georgia leading with 3,882 and New York

being next with 3,249. Three States reporting group demonstrations did not report the number made.

### NUTRITION WORK

Instruction in nutrition has been a part of conference work, home visits, and class work. Through these agencies and through literature prepared and distributed by the States definite attention was given to breast feeding and the introduction of suitable foods into the infant's dietary at the proper times, also to food values and food elements in relation to the development and growth of the infant and the preschool child. The dietary that will supply the mother's requirements in the prenatal period and the effect of her diet on her unborn child have received much consideration. Twenty-four States and the Territory of Hawaii stressed nutrition in the information given to mothers at conferences, in the homes, or through other contacts. The Kentucky bureau of maternal and child health and the New York division of maternity, infancy, and child hygiene had nutritionists on their staffs, and these workers gave lectures and instruction on nutrition. Georgia and North Carolina also reported much attention to nutrition work.

### PROMOTION OF BREAST FEEDING

The higher death rate among infants artificially fed than among those breast fed has directed attention to the influence of the type of feeding on infant mortality. Thirty-two States have promoted breast feeding through talks by the State staff or advice given at conferences, through special literature, charts, films, and pictures on the subject, and through advice given by nurses in visits to the homes of expectant mothers and of mothers of newborn babies. The general educational work has included instruction of mothers as to the importance of keeping the baby on his mother's milk and as to methods of maintaining her supply of milk. Special work on breast feeding has been done in several States during the year under review. For example, New York conducted breast-feeding campaigns in three communities (Hornell, Ithaca, and Cortland County), and Michigan conducted breast-feeding surveys and campaigns in 10 counties.

### PRENATAL CARE

Early studies in the field of infant mortality showed clearly the relation of stillbirths and of some of the deaths of infants in the first month of life to the care, or more accurately the lack of care, that the mother had received during the prenatal period. Analysis of statistics of maternal deaths indicated a certain proportion of maternal deaths during both pregnancy and confinement to be attributable to conditions arising during pregnancy, and some of these deaths could have been prevented if the conditions referred to were recognized early in pregnancy. Other conditions that might influence childbirth could also be recognized through antenatal examinations of the mother and would influence or determine obstetrical procedures that would effect a saving of maternal and infant lives.

It was thus apparent from these statistical analyses that a certain proportion of early infant deaths, stillbirths, and maternal deaths could be prevented by medical supervision and proper care of pregnant women and by a thorough knowledge of conditions before the onset of labor.

Educational programs directed toward informing expectant mothers of the value of prenatal care and the necessity of placing themselves early under the supervision of their physicians would fall short of the desired result if the family physician did not render the service expected. The State bureaus and divisions of child hygiene have made an effort to meet this phase of the matter through the distribution to physicians of the Children's Bureau bulletin, *Standards of Prenatal Care*.<sup>9</sup> The standards outlined in this bulletin were formulated by a committee of leading obstetricians of the United States. According to the ideal standards referred to, the pregnant woman should make regular visits to her physician during her pregnancy—once a month in the first six months, then once every two weeks or oftener as indicated, and preferably every week in the last two months. She may expect a complete physical examination in an early visit, including pelvic measurements (if she has never had a living child), a Wassermann test, abdominal and pelvic examinations, urinalysis, taking of blood pressure, and advice in relation to diet, exercise, and general and special hygiene.

Copies of the bulletin, *Standards of Prenatal Care*, have been requested for distribution among the students in medical schools, and the best medical schools are providing class instruction in prenatal care as well as practice through prenatal centers in connection with their hospitals through out-patient departments. Two States (Kentucky and Oregon) contribute the services of nurses to prenatal centers used in the training of medical students.

It has been demonstrated that stillbirths and infant mortality due to syphilis may be lessened by the making of Wassermann tests as a matter of routine, followed by intensive treatment of the syphilitic mother as early in pregnancy as possible. Pelvic measurements may indicate the obstetrical procedure necessary to save the life of the infant and that of the mother. Information obtained by urinalyses and findings as to blood pressure indicating preeclamptic conditions may save not only the life of the mother but also that of the child.<sup>10</sup> Declines in neonatal mortality indicate the effect of prenatal care. Diet and hygiene of the mother can not be correlated so clearly with neonatal mortality, but unquestionably these influence the vitality of the child as well as that of the mother.

The establishment of prenatal centers or clinics offers a way of instructing women as to the need of supervision during pregnancy and of giving this type of care to women who otherwise could not obtain it. Organized effort to provide prenatal care as it is now understood seems to date from 1908, when the New York Association for Improving the Condition of the Poor and the pediatric department of the New York Outdoor Medical Clinic began to provide prenatal care for some of the women of New York City. Other

<sup>9</sup> *Standards of Prenatal Care*; an outline for the use of physicians. U. S. Children's Bureau Publication No. 153. Washington, 1925.

<sup>10</sup> Welz, W. E.: "Prenatal care benefits cause of public health." *The Nation's Health*, vol. 7 (February, 1925), pp. 93-95, 156.



cities followed this lead. In a health survey of 86 cities of 40,000 to 70,000 population the American Child Health Association reported that 40 of these cities in 1923 had established prenatal clinics under the guidance of physicians, and 5 had established mothers' conferences directed by the local nursing organizations.<sup>11</sup> In 1919 and 1920 there were prenatal clinics in 68 of the 83 cities whose population was approximately 100,000 or over according to the 1920 census, as ascertained in the course of a survey in which the American Public Health Association and the United States Public Health Service cooperated.<sup>12</sup> Undoubtedly the number has increased since that date. The beneficial effect of the prenatal care given is beyond question. It has been found that the number of deaths of women in childbirth, the number of stillbirths, and the number of deaths of infants under 1 month of age are less among groups of mothers who have had prenatal and maternity care under skilled direction than among groups not thus supervised with which comparison has been made.<sup>13</sup>

These prenatal clinics and centers have been found feasible in the cities and larger towns and have been promoted in them. Prenatal clinics have flourished when properly conducted in connection with hospitals that give obstetrical service. Successful prenatal centers have been established independently or combined with urban child-health centers. Reaching the rural districts with this prenatal service is much more difficult; but during the period of operation of the maternity and infancy act the States have been working out methods of making prenatal care available for rural women, and prenatal centers are developing, though slowly. This is indicated by the reports from the States of the establishment through their work of 84 prenatal centers and combined prenatal and child-health centers in 16 States during the year under review.

The prenatal center or conference in rural districts appears especially valuable in areas in which midwives are employed and in which the midwives will cooperate with the center in securing prenatal care for their patients. A few States have used the itinerant prenatal conference as a feature of their plans for rural work. The itinerant conference is an efficient means of demonstration for purposes of education, but no State would consider the itinerant prenatal conference a solution of the problem of providing prenatal care for rural women. Approximately 16,200 expectant mothers were examined by physicians in conferences during the year, but this is a relatively small proportion of the whole number of expectant mothers, even though it represents a considerable increase over the number of women reached through conferences in the preceding years.

Many States have directed their prenatal work from the point of view that the rural mother must look to her family physician for care at confinement and should look to him for her prenatal care. This being the case, the problem was to instruct her to present herself to her family physician for a complete physical examination

<sup>11</sup> A Health Survey of 86 Cities by the Research Division of the American Child Health Association, p. 116. American Child Health Association, New York, 1925.

<sup>12</sup> Report of the Committee on Municipal Health Department Practice of the American Public Health Association in Cooperation with the United States Public Health Service. Public Health Bulletin No. 136, pp. 1-2, 115. Washington, 1923.

<sup>13</sup> *Ibid.*, p. 116.

and for early and regular supervision during pregnancy. A general educational program through the distribution of literature and prenatal letters, correspondence courses, and instruction in classes and in home visits has carried this message to many women in the rural districts. During the year under review nurses have seen in the course of home visits approximately 40,000 expectant mothers and have emphasized to them the importance of early consultation of the family physician. Mothers' classes have reached more than 26,000 women with instruction on prenatal care, prenatal letters have been the means of instruction in prenatal care for approximately 33,000 women, and pieces of literature numbering hundreds of thousands on the subject of prenatal care have been distributed by the States. Instruction in prenatal care was given also to mothers at child-health conferences. No figures can accurately indicate the total number of women reached with general information on prenatal care and advice as to the great value of medical supervision during pregnancy.

County-wide demonstrations in prenatal care have been conducted in rural counties in New York and Michigan. The demonstration in Tioga County, N. Y., to which reference has been made in previous reports of the administration of the maternity and infancy act, was continued during the year; the nurses gave instruction in prenatal care, urged early consultation of the family physician, and rendered nursing service at the time of delivery. In Michigan's three county-wide prenatal demonstrations 645 mothers were under supervision from January 1, 1926, to June 30, 1927. In both States the cooperation of physicians, nurses, and expectant mothers was excellent, and appreciation of the service was general.

#### CARE DURING AND AFTER CONFINEMENT

Maternal mortality rates in the United States as compared with other countries having comparable registration of births and deaths have been high and are still high. With the information at hand these high maternal death rates can not be attributed to any one cause or to one group of causes. Isolation resulting in inaccessibility of medical, nursing, or hospital care at the time of confinement and the employment of unskilled midwives undoubtedly have contributed to the high death rate. Women from the Old World cling to the custom of employing midwives. There the midwives are trained and supervised; but in this country relatively few of even the white midwives have had training that meets Old World standards, while the negro midwives in the past have been almost entirely untrained.

In practically all the States in which the employment of midwives has been a feature of obstetrical practice, some attention has been given to supervising, licensing, and training. Many of the Mexican and Negro midwives of the Southern and Southwestern States have had class instruction and have been supervised and licensed; the most unfit have been eliminated. (See the following section.) The effect of this work can be given in general terms only, as but few of the Southern States which have had extensive midwife work have been in the United States birth-registration area long enough to show results of the work expressed in terms of maternal and infant mortality rates.

The development of entirely new groups of attendants at child-birth, such as the nurse-midwife, has not found a place in any State program, though unofficial agencies are conducting demonstrations. One State (Virginia) is training "doctors' helpers," groups of both white and colored women being given short courses of instruction to prepare them to give assistance to physicians in their obstetrical practice.

But untrained midwives and isolated mothers do not constitute the whole problem. Available statistics indicate that hospitals and maternity homes vary in their maternal mortality rates. Some of the high maternal mortality rates unquestionably are due to the fact that such institutions receive a large number of the difficult cases. There is a great variation in obstetrical practice in hospitals, and their mortality rates vary widely. The segregation of obstetrical patients is not universally observed by hospitals. The American College of Surgeons has set up standards for obstetrical hospitals and obstetrical departments of general hospitals (see p. 42), and these, together with the standards for obstetrical technique followed by the hospitals having very low mortality rates, furnish the guide that should be followed. The care given to obstetrical patients in hospitals and in maternity homes is outside the scope of the work of State agencies administering the maternity and infancy act, except as they may inspect maternity hospitals and homes and (as in California, Kansas, and South Dakota) license them.

Types of obstetrical care given by physicians influence maternal mortality rates. Obstetrical methods and technique vary with the physician. There is a slight downward trend in the rate of deaths from puerperal sepsis and a somewhat more marked decline in deaths from eclampsia or convulsions, but the rate of maternal deaths due to accidents of labor is slowly rising; possibly this may indicate a relation between accidents of labor and operative procedure in delivery. It has been suggested that operative deliveries may increase the neonatal deaths due to intracranial hemorrhage.<sup>14</sup> A study of maternal deaths which has been begun in several States with the assistance of the United States Children's Bureau may contribute to a better understanding of the influence of certain obstetrical practices on mortality from puerperal causes. (See p. 130.)

#### MIDWIVES

Early in the administration of the maternity and infancy act the States recognized the importance of the type of attendant at child-birth in relation to care during and after confinement and to maternal mortality. A number of States made surveys of attendants, particularly of midwives. Many States have no midwives or only a negligible number. Some States have a friend-and-neighbor type of midwife assisting as best she can when physicians are remote or inaccessible. Still other States have in their population large foreign-born groups accustomed to employing midwives. The midwife

<sup>14</sup> See "The present status of maternal and infant hygiene in the United States," by Lee K. Frankel (American Journal of Public Health, vol. 17, no. 12 (December, 1927), pp. 1209-1217), and "The rate of development of the immature and of the premature child," by Aaron Capper, M. D. (American Journal of Diseases of Children, vol. 35, no. 2 (February, 1928), pp. 262-288).

problem loomed largest in States having a large negro population with negro midwives as attendants at births.

As soon as knowledge of conditions was accumulated, many States through legislation or regulations passed by their boards of health sought to control or supervise the practice of midwifery. The States having any considerable number of midwives include instruction and supervision of midwives in their maternity and infancy programs; and an effort is made to have the midwives registered and licensed and to compel them to conform their practice to State regulations. The standards for qualification to practice vary in the different States. New Jersey requires midwives to complete a course in a recognized school of midwifery before they can be licensed. Some States require registration and a license to practice. This makes possible supervision and the revocation of licenses if occasion warrants.

In a number of States (mostly Southern, with large negro populations and many negro midwives) classes were conducted by nurses and by physicians. During the year under review 684 classes were organized in 12 States; 10,881 midwives were enrolled in 14 States; and 5,977 completed the course in 12 States, some having been carried over from the previous year. (Table 4.) The States conducting these classes were Arkansas, Delaware, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. Florida and New York did not report the number of classes, but Florida held 1,274 class meetings with a total attendance of 3,595, and New York held 10 class meetings. In many of these States registration and licensing of the midwife depend upon her completion of the course. Some negro graduate nurses have attended the classes and qualified as midwives. The old, the unfit, the diseased, ignorant, superstitious, and dirty midwives are being eliminated, and a better type of negro midwife is being developed.

White public-health nurses conducted many of the midwife classes, but Alabama, Georgia, Maryland, Mississippi, Tennessee, and Texas employed in either county or State work negro nurses whose duty consisted in part or entirely of teaching midwives. Two negro women physicians have been employed as instructors of negro midwives—one on the staff of the division of child hygiene and public-health nursing in Tennessee, and one on the staff of the United States Children's Bureau; the latter was lent during the year to the State of Georgia.

Some States reported other methods than classes for instructing midwives. Michigan requested the friend-and-neighbor type of midwife to attend the classes for mothers in prenatal and infant care, after which they were given special instruction in regard to the assistance they might render in childbirth. New Jersey held 92 monthly meetings of organizations of midwives with an attendance of 1,069 and has held four annual State conferences of midwives. Pennsylvania held two institutes for midwives with more than 200 in attendance. Several States reported that nurses gave individual instruction to midwives or visited them in their homes. North Carolina reported 1,098 visits to midwives, New Mexico 590, New York 304. South Carolina reported that 550 midwives were seen in such



visits; Arkansas stated that midwives were visited but did not report numbers.

Supervision is usually accomplished through State or county nurses, though many county health officers in the South have the power to register, license, and supervise midwives. In Pennsylvania two staff physicians assisted by nurses have supervised and instructed midwives in nine counties. The number of midwives under supervision varied greatly. For example, Mississippi reported 3,500, and Pennsylvania 521 in nine counties.

TABLE 4.—Classes conducted for instruction in maternal, infant, and child hygiene reported by 36 States and the Territory of Hawaii cooperating under the maternity and infancy act during the year ended June 30, 1927

States and Territory cooperating	Mothers' classes			Little mothers' classes			Midwives' classes		
	Number of classes organized	Mothers enrolled	Number of mothers completing course	Number of classes organized	Girls enrolled	Girls completing course	Number of classes organized	Midwives enrolled	Midwives completing course
Total.....	1, 196	26, 356	19, 998	1, 199	22, 191	18, 136	684	10, 881	5, 977
Alabama.....				(1)	751	125	(1)	1, 527	1, 087
Arizona.....	4	51	51	2	34	34			
Arkansas.....	5	25	(1)	6	112	(1)	19	398	
California.....	36	740	(1)	26	357	(1)			
Colorado.....	18	293	(1)	2	40	(1)	(2)		
Delaware.....				4	136	136	20	37	3 219
Florida.....				53	300	(1)	(4)	(4)	
Georgia.....	69	1, 207	1, 207	108	1, 915	1, 915	96	747	747
Hawaii.....				1	10	8			
Indiana.....	220	9, 749	9, 665						
Kentucky.....	79	3, 147	3, 147	234	4, 689	4, 689	17	165	165
Louisiana.....							48	848	138
Maryland.....	76	1, 223	856	12	245	180	2	35	12
Michigan.....	89	1, 036	1, 036	291	6, 379	6, 379		(5)	
Minnesota.....	77	1, 193	151	1	35	30			
Mississippi.....				(6)			255	3, 500	1, 000
Missouri.....	129	2, 325	58	121	1, 478	185			
Montana.....				14	214	214			
Nebraska.....	21		103	(7)					
Nevada.....	2	31	8	4	89	8			
New Hampshire.....	15	291	282	41	409	198			
New Jersey.....	5	73	70	20	250	238	(4)	275	
New Mexico.....	26	147	138	44	931	732			
New York.....	52	(8)	370				(4)		
North Carolina.....							5	275	9 1, 333
Ohio.....				112	2, 074	2, 002			
Oklahoma.....	4	141	80	(10)				(11)	
Oregon.....	3	59	16	11	216	216			
Rhode Island.....	4	57	(1)						
South Carolina.....	3	105	12 210				48	576	373
South Dakota.....	57	1, 901	1, 733						
Tennessee.....	60	561	323				50	966	723
Texas.....	38	611	136	(13)			41	499	123
Utah.....	5	120							
Virginia.....	57	495	275	10	235	154	83	1, 033	57
West Virginia.....	42	775	83	82	1, 292	693			
Wisconsin.....				(14)					

<sup>1</sup> Not reported.

<sup>2</sup> Nine midwives given individual instruction.

<sup>3</sup> Includes 182 carried over from previous year.

<sup>4</sup> Florida held 1,274 meetings for midwives with an attendance of 3,595; New Jersey held 92 meetings with an attendance of 1,069; New York held 10 meetings.

<sup>5</sup> Thirty-five midwives attended mother's classes, completing the course.

<sup>6</sup> Sixty-five hygiene classes reported with 1,500 girls enrolled and 1,162 completing the course.

<sup>7</sup> Two infant-hygiene classes held with 79 girls enrolled, all of whom completed the course.

<sup>8</sup> 8 to 30 in each class.

<sup>9</sup> Includes 1,058 carried over from previous year.

<sup>10</sup> Forty infant-hygiene classes held with 902 girls enrolled and 882 completing the course.

<sup>11</sup> Midwives given individual instruction by county nurses.

<sup>12</sup> Includes 105 carried over from previous year.

<sup>13</sup> One hundred and forty-two junior clubs organized with 3,190 girls and boys enrolled.

<sup>14</sup> Infant-hygiene classes held in public schools.

## INSPECTION OF MATERNITY AND INFANT HOMES

The licensing and supervision of maternity and infant homes is usually done through the public-welfare departments of the States rather than the health departments, but inspection of maternity or infant homes or of both maternity and infant homes by the staffs of the child-hygiene bureaus or divisions of a number of States was reported. Thirteen States reported inspecting 880 maternity homes, making 1,219 inspections: California, Colorado, Kansas, Kentucky, Nebraska, New Hampshire, New Jersey, New York, Ohio, South Dakota, Texas, Utah, and Virginia. In California, Kansas, and South Dakota the agency administering the maternity and infancy act has the power to license maternity homes and hospitals as well as to inspect. Nine States reported inspecting 823 infant homes, making 1,926 inspections: Delaware, Kansas, Kentucky, Nebraska, New Hampshire, New Jersey, New York, Texas, and Utah.

CLASSES FOR ADULTS IN INFANT AND PRENATAL CARE <sup>15</sup>

Classes in which women were taught maternal, infant, and child care were conducted in 27 States. The total number of classes reported organized was 1,196, the number of lessons in the course varying from 3 to 24. There were enrolled 26,356 women, mostly mothers, and 19,998 women were reported as completing the courses. (Table 4.) The States reporting such courses were: Arizona, Arkansas, California, Colorado, Georgia, Indiana, Kentucky, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, and West Virginia.

Indiana continued adult classes as a major feature of the State program of disseminating information on prenatal and infant care. The plan is to cover every county in the State with this type of class work, and all but 5 of the 92 counties have been covered. Three units composed of a physician who lectures and a nurse who organizes classes and gives demonstrations are working in this State. Indiana led in the number of classes organized—220, with an enrollment of 9,749 women, of whom 9,665 completed a course of 5 lessons. In Michigan a unit consisting of a physician and a nurse conducted 89 classes with an enrollment of 1,036 women, all of whom completed a course of 8 lessons. The classes in other States were usually conducted by nurses, Missouri leading this group of States with 129 classes and 2,325 women enrolled. Kentucky conducted 79 classes, with 3,147 women enrolled and completing a course of 4 lessons. South Dakota enrolled 1,901 women in 57 classes, and 1,733 women completed a course of 7 lessons. Georgia reported 69 classes with an enrollment of 1,207 women, all of whom completed a course of 11 lessons.

<sup>15</sup> For report of instruction on prenatal care given through correspondence courses and prenatal letters see pp. 25-26.

**CLASSES FOR GIRLS IN INFANT CARE ("LITTLE MOTHERS' CLASSES")**

Instruction in infant and child care was given during the year to girls about 10 to 15 years of age in 27 States and the Territory of Hawaii. (Table 4.) The total number of classes reported organized was 1,199. There were 22,191 girls enrolled, and 18,136 girls completed courses consisting usually of 10 to 12 lessons. The States reporting classes were: Alabama, Arizona, Arkansas, California, Colorado, Delaware, Florida, Georgia, Kentucky, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Oregon, Texas, Virginia, West Virginia, and Wisconsin. Michigan led in the number of classes organized (291) and in the enrollment of 6,379 girls, all of whom completed the course. Kentucky reported 234 classes, with 4,689 girls enrolled and completing the course. Ohio conducted 112 classes, with 2,074 girls enrolled, 2,002 of whom completed the course. In Wisconsin the State board of health awarded certificates to 4,988 girls who completed the course in infant hygiene given in the public schools; still other girls took the course but were not reported for the granting of certificates.

Usually the instruction was given by nurses and covered the care of the baby and the preschool child, bathing, dressing, and feeding the baby, regulation of his habits, methods of preparing formulas, diet of the preschool child, and prevention of communicable diseases.

**INSTRUCTION OF SPECIAL GROUPS IN MATERNAL AND INFANT CARE**

Several State bureaus and divisions have deemed it wise to disseminate the latest information on care of mothers and infants to special groups which in turn inform the public on maternal and infant care and hygiene. This type of instruction has been directed particularly toward physicians, nurses, and teachers.

Graduate or extension courses or lectures on pediatrics and obstetrics have been conducted for physicians in a few States. These courses usually were given in cooperation with medical schools or extension divisions of universities or with State or county medical societies. During the year Alabama had a series of pediatric clinics conducted by a pediatrician on the staff of the bureau of child hygiene and public-health nursing; local physicians joined in a round-table discussion of cases presented. Maryland arranged lectures in pediatrics before six county medical societies. The lectures were given by the director of the State bureau of child hygiene and by members of the pediatric departments of two of the medical schools of the State. In Oklahoma the bureau of maternity and infancy cooperated with the extension division of the State university in conducting graduate courses in pediatrics for physicians, 32 courses of nine weeks each being given. Kentucky arranged a graduate course in obstetrics for rural physicians, the obstetrician being lent by the United States Children's Bureau, and Maryland arranged lectures in two counties by a professor of obstetrics from the State university medical school. New York arranged for 7 courses in pediatrics and

3 in obstetrics in various counties at the request of county medical societies.

Several State bureaus and divisions of child hygiene arranged or promoted special opportunities for the public-health nurses on State and county staffs to obtain the newest information on methods of informing parents about maternal and child care as well as the most advanced information on the hygiene and care of mothers and infants. In some States conferences were held at regular intervals in which methods and subject matter relating to maternal and infant welfare were discussed. In other States the field training of nurses was arranged through supervision by the State staff or through having the nurses work in counties in which there was a well-organized nursing service under an able supervisor. Special leave also was arranged to afford opportunity for graduate work. A majority of the States reported that maternity and infancy nurses on the State staff, including the county nurses receiving maternity and infancy funds, met the standards for public-health nurses formulated by the committee representing the National Organization for Public Health Nursing, the nursing section of the American Public Health Association, and the Conference of State and Provincial Health Authorities of North America in 1924.

Instruction for teachers or normal-school students to train them for conducting classes for girls in infant care or in infant and maternal care received attention in several States. In Indiana classes were conducted at a number of teachers' institutes. Oklahoma organized classes in which nearly 900 teachers were enrolled, more than 700 completing a course that averaged 15 lessons. In New Jersey a course of 10 lectures was given to the senior students of the five State normal schools. In Wisconsin, where infant-care courses were made a part of the public-school curriculum in 1923, the teachers are prepared for this work by instruction in normal schools and teacher-training departments of high schools. The staff of the Wisconsin bureau of child welfare includes an organizer and an assistant organizer of infant-hygiene classes who devote their time to teacher-training work. There is a growing tendency in the United States to introduce infant-care courses in continuation schools and in colleges, and in other ways to train young women in the fundamentals of infant care and hygiene. The cooperation of State departments of health and of public instruction affords great opportunities for increasing the knowledge of the care of infants among the next generation of mothers.

#### TALKS AND LECTURES

Information of a general character relating to the welfare of mothers and infants was given through talks and lectures in all except one of the cooperating States and in Hawaii. Thirty-eight child-hygiene bureaus or divisions reported addressing 13,442 lay groups. (Table 5.) Additional talks or lectures on phases of maternity and infancy work were given to 110 radio audiences in 18 States. Special information on maternal and infant care was transmitted to technically trained groups through talks and lectures. Twenty-nine bureaus or divisions reported talks or lectures given to 408 groups of physicians; these included addresses to dentists and



to health officers. Thirty-two reported special talks or lectures to 794 groups of nurses. Five States did not report the number nor the character of audiences addressed.

TABLE 5.—*Educational work conducted through talks and lectures, prenatal letters, and distribution of literature in the States and Territory of Hawaii cooperating under the maternity and infancy act during the year ended June 30, 1927*

States and Territory cooperating	Talks and lectures					Prenatal letters		Pieces of literature distributed
	Total	Number given to—				Number of new names enrolled	Number of sets distributed	
		Physicians	Nurses	Lay groups	Radio audiences			
Total.....	18,207	408	794	13,442	110	32,584	46,217	4,403,218
Alabama.....	2,023	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	.....	.....	150,103
Arizona.....	72	1	1	70	.....	159	( <sup>1</sup> )	56,783
Arkansas.....	103	11	11	80	1	.....	.....	52,645
California.....	448	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	1,787	5,526	128,740
Colorado.....	421	26	48	347	.....	.....	.....	12,250
Delaware.....	175	6	5	164	.....	432	372	61,100
Florida.....	285	55	.....	223	7	.....	.....	18,000
Georgia.....	329	6	3	299	21	.....	.....	109,141
Hawaii.....	13	1	1	11	.....	.....	.....	.....
Idaho.....	21	3	2	16	.....	293	325	13,054
Indiana.....	770	15	2	752	1	.....	.....	168,259
Iowa.....	238	<sup>2</sup> 40	18	165	15	.....	.....	53,378
Kansas.....	6	.....	1	5	.....	49	224	1,224
Kentucky.....	335	52	12	270	1	1,500	2,500	56,749
Louisiana.....	385	.....	385	.....	.....	618	618	18,531
Maryland.....	93	<sup>3</sup> 1	.....	89	3	.....	.....	129,000
Michigan.....	135	1	2	129	3	2,690	3,233	336,369
Minnesota.....	133	29	20	83	1	1,133	1,830	156,982
Mississippi.....	3,697	25	18	3,652	2	.....	.....	10,000
Missouri.....	555	32	10	489	24	820	812	534,848
Montana.....	770	.....	10	757	3	437	437	134,529
Nebraska.....	55	1	12	41	1	130	457	53,543
Nevada.....	107	.....	.....	107	.....	.....	1,000	2,547
New Hampshire.....	163	.....	4	159	.....	.....	.....	190,955
New Jersey.....	211	10	74	127	.....	.....	.....	55,877
New Mexico.....	314	.....	2	312	.....	.....	.....	25,000
New York.....	214	35	24	153	2	.....	.....	376,916
North Carolina.....	.....	.....	.....	.....	.....	5,459	6,500	82,391
North Dakota.....	11	.....	.....	11	.....	.....	.....	17,945
Ohio.....	444	.....	.....	444	.....	.....	.....	105,000
Oklahoma.....	888	10	18	849	11	7,896	9,719	253,000
Oregon.....	529	.....	10	516	3	875	1,025	30,000
Pennsylvania.....	229	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	.....	.....	207,371
Rhode Island.....	28	.....	.....	27	1	.....	.....	73,206
South Carolina.....	309	3	15	291	.....	.....	.....	34,125
South Dakota.....	182	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	350	512	40,000
Tennessee.....	571	11	4	556	.....	.....	478	27,392
Texas.....	1,496	8	12	1,476	.....	3,876	3,908	49,403
Utah.....	36	1	2	33	.....	.....	.....	11,669
Vermont.....	38	1	.....	37	.....	.....	.....	4,036
Virginia.....	126	1	9	116	.....	.....	2,438	170,158
Washington.....	82	14	18	40	10	.....	.....	18,000
West Virginia.....	571	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	1,769	1,422	96,266
Wisconsin.....	503	8	39	456	.....	2,311	2,831	269,973
Wyoming.....	93	1	2	90	.....	.....	.....	6,750

<sup>1</sup> Not reported.

<sup>2</sup> Dentists.

<sup>3</sup> Health officers' meeting; nurses present also.

#### CORRESPONDENCE COURSES AND PRENATAL LETTERS

Instruction in prenatal and infant care was given to women through correspondence courses by four States: Minnesota, Virginia, Washington, and West Virginia. In three of these States the lessons were corrected and returned.

Prenatal letters were used as a medium of instruction for expectant mothers in the essentials of the care and hygiene of pregnancy by 22 States: Arizona, California, Delaware, Idaho, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, North Carolina, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Virginia, West Virginia, and Wisconsin. The number of new names reported enrolled during the year was 32,584. The number of sets of letters reported distributed in 21 of these States was 46,217; one State did not report the number distributed. Oklahoma reported enrollment of 7,896 new names and distribution of 9,719 sets of letters. North Carolina enrolled 5,459 names and distributed 6,500 sets of letters. (Table 5.) This service has been greatly appreciated by the women who received the letters. Enrollment usually was made through the requests of the women themselves or through requests of physicians or nurses for their patients.

#### DISTRIBUTION OF LITERATURE

All the States reported distribution of literature relating to the hygiene and care of mothers, infants, and preschool children; and more than 4,400,000 pieces of literature were distributed during the year under review. (Table 5.) This material consisted largely of publications prepared by State agencies and of bulletins, folders, dodgers, and leaflets prepared by the United States Children's Bureau, which were distributed directly by the States. A number of bureaus and divisions send information on the care of the baby to parents of infants whose births are registered in the State health departments. Missouri reported distributing more than 500,000 pieces of literature. New York distributed approximately 377,000 pieces, Michigan more than 336,000, Wisconsin about 270,000, Oklahoma 253,000, Pennsylvania more than 200,000, and New Hampshire almost 200,000. Indiana and Virginia each distributed approximately 170,000 pieces, Minnesota more than 150,000, and Alabama approximately 150,000. California, Georgia, Maryland, Montana, and Ohio each distributed more than 100,000 pieces.

The greater part of the literature went directly to parents. A relatively small amount went to physicians, nurses, teachers, and lay persons assisting in child-health work for use in their own fields for disseminating information on maternal and child welfare. Literature provides information that is available to the most remote settlers. State and Federal publications on infant care, child care, and prenatal care are treasured possessions among many isolated people. Expressions of appreciation of information on the care of babies that was obtained through these publications are to be found in the files of every State agency administering the maternity and infancy act.

#### EXTENSION OF THE UNITED STATES BIRTH AND DEATH REGISTRATION AREAS

Thirty-five States and the District of Columbia were in the United States birth-registration area at the beginning of 1927. Before June 30 of that year Arkansas and Tennessee had been admitted,

bringing the total number of States in the registration area to 37.<sup>16</sup> Colorado, New Mexico, Oklahoma, South Carolina (which was dropped from the birth-registration area in 1925), and Texas conducted campaigns to raise their registration sufficiently to obtain entry into the birth-registration area.

Forty-two States, the Territory of Hawaii, and the District of Columbia were in the death-registration area at the close of the fiscal year 1927, Arkansas having been admitted early in February, 1927. During the year Georgia and Texas passed satisfactory laws governing the registration of births and deaths.<sup>17</sup>

Some of the States already in the area reported work to improve birth registration still further. Many States send birth-registration certificates to parents of babies whose births are registered in the State department of health. Usually literature on the care of the baby accompanied such certificates, hence registration of births provided a means of reaching parents with information on the care of their babies.

The National Committee to Aid Completion of the Registration Area before 1930 is assisting the States not in the areas by contributing money, statisticians, and clerical or field workers. The committee, which was formed by the American Public Health Association, is composed of representatives from the United States Bureau of the Census, the United States Children's Bureau, the United States Public Health Service, the American National Red Cross, the United States Chamber of Commerce, the National Tuberculosis Association, the Boy Scouts of America, and two large life-insurance companies.

### SURVEYS AND CAMPAIGNS

During the year under review 34 States conducted surveys or campaigns or both surveys and campaigns. Some were state-wide, others were restricted to a county or group of counties or to a locality. Frequently a campaign was conducted at the same time as a survey in the effort to improve conditions found. Seventeen States reported a total of 51 surveys. These related to midwives, maternal and infant mortality, and other conditions affecting the care of mothers, infants, and preschool children. Twenty-nine States reported 68 campaigns. These were for promotion of birth registration, for examination of preschool children and correction of their defects, for immunization of infants and preschool children against diphtheria or other specified communicable diseases, for promotion of breast feeding, and for other improvements in maternal and child welfare and hygiene.

<sup>16</sup> Alabama, Louisiana, and Missouri were admitted in 1927 after June 30. Georgia was admitted in December, 1927, as of the year 1928, making a total of 41 States and the District of Columbia in the birth-registration area, including 89.9 per cent of the total estimated population of the United States. The seven States outside the area in January, 1928, were Colorado, Nevada, New Mexico, Oklahoma, South Carolina, South Dakota, and Texas. Nevada and South Dakota have not yet enacted satisfactory registration laws. Oklahoma was admitted in April, 1928.

<sup>17</sup> Georgia was admitted in December, 1927, as of the year 1928, making a total of 43 States in the death-registration area, including 93.5 per cent of the total estimated population of the United States. The five States outside the area in January, 1928, were Nevada, New Mexico, Oklahoma, South Dakota, and Texas. Nevada and South Dakota have not yet enacted satisfactory registration laws. Oklahoma was admitted in April, 1928.

"Get Ready for School" campaigns were sponsored by the parent-teacher association (National Congress of Parents and Teachers) in many States. Under their plan State and local parent-teacher groups arranged for examination in the spring of the year for the preschool children who would enter school in the fall. The examinations were made by physicians in their offices and at health conferences. Correction of remediable defects was urged during the summer, and immunization against diphtheria, smallpox, and typhoid fever was given to a large number of preschool children. A final check-up just before school opened was also recommended as a means of encouraging correction of defects. The children were then ready to enter school in the best physical condition possible, and measures to prevent communicable diseases for which there are well-recognized immunizations had been taken. State agencies directing the maternity and infancy work assisted the parent-teacher associations in their campaigns by supplying literature, detailing personnel to conferences, and giving help in plans and follow-up work. Sixteen States reported campaigns or special assistance given to "Get Ready for School" campaigns: California, Colorado, Indiana, Kentucky, Michigan, Missouri, Montana, Nebraska, New Hampshire, Oregon, Pennsylvania, Texas, Utah, Virginia, West Virginia, and Wyoming.

The celebration of May Day as Child Health Day in cooperation with the American Child Health Association was reported by 15 States: Georgia, Indiana, Kentucky, Michigan, Missouri, Montana, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Utah, and West Virginia. Some directors of State bureaus or divisions of child hygiene served as State chairmen for the celebration of May Day as Child Health Day.

#### ORGANIZATIONS COOPERATING IN THE MATERNITY AND INFANCY WORK

The agencies administering the maternity and infancy work in 42 States and the Territory of Hawaii reported what probably is an incomplete list of public or private organizations cooperating actively with them. Most of these were state-wide. The State parent-teacher association was reported as giving cooperation in 38 States, State federations of women's clubs in 30 States, the State league of women voters in 19 States, the Women's Christian Temperance Union in 10 States. The American Red Cross assisted in 16 States, the State tuberculosis association in 11 States, the State public-health association in 5 States, and a State tuberculosis and public-health association in 1 State. Four State medical societies and six State dental societies cooperated. The extension service of the State university or other State educational institutions cooperated in 8 States, the State department or board of education in 7, and the State farm bureau in 3. The American Legion gave assistance in 3 States, the Society for Crippled Children in 2, the American Association of University Women in 2, the auxiliary of the State medical association in 3, and the auxiliary of the American Legion in 6. In addition the following agencies were reported as cooperating by at least 1 State: State department of institutions and agencies, Child Study Association, Visiting Nurse Association, Congress of Mothers, Home Makers' Club, Child Conservation League, State



Charities Aid Association, State Fair Association, State grange, State legislative council of women, Council of Farm Women, Disabled Veterans, Psychopathic Hospital, Mormon Relief Society, Mormon Mission, Catholic Women's League, and Children's Aid Society.

The States reported about 100 organizations as cooperating in the work. If the State branches of the National organizations are counted separately the total number of associations or agencies reported as cooperating was more than 200.

The cooperation and assistance given by state-wide organizations varied. They lent trained personnel for conferences and centers; they gave active assistance through lay workers at conferences and in organizing conferences; they supplied groups for class instruction; and they rendered financial assistance for special pieces of health work. Their support and approval of the maternity and infancy work as conducted by official agencies have had a great influence in the development of activities for the promotion of the welfare and hygiene of maternity and infancy, and their value has been incalculable.

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## SOME RESULTS OF FIVE YEARS OF WORK UNDER THE MATERNITY AND INFANCY ACT

The close of the fiscal year ended June 30, 1927, terminated the five-year period of the cooperation of State and Federal agencies under the maternity and infancy act for which the appropriation was originally authorized.<sup>18</sup> A brief review of the work during this time is therefore given before the more detailed summary of the work of the States in the fiscal year 1927 is presented.

Each year since the passage of the act for the promotion of the welfare and hygiene of maternity and infancy has seen an expansion of activities within the States, and an increasing number of States have accepted the provisions of the act. At the close of the fiscal year ended June 30, 1923, all State legislatures had met since the passage by Congress of the maternity and infancy act, 40 States had accepted its terms through action of their legislatures, and the governors of these States had signed the act of acceptance. The 8 States that had not passed acts of acceptance at the close of the first year of operation of the act were Connecticut, Illinois, Kansas, Louisiana, Maine, Massachusetts, Rhode Island, and Vermont. The Maine Legislature had passed an acceptance act, but the governor had vetoed it. Connecticut and Kansas were still cooperating under their governors' acceptances in accordance with the section of the maternity and infancy act permitting cooperation until six months after the adjournment of the first regular session of the legislature following the passage of the act.<sup>19</sup>

During the fiscal year 1925 the legislatures of Louisiana, Rhode Island, and Vermont accepted the provisions of the act, as did also the Territory of Hawaii, to which the benefits of the act had been extended by action of the Sixty-eighth Congress. Five States then remained in the noncooperating group—Connecticut, Illinois, Kansas, Maine, and Massachusetts. There were no additional acceptances in the fiscal year 1926, but at the close of the fiscal year 1927 the number of cooperating States had increased to 45, Kansas and Maine having accepted the terms of the act. Consequently, at the close of the five-year period only three States—Connecticut, Illinois, and Massachusetts—remained in the noncooperating group.

### EXPANSION OF ACTIVITIES

Each annual report from the States has shown growth in the work not only through better reporting but also through more successful adaptation of the State program to the State problems and through expansion of activities. During the fiscal year ended June 30, 1927,

<sup>18</sup> As the funds became available Mar. 20, 1922, a few States had cooperated two or three months more than five years when the fiscal year ended on June 30, 1927.

<sup>19</sup> See sec. 4, Appendix A, pp. 135-136.

more than 160,000 expectant mothers were reached in the 38 States reporting on this item and more than 1,000,000 infants and preschool children were reached in the same number of States reporting.

Maternity and infancy work in more counties within the States was reported at the close of the fiscal year 1927 than in preceding years. The cooperating States and the Territory of Hawaii comprise 2,937 counties. In 2,460 (83.8 per cent) of these counties some maternity and infancy work has been done during the period of cooperation. Twenty-one States reported work in every county, 11 reported work in more than 90 per cent of the counties in the State, and 9 additional States and Hawaii reported work done in more than 75 per cent of the counties during the period of cooperation. The number of counties in which maternity and infancy work was carried on during the year under review was 1,884, and 9 States reported maternity and infancy work conducted in every county. (Table 3.) There was an extension of work to 134 more counties in 1927 than had been reached in the same States at the end of the fiscal year 1926. Some of the counties not yet reached are isolated, inaccessible, sparsely populated, or unorganized. In some of them it may possibly never be feasible or desirable to conduct a maternal or infant welfare program. Some have been left untouched because they are nearly or exactly coterminous with cities that have maternity and infancy work administered by municipal agencies. Thirteen States reported that a total of 69 counties, 5 towns, and 1 city had taken over maternity and infancy work initiated or assisted by the State bureaus or divisions.

The number of activities has increased each year and at the same time the contacts with parents and children made through them. Each succeeding year has shown a larger number of permanent centers and a larger number of counties and communities assuming support of maternity and infancy work. An increasing enrollment in mothers' and girls' classes is noted. Larger numbers of pamphlets and other literature have been distributed. More home visits by nurses were reported in 1927 than in former years. Decreases reported for certain activities in some States may be due to changes in the program in line with the general trend toward improved and more permanent types of work. From year to year the State bureaus or divisions have curtailed certain activities and replaced them by other forms of work, or other agencies or groups have taken over some of the work begun by the State cooperating agency. In some States itinerant conferences have given place to conferences at permanent centers, the itinerant-conference work having been discontinued by a few States that have looked upon the itinerant conference as a demonstration of the necessity for closer supervision of mothers and infants that should result in the supplying of such supervision by the family physician. Still other States have reduced the number of conferences conducted by nurses with no physician present and have gradually interested local physicians in conducting health conferences if the State bureau or division of child hygiene did not or could not provide medical service. The enrollment of midwives in classes has decreased as the midwives have received instruction and have been licensed and supervised and as their practice has been restricted. The responsibility for instruc-

tion in infant care for girls in schools has been assumed by educational departments in some States, and this has lessened the enrollment in classes for girls conducted by State agencies cooperating under the maternity and infancy act.

Each year has added a new group of parents to the sum total of the groups of former years that have received information on maternal and child care. They in turn have widened the circle of informed persons by imparting a measure of their knowledge to others with whom direct contact had not been made. The extent of the educational work under the act can not be measured in figures. Indirectly it has reached with instruction in better care of mothers and babies many parents who have no knowledge of the act itself or the source of their inspiration for more scientific care.

#### INCREASE IN PUBLIC KNOWLEDGE OF MATERNAL AND INFANT CARE

Placing the emphasis on educational work in State programs for the promotion of the welfare of maternity and infancy has resulted in a great increase in public knowledge of care of infants and mothers. This increase has been the chief result of the five years of cooperation under the act. It has not been confined to parents but has been extended to all groups that have had contacts with infants and mothers or with the maternity and infancy act—including legislative bodies, health departments, technically trained people, lay organizations, and finally the mothers and fathers themselves. The effects will be cumulative. Knowledge based on sound principles may be confined to relatively few people in one generation but becomes the common property and knowledge of succeeding generations. The increase in popular interest in maternal and infant welfare and the greater attention directed to it by State administrative agencies during the period of cooperation under the act will insure better care for mothers and babies of the United States in the future than has been available to them in the past, if the interest is sustained by continuation and expansion of the work.

#### ESTABLISHMENT OF CHILD-HYGIENE BUREAUS OR DIVISIONS

The first maternity and infancy bill was introduced in the Sixty-fifth Congress July 1, 1918. The Children's Year campaign also was inaugurated in that year, on April 6. The Chief of the Children's Bureau had recommended in the Fifth Annual Report of the Children's Bureau, for the year ended June 30, 1917, encouragement of public protection of maternity and infancy through Federal aid. All these factors doubtless influenced interest in maternal and child welfare and resulted in legislation in a number of States to establish and maintain agencies to conduct such work. Before 1918 nine States—Illinois, Kansas, Louisiana, Massachusetts, Montana, New Jersey, New Mexico, New York, and Ohio—had child-hygiene bureaus or divisions. During 1918 three additional States—Colorado, Florida, and Virginia—established child-hygiene bureaus. The original maternity and infancy bill with subsequent amendments came up for consideration before three Congresses—the Sixty-fifth, the Sixty-sixth, and the Sixty-seventh. It was passed November 21,



1921, and became a law when signed by the President November 23, 1921.

In 1919, largely as a result of the child-welfare campaigns conducted by the United States Children's Bureau in cooperation with the women's division of the Council of National Defense, 15 States—Arizona, Arkansas, California, Connecticut, Georgia, Indiana, Kentucky, Missouri, North Carolina, Pennsylvania, Rhode Island, South Carolina, Texas, West Virginia, and Wisconsin—created child-hygiene bureaus or divisions in their State departments of health, and one State—Idaho—created such a bureau in its department of public welfare. In anticipation of the passage of the maternity and infancy act five more States—Alabama, Maine, Michigan, Mississippi, and Washington—established child-hygiene bureaus or divisions in 1920; and New Mexico reorganized its system, establishing a division of child hygiene and public health nursing in the bureau of public health, State department of public welfare.

In 1921 four more States—Delaware, Nebraska, Oregon, and South Dakota—established child-hygiene bureaus or divisions. Nine States established such agencies in 1922 after the passage of the act—Maryland, Minnesota, Nevada, New Hampshire, North Dakota, Oklahoma, Tennessee, Utah, and Wyoming; and Iowa organized a division of maternity and infant hygiene in connection with the extension service of the State university. In 1925, after the extension of the benefits of the act to Hawaii, the Territorial board of health established a division of maternity and infancy. Vermont has never created a separate division in its department of public health.

Forty-seven States and the Territory of Hawaii had child-hygiene bureaus or divisions at the close of the five-year period under discussion, 11 having been created following the passage of the act. Twenty-eight States created such divisions during the consideration of the bill by the three Congresses, and 39 State and Territorial child-hygiene divisions have been instituted since the recommendations by the Chief of the Children's Bureau were made in the report of 1917 for public protection of maternity and infancy and for Federal aid.

#### INCREASE IN STATE APPROPRIATIONS FOR CHILD-HYGIENE WORK

The increase in appropriations for maternity and infancy work made by the State legislatures since the passage of the act has been notable. In a number of States in which no appropriation had previously been made for child-hygiene work State funds were made available for this purpose in order to match the appropriations made by the Federal Government under the maternity and infancy act; and several of the States not cooperating under the act increased their appropriations as a result of the public discussion of needs which the passage of the act precipitated.

The amount of Federal funds accepted from the 1923 appropriation was \$716,333.40. An increasing amount has been accepted from each of the succeeding appropriations; the amount accepted from the 1926 appropriation was \$949,646. Although only \$904,824.71 had been accepted from the 1927 appropriation at the close of the fiscal year ended June 30, 1927, this appropriation, like those preceding it, is available for a two-year period, and the amount that will have been accepted from it before it expires will undoubtedly exceed the amount

accepted from any previous appropriation.<sup>20</sup> Some of the increase in the amounts accepted is due to the increase in the number of States accepting the benefits of the act and to larger State appropriations.

Among the States having no State appropriations for child-hygiene work before the year 1921 were Arkansas, Iowa, Maryland, South Dakota, and Tennessee. Among the States that had appropriations in 1921 and made larger appropriations after the passage of the act were Alabama, Arizona, Georgia, Indiana, Michigan, Missouri, Montana, New York, South Carolina, Virginia, and Wisconsin. Only one State, New Jersey, is appropriating less than before the Federal funds became available.

State funds and Federal funds accepted by States have in turn been matched by many counties or communities. In this way the circle of resources and activities for the welfare of mothers and babies has been constantly extended.

#### EXTENSION OF THE BIRTH AND DEATH REGISTRATION AREAS

Accurate birth and death statistics are the foundation upon which the superstructure of programs for the improvement of maternal and child welfare should be built. If registration of births and deaths is not at least approximately complete one of the first steps in the program should be improvement in registration in the area concerned. It is obvious that workers in the field of child hygiene should know how many babies are born and where they are. Reporting deaths is equally important for a knowledge of the proportion of infants dying within a given period and the causes of their mortality. If any cause of infant deaths is conspicuous in a given locality, the program should be directed toward combating that particular cause and the factors leading to it. For instance, a better milk supply may be needed to reduce a high infant mortality from diarrhea and enteritis. An increase in neonatal deaths directs attention to the types of obstetrical procedure employed and the character of the prenatal care given. A higher death rate from communicable diseases calls for closer analysis and for immunization against the diseases for which a method of immunization is known.

In like manner statistics as to deaths due to causes associated with pregnancy and childbirth are a prerequisite in planning the maternity program. A high death rate from puerperal sepsis indicates the need for better nursing and obstetrical technique. A high death rate from albuminuria and convulsions demands an aggressive campaign for prenatal care. A relatively high death rate from accidents of pregnancy may give reason for pause and an analysis of operative obstetrical procedures.

Since the beginning of work under the maternity and infancy act the administrative agencies in all the States not in the birth-registration area have emphasized the importance of registration and have assisted in promoting it, and States already in the area have reported work to improve their registration.

Before the maternity and infancy act was passed 27 States were in the birth-registration area; at the close of the fiscal year 1927 the

<sup>20</sup> The sum that had been accepted from the appropriation at the close of the fiscal year 1928 was \$965,136.24.

number in the area was 37. Four were admitted in the following six months so that at the time of writing (February, 1928) only 7 States are outside the birth-registration area: Colorado, Nevada, New Mexico, Oklahoma,<sup>21</sup> South Carolina (which was dropped from the area in 1925), South Dakota, and Texas. Two of these States—Nevada and South Dakota—have not satisfactory registration laws. The remaining 5 are conducting birth-registration campaigns or are under test by the United States Bureau of the Census.

Before the maternity and infancy act was passed 34 States were in the death-registration area. At the close of the fiscal year 1927 8 additional States had been admitted to the area. Only 5 States now remain outside the death-registration area—Nevada, New Mexico, Oklahoma,<sup>21</sup> South Dakota, and Texas. The absence of satisfactory registration laws in Nevada and South Dakota makes action by the legislatures of these States necessary. New Mexico, Oklahoma, and Texas are conducting active campaigns to achieve the 90 per cent registration required by the United States Bureau of the Census before admission to the area.

The assistance rendered within the States by members of the bureaus or divisions administering the maternity and infancy act and by personnel lent by the United States Children's Bureau to the States conducting birth-registration campaigns has been a large factor in the extension of the area. Workers from State bureaus or divisions gave assistance in 10 of the 15 States that have been admitted to the birth-registration area since 1921—Alabama, Arizona, Arkansas, Florida, Georgia,<sup>22</sup> Idaho, Louisiana, Missouri, Tennessee, and West Virginia. Personnel was lent or other assistance given by the United States Children's Bureau to 5 of these States—Arkansas, Georgia, Idaho, Louisiana, and Tennessee. Workers from State bureaus or divisions also assisted in 6 of the 9 States admitted to the death-registration area since 1921—Alabama, Arizona, Arkansas, Georgia,<sup>22</sup> Idaho, and West Virginia.

Registration of births and deaths has been stimulated through the previously mentioned assistance given by the Committee for the Completion of the Registration Area before 1930. (See p. 27.) The cooperation of the national organizations and governmental agencies represented on the committee has given much impetus to the completion of the registration areas. It seems altogether possible that the aim stated in this committee's slogan "Every State in the birth and death registration area by 1930" may be an accomplished fact on that date.

### REDUCTION IN INFANT MORTALITY

Mortality rates for the year 1927 are not yet available,<sup>23</sup> but preliminary reports from the States indicate that the cumulative effect of the work of the past five years is shown in a much greater saving of life than has been accomplished in any previous year. With an expanding registration area rates are not entirely comparable from year to year. Fluctuations will of course occur because of climatic,

<sup>21</sup> Oklahoma was admitted to the birth and death registration areas Apr. 23, 1928.

<sup>22</sup> See footnotes 16 and 17, p. 27.

<sup>23</sup> Since this report was written a provisional infant mortality rate of 64.6 for the birth-registration area (excluding Utah) in 1927 has been announced by the U. S. Bureau of the Census.

epidemic, and social causes from year to year. The general level around which the fluctuations occur or the trend in the rate reflects permanent gains or losses. The trend was downward before the maternity and infancy funds become available. Thus the rate (that is, the number of deaths per 1,000 live births) in the United States birth-registration area of 1916 was 101 (with the urban rate 104 and the rural rate 97), whereas in 1921 it was 76 (78 in urban areas and 74 in rural areas). Many agencies contributed to this reduction. Knowledge of the value of the child-health centers, demonstrated in a few urban centers, was resulting in the establishment of child-hygiene bureaus or divisions in the health departments of many cities and some inadequately supported State bureaus; private societies, especially infant-welfare societies, and the national child-health associations were also factors. The United States Children's Bureau from the day of its organization had stressed the importance of reducing our unnecessarily high infant mortality rate. In 1918 and 1919, in cooperation with the women's committee of the Council of National Defense, the Children's Bureau sponsored the Children's Year campaign, which reached practically every county in 47 States with a more or less successful educational program in child health and resulted in the establishment of child-hygiene bureaus or divisions in 16 States. In 1918 the mortality rate was high, probably owing to the epidemic of influenza, but 1919 established a new low level (87) for the United States birth-registration area.

It should be noted in this connection that it is easier to reduce a high rate than a rate already low. When the rate is high, as it was in 1916 in the United States, almost anything that is done will reduce it, because almost everything is wrong. After the rate is lowered the program must be carefully adapted to the ascertained facts as to the contributing factors in the death rate. Although there was a further reduction between 1919 and 1921 (12.6 per cent), it was relatively less than between 1916 and 1919 (13.9 per cent). With new resources made available in 1922 under the maternity and infancy act much new work was initiated all over the country. Increasingly this work has been placed on a factual basis of needs and has reached a larger proportion of parents. Thus if the program is continued its results will be reflected in future rates more than in those of any single year that has passed. The general trend of the rates for the birth-registration area from 1921 to 1926, the last year for which figures are available, has been downward with 1924 the lowest, when the rate was 71 (72 in urban areas and 69 in rural areas).

Infant-mortality figures for the birth-registration area in 1926 and in 1921 are not entirely comparable because in 1921 only 27 States were in the birth-registration area, whereas by 1926 there were 35 (1 State was dropped from the area during this period), the 9 that had been admitted to the area including several with infant mortality rates higher than that of the birth-registration area as a whole, yet the general trend has been downward. The Northwestern States, which have a relatively low infant mortality, are less populous than the Southern States, which with their large negro population and other unfavorable conditions show a generally higher rate.



In Table 6 a comparison of average infant mortality rates during the first five years of the operation of the maternity and infancy act with the average rates for a comparable period before the passage of the act has been made for 21 States for which figures are available from the United States Bureau of the Census. As Table 6 shows, there has been a decrease in the average rates of both urban and rural areas since 1921. Only 16 of these 21 States have cooperated four years or more, and only 9 of the 16 had established child-hygiene bureaus or divisions before 1920. Hence much of the work has been entirely new. Eight of these 16 States had a decrease in infant mortality of more than 10 per cent in the average rates during the period of cooperation, as compared with a period before cooperation. Child-hygiene work usually was well under way in cities before the States had divisions of child hygiene or had started programs in the rural districts. The cumulative effect of the work that has been in progress for longer terms is reflected in the relatively greater decreases in the urban areas and in the States in which State bureaus or divisions of child hygiene had begun work before the passage of the act.

TABLE 6.—Comparison of infant mortality prior to operation of the maternity and infancy act (1917-1921, exclusive of 1918) with infant mortality during the period of operation of the act of (1922-1926) in specified States; <sup>1</sup> average State, urban, and rural rates per 1,000 live births<sup>2</sup>

State	Year of first cooperation	State rate			Urban rate			Rural rate		
		1917-1921	1922-1926	Percentage of decrease	1917-1921	1922-1926	Percentage of decrease	1917-1921	1922-1926	Percentage of decrease
States beginning to cooperate 1922, 1923:										
California <sup>1</sup> .....	1922	70.3	68.4	2.7	64.1	61.8	3.6	78.8	77.8	1.3
Indiana.....	1922	79.3	68.7	13.4	90.5	76.1	15.9	72.0	62.9	12.6
Kentucky.....	1922	75.5	70.2	7.0	90.9	85.4	6.1	73.0	67.1	8.1
Maryland.....	1922	105.5	90.4	14.3	100.7	85.9	14.7	111.2	96.4	13.3
Michigan.....	1922	86.9	75.9	12.7	93.3	80.4	13.8	79.8	69.8	12.5
Minnesota.....	1922	64.8	58.8	9.3	67.9	59.1	13.0	63.2	58.6	7.3
New Hampshire.....	1922	94.2	81.5	13.5	106.0	88.3	16.7	81.6	74.1	9.2
New York <sup>1</sup> .....	1923	80.6	69.8	13.4	81.8	69.8	14.7	75.3	70.1	6.9
North Carolina.....	1922	85.5	80.8	5.5	116.8	103.5	11.4	82.5	77.3	6.3
Ohio.....	1922	84.7	71.7	15.3	89.9	74.0	17.7	77.8	68.2	12.3
Oregon <sup>1</sup> .....	1922	58.3	54.6	6.3	59.0	50.2	14.9	57.8	57.6	.3
Pennsylvania.....	1922	98.9	84.3	14.8	98.9	83.7	15.4	98.8	84.9	14.1
Utah.....	1922	71.2	64.6	9.3	69.8	61.7	11.6	71.8	66.1	7.9
Virginia.....	1922	87.4	80.5	7.9	108.1	97.0	10.3	82.1	76.0	7.4
Washington <sup>1</sup> .....	1923	61.6	56.4	8.4	59.1	51.7	12.5	64.1	61.4	4.2
Wisconsin.....	1922	76.4	68.3	10.6	88.4	73.3	17.1	69.2	64.8	6.4
States not cooperating prior to 1925:										
Connecticut <sup>3</sup> .....		86.5	73.6	14.9	86.1	72.3	15.0	88.0	79.5	9.7
Kansas <sup>3</sup> .....	1927	70.6	62.7	11.2	86.5	74.9	13.4	66.2	58.1	12.2
Maine.....	1927	93.4	82.4	11.8	96.1	87.9	8.5	92.4	80.0	13.4
Massachusetts.....		88.3	74.5	15.6	89.2	74.9	16.0	83.6	72.5	13.3
Vermont.....	1925	86.0	72.7	15.5	111.7	81.0	27.5	81.2	71.1	12.4

<sup>1</sup> States selected are those in the United States birth-registration area in 1917 with the exception of California and Oregon, which came into the area in 1919, and Rhode Island, which was dropped from the area in 1919 and 1920. The average rates for the States are for 1922-1926 and 1917-1921, exclusive of 1918 (when the rates may have been influenced by the influenza epidemic) with the exception of California and Oregon, where the rates are for the periods 1919-1921 and 1922-1926, and for New York and Washington, where the rates are for the periods 1919-1922 and 1923-1926, as these States did not cooperate under the act until 1923.

<sup>2</sup> Source: U. S. Bureau of the Census.

<sup>3</sup> Connecticut cooperated under the governor's acceptance of the act from Apr. 1, 1922, to Dec. 6, 1923, but discontinued cooperation thereafter. Kansas cooperated under the governor's acceptance from Apr. 1, 1922, to Sept. 22, 1923, then discontinued cooperation until 1927.

## REDUCTION IN MATERNAL MORTALITY

Although maternal mortality rates have shown little variation during the period 1921 to 1926, there has been in general a downward trend during this period in the birth-registration area as a whole and in both urban and rural areas. (Table I, Appendix C, p. 140.) The rate of maternal death for every 10,000 live births for the whole area in 1921 was 68.2; in 1926 it was 65.6. The urban rate in 1921 was 77.1; in 1926 it was 73.9. The rural rate in 1921 was 59.4; in 1926 it was 56.7. In 1921 the rate for white mothers was 64.4 deaths for every 10,000 live births; in 1926 this was 61.9. The colored rate had not materially changed; it was 107.7 in 1921 and 107.1 in 1926. (Table II, Appendix C, p. 142.) Although the maternal-mortality trend has been downward, at least two factors have had a tendency to raise rather than to lower the rates for the expanding birth-registration area. One of these has been the extension of the registration area since 1921 to include nine more States, five of which had in 1926 maternal mortality rates 5 to 41 points higher than the rate for the whole birth-registration area (Arizona, 102.5; Florida, 106.9; Montana, 80.2; West Virginia, 70.6; Wyoming, 93.4). A second factor influencing the rates may be found in the careful scrutiny of death certificates for women of childbearing age on the part of State vital-statistics divisions and the United States Bureau of the Census as a result of the discussion of maternal deaths that has been evoked through programs for better care of mothers. This scrutiny has led to the assignment to causes associated with pregnancy and childbirth of deaths previously ascribed to other causes.

Comparison has been made in Table 7 of the maternal mortality rates for the period of cooperation under the maternity and infancy act and the rates for a similar period before cooperation in 16 States that were in the United States birth-registration area in 1919 and that have been cooperating under the act for four years or longer. This comparison shows a decrease in every State. Eight of these 16 States had a decrease of more than 10 per cent in their average rates, the decreases ranging from 14.6 per cent to 31.8 per cent. All the 16 States show decreases in their urban areas and all but 1 in their rural areas. A majority of the States had greater reduction in the rural than in the urban areas. The decrease in the rural areas in 11 States exceeded 10 per cent, and in 8 States it exceeded 20 per cent, the greatest decrease being 35.9 per cent in Utah. Table 7 also presents a comparison of average rates during the period of the operation of the maternity and infancy act (1922-1926) with the rates for the period 1917 to 1921 (exclusive of 1918) for 5 States not cooperating or having cooperated for very short periods. In 1 of these States (Vermont) there was an increase of 0.8 per cent in the average rate; this State did not begin cooperating under the act until 1925 and is not among those in which the early establishment of a division of child hygiene was noted. Three of the States not cooperating or having cooperated for short periods had a decrease in rates in urban areas, but the decrease was less than 10 per cent, and in 2 States in this group there was an increase in the rates in urban areas. One noncooperating State and one State cooperating only

since 1927 had reductions of more than 10 per cent in the average rates in the rural areas.

The beneficial effect of maternity work undertaken is clearly indicated by these percentages. This is particularly true in the rural areas, where the maternity program has been first initiated and promoted by the States during the period 1922 to 1926.

TABLE 7.—Comparison of maternal mortality prior to operation of the maternity and infancy act (1917–1921, exclusive of 1918) with maternal mortality during the period of operation of the act (1922–1926) in specified States;<sup>1</sup> average State, urban, and rural rates per 10,000 live births<sup>2</sup>

State	Year of first cooperation	State rate			Urban rate			Rural rate		
		1917–1921	1922–1926	Per cent- age of in- crease or de- crease	1917–1921	1922–1926	Per cent- age of in- crease or de- crease	1917–1921	1922–1926	Per cent- age of in- crease or de- crease
States beginning to cooperate 1922, 1923:										
California <sup>1</sup> .....	1922	74.6	62.7	-16.0	83.5	66.5	-20.4	62.4	57.3	-8.2
Indiana.....	1922	78.0	62.8	-19.5	94.9	77.5	-18.3	67.0	51.0	-23.9
Kentucky.....	1922	62.6	60.0	-4.2	94.4	84.2	-10.8	57.6	55.1	-4.3
Maryland.....	1922	73.3	60.2	-17.9	77.4	67.6	-12.7	68.5	50.6	-26.1
Michigan.....	1922	78.3	66.9	-14.6	82.2	75.4	-8.3	73.9	55.5	-24.9
Minnesota.....	1922	64.6	53.9	-16.6	74.5	64.9	-12.9	59.5	47.0	-21.0
New Hampshire.....	1922	70.5	69.1	-2.0	73.1	69.3	-5.2	67.8	68.9	+1.6
New York <sup>1</sup> .....	1923	63.5	58.0	-8.7	64.9	60.8	-6.3	57.7	45.9	-20.5
North Carolina.....	1922	86.8	82.2	-5.3	142.9	131.0	-8.3	81.4	74.6	-8.4
Ohio.....	1922	74.2	67.3	-9.3	85.2	80.0	-6.1	59.8	49.1	-17.9
Oregon <sup>1</sup> .....	1922	89.4	69.6	-22.1	91.3	76.3	-16.4	88.2	65.0	-26.3
Pennsylvania.....	1922	69.7	63.9	-8.3	82.8	80.4	-2.9	56.6	47.2	-16.6
Utah.....	1922	73.6	50.2	-31.8	97.6	68.6	-29.7	62.6	40.1	-35.9
Virginia.....	1922	80.0	72.1	-9.9	117.0	105.8	-9.6	70.5	62.8	-10.9
Washington <sup>1</sup> .....	1923	83.7	68.1	-18.6	92.7	78.6	-15.2	74.6	57.0	-23.6
Wisconsin.....	1922	57.8	57.3	-0.9	69.5	67.5	-2.9	50.8	50.0	-1.6
States not cooperating prior to 1925:										
Connecticut <sup>3</sup> .....		58.3	55.6	-4.6	63.9	59.6	-6.7	37.2	37.6	+1.1
Kansas <sup>3</sup> .....	1927	76.5	68.5	-10.5	96.0	94.2	-1.9	71.1	58.7	-17.4
Maine.....	1927	77.8	77.0	-1.0	98.1	107.1	+9.2	70.3	63.8	-9.2
Massachusetts.....		68.8	64.6	-6.1	72.8	68.6	-5.8	47.8	40.1	-16.1
Vermont.....	1925	71.5	72.1	+0.8	78.9	102.6	+30.0	70.1	65.9	-6.0

<sup>1</sup> States selected are those in the United States birth-registration area in 1917 with the exception of California and Oregon, which came into the area in 1919, and Rhode Island, which was dropped from the area in 1919 and 1920. The average rates for the States are for 1922–1926 and 1917–1921, exclusive of 1918 (when the rates were influenced by the influenza epidemic) with the exception of California and Oregon, where the rates are for the periods 1919–1921 and 1922–1926, and for New York and Washington, where the rates are for the periods 1919–1922 and 1923–1926, as these States did not cooperate under the act until 1923.

<sup>2</sup> Source: U. S. Bureau of the Census.

<sup>3</sup> Connecticut cooperated under the governor's acceptance of the act from Apr. 1, 1922, to Dec. 6, 1923, but discontinued cooperation thereafter. Kansas cooperated under the governor's acceptance from Apr. 1, 1922, to Sept. 22, 1923, then discontinued cooperation until 1927.

Methods of attacking maternal mortality in the rural districts have varied among the cooperating States in which there has been a considerable decrease in the maternal mortality rate for the period of cooperation. Special measures were undertaken in the States showing the largest reduction, in addition to the general education of women as to the importance of adequate prenatal, natal, and post-natal care. Utah, with a decline of 35.9 per cent in rural areas, was able through the interest and cooperation of a strong church society to establish small maternity hospitals to furnish lying-in care for maternity cases at nominal prices. Oregon, with a decline of 26.3 per cent in rural areas, assisted in maintaining a prenatal center for

instruction purposes in the obstetrical department of the State university in order that better prenatal instruction might be available to the students. Maryland, with a rural decrease of 26.1 per cent, has a nursing service covering the entire State. Michigan, with a decline of 24.9 per cent in rural areas, has conducted several county-wide prenatal nursing demonstrations and an aggressive program of prenatal instruction through group teaching and itinerant conferences. Indiana, with a rural decrease of 23.9 per cent, has covered almost the entire State with prenatal classes. Minnesota, with a rural decrease of 21 per cent, has provided an obstetrician to hold prenatal conferences and to give talks on obstetrics to rural physicians and talks on prenatal care to expectant mothers in the rural districts. New York, with a rural decrease of 20.5 per cent, has conducted itinerant prenatal conferences, secured the cooperation of local physicians for improved prenatal care, and sponsored graduate courses in obstetrics. Ohio, with a rural decrease of 17.9 per cent, has promoted its prenatal program through county health units. Pennsylvania, with a rural decrease of 16.6 per cent, had a nursing program covering every section of the State and an intensive program directed to the supervision of the midwives employed in nine of its counties. Virginia, with a rural decrease of 10.9 per cent, had a general educational program including "institutes for doctors' helpers" in maternity work and special attention to work of negro midwives in certain areas.

All the States have supplemented their educational programs for prenatal care by distributing to pregnant women literature on prenatal care and by distributing to physicians the Children's Bureau bulletin *Standards of Prenatal Care*.

Some States have made studies extending over periods of several years in order to obtain precise data as to the value of medical supervision of mothers and infants. Mortality rates for supervised groups of mothers and infants were compared with the rates obtaining among similar groups not receiving such supervision. In each case the rates for the supervised groups have been found to be significantly lower. (See pp. 66, 72, 74, 95-96, 115-117, 122-124.)

#### CARE AT CHILDBIRTH

Factors to be considered in relation to care at childbirth are (1) type of attendant, as physician, midwife, or other person, (2) place of confinement, as hospital, maternity home, or the patient's own home, and (3) nursing care. Saving of maternal lives has been effected. The question arises whether this is the result of better obstetrical procedure at time of childbirth or the result of better prenatal care. Obviously a public-health program stressing prenatal care will not lower maternal mortality due to causes that have their beginning at the time of delivery and that depend upon the technique observed by physicians, midwives, and nurses and in hospitals. The direction in which work is still needed as well as the results of work accomplished are suggested by Table 8, which shows the number of maternal deaths and the rate per 10,000 live births, by causes of death, in 1922 and 1926.



TABLE 8.—*Number of maternal deaths and maternal mortality rates per 10,000 live births, by cause, in the expanding birth-registration area: 1922 and 1926*

Cause of death	1922		1926	
	Number of deaths	Maternal mortality rate	Number of deaths	Maternal mortality rate
All causes.....	11, 792	66. 4	12, 168	65. 6
Puerperal septicemia.....	4, 249	23. 9	4, 484	24. 2
Puerperal albuminuria and convulsions.....	3, 211	18. 1	3, 091	16. 7
All other causes.....	4, 332	24. 4	4, 593	24. 7

The expansion of the registration area during the years 1922 to 1926 has of course increased the total number of maternal deaths reported, but it is noteworthy that not only the death rate but also the actual number of deaths from puerperal albuminuria and convulsions has decreased. The education of pregnant women as to the importance of prenatal care, of more frequent urinalysis, and of greater attention to symptoms of preeclamptic conditions is suggested by the lower mortality rate from puerperal albuminuria and convulsions in 1926. The wisdom of emphasizing prenatal care in a public-health program is clearly demonstrated by this saving of mothers' lives. In regard to the increase in both the number and the rate of deaths from puerperal septicemia and all other causes of maternal deaths (except albuminuria and convulsions) it must be remembered that these causes of maternal mortality are closely related to the type of care received at confinement. The expansion of the registration area may account for some of the slight increase in deaths from puerperal septicemia reported, but it is obvious that deaths from this disease will have to be prevented by greater attention to type of obstetrical technique and procedure.

The obstetrician, the nurse, and the hospital must be looked to for aid in lowering the death rates due to puerperal sepsis and to accidents of labor; and medical and nursing schools must do their share in training good obstetricians and obstetrical nurses. The work in prenatal clinics conducted in connection with the medical schools of the University of Louisville and the University of Oregon (see pp. 66, 98) may be credited with saving maternal lives as well as with training obstetricians. In fact, an outstanding result of the maternity and infancy act is the increasing attention given to obstetrical care in medical schools, in medical-society programs, in public-health programs, and by individual physicians.

State supervision of hospitals usually is the responsibility of departments of public welfare and does not rest on State departments of health. At least 12 States, however, provide for inspection of maternity hospitals or homes by the State board or department of health (California, Colorado, Iowa, Kansas, Maine, New Hampshire, New Jersey, Ohio, South Dakota, Texas, Utah, and Wisconsin), and 11 of these States (excepting New Hampshire) provide for licensing by the State board or department of health. In California, Kansas, and South Dakota the licensing is done through the agency in the State board of health that administers the maternity and infancy act.

The American College of Surgeons has issued standards for obstetrical departments of general hospitals as follows:

1. That obstetrical patients in general hospitals be absolutely segregated from other types.
2. That a preliminary examination be made of all obstetrical patients on admission to ascertain if there are any signs or symptoms of an infective or contagious nature, such as influenza, tonsillitis, rash, or pus discharge of any kind.
3. That all obstetrical patients with temperature on admission or developing a temperature subsequently be immediately segregated.
4. That a rigid aseptic technique be observed at all times in the labor room and in the ward.
5. That the indications for operative procedures, such as forceps, version, and extraction, Cesarean section, induction of labor, be duly recorded and incorporated in the case record prior to being carried out if time permits.

Attention to these recommendations would lead to better results in obstetrical work, particularly in general hospitals. Even though, as has been stated, the hospitals receive a large proportion of the more difficult obstetrical cases and many women arrive after labor has started and after internal examination has been made, a maternal mortality rate of more than 50 per 10,000 live births is considered high for a good lying-in hospital. In the best maternity hospitals and the best maternity services in general hospitals the rate is very much lower, yet many hospitals show a rate much higher than 50 deaths per 10,000 live births.

Apparently the midwife is receiving a fair share of attention from State public-health departments, with seeming improvement in this type of attendant at births. Surveys of midwives, class instruction, supervision of midwives, and encouragement of their registration in compliance with the law have been features of maternity programs in all States in which the midwife has been a part of the problem of care of maternity cases. Practically all the States now know as a result of surveys the approximate number of midwives in active practice within their borders. On the basis of this knowledge effort has been made to obtain the needed legislation and regulation. Instruction in the simplest and most fundamental principles of midwifery practice has been given by many States to groups of midwives. Elimination of the most unfit, old, diseased, and unclean midwives has been reported by many States. The type of midwives has improved, and the numbers practicing have decreased. For example, New Jersey reported that the percentage of births attended by midwives decreased from 42.2 in 1919 to 20.3 in 1926. What effect the work with midwives has had on the maternal death rate can be shown only indirectly. Individual States that have lower colored maternal mortality rates and that have had good programs in supervision and instruction of negro midwives can be cited, however. For instance, Florida was admitted to the birth-registration area in 1924 with a colored maternal mortality rate for that year of 186.9 for every 10,000 live births, and in 1926 this rate had declined to 148.5; Kentucky had a colored maternal mortality rate of 185 in 1922, and in 1926 this rate had declined to 106.2; Mississippi had a colored maternal mortality rate of 100.5 in 1922, and in 1926 this rate had declined to 91.6.

## IMPROVEMENT IN THE CARE AND HYGIENE OF INFANTS

Dissemination of information on the care of infants, especially in regard to proper feeding, has been an outstanding feature of the child-hygiene programs. Much of the high infant mortality of the past was due to gastrointestinal diseases; these are aggravated by improper, experimental, and haphazard feeding of infants and by general ignorance relating to their care. The bottle-fed baby was the victim of experimental formulas; the chief test of a formula apparently was whether the infant survived. Scant attention was given to normal development, growth, and weight. Mothers weaned their infants if their milk supply failed or if other difficulties arose in breast feeding, and much of this type of feeding was unsupervised by physicians. After the passage of the maternity and infancy act simple formulas of cow's milk adapted to the age and weight of the average normal infant were made available to a greatly increased number of mothers through State child-hygiene divisions. It should be borne in mind that activities under the maternity and infancy act are especially directed toward reaching rural districts with information on maternal and infant care. There were relatively few pediatricians in rural areas before 1922. The education of parents in infant care developed a demand for supervision of infant feeding on the part of rural physicians, so that in 1926 the number of rural physicians who were giving attention to infant feeding had greatly increased.

An analysis of the monthly death rates of infants in eight cities in comparison with their type of feeding made by the United States Children's Bureau has shown that the deaths among the infants who were artificially fed were nearly four times those that would have been expected at the rates prevailing for the infants who were breast fed. The mortality among the infants who were partly



ARTIFICIALLY FED      BREAST FED

DEATHS AMONG ARTIFICIALLY-FED INFANTS COMPARED WITH NUMBER OF DEATHS EXPECTED AT THE MORTALITY RATES PREVAILING AMONG BREAST-FED INFANTS, BASED UPON STUDIES OF 2,300 INFANTS IN EIGHT CITIES

breast fed in this group was also slightly higher than that among the infants who were wholly breast fed.<sup>24</sup> (See chart on p. 43.)

The individual States and the United States Children's Bureau have prepared material on the importance of breast feeding for distribution to the public, and attention has been directed in such literature to the hygiene and care of the mother necessary to maintain the supply of breast milk. The baby books and publications on prenatal care all emphasize the greater life expectancy of the breast-fed baby. Such educational work undoubtedly has contributed to the decline of gastrointestinal diseases reported as a cause of death in infants under 1 year of age.

In Table 9 a comparison of the causes of infant mortality in 1922 and 1926 in the United States birth-registration area of 1922 (excluding South Carolina) shows that in 1922 there were 12.7 deaths from gastrointestinal diseases during the first year of life for every 1,000 infants born alive, whereas in 1926 this rate had declined to 10.3—a decrease of 18.9 per cent. Formerly more infants under 1 year of age died from gastrointestinal diseases than from any other cause reported except natal and prenatal causes. With better feeding care and better hygiene of infants this cause of infant mortality has taken third place, and respiratory diseases have moved from third to second place as causes of infant deaths. A slight downward trend in infant mortality due to natal and prenatal causes has appeared in the five-year period 1922 to 1926. Apparently prenatal care is beginning to reduce the number of deaths from this group of causes. The rise in the figures for epidemic and communicable diseases and for respiratory diseases as causes of infant mortality, on the other hand, suggests the need for greater attention to these causes.

TABLE 9.—Comparison of infant mortality rates (deaths under 1 year per 1,000 live births) from certain groups of causes in the 1922 United States birth-registration area, exclusive of South Carolina; 1922 and 1926

Cause group	Mortality rate		Change 1922 and 1926	
	1922	1926	Rate	Percentage
Natal and prenatal causes <sup>1</sup> .....	36.2	35.1	-1.1	-3.0
Gastro-intestinal diseases <sup>2</sup> .....	12.7	10.3	-2.4	-18.9
Respiratory diseases <sup>3</sup> .....	13.7	14.2	+0.5	+3.6
Epidemic and communicable diseases <sup>4</sup> .....	3.9	4.8	+0.9	+23.1
External causes.....	0.9	1.1	+0.2	+22.2
All other causes <sup>5</sup> .....	5.9	5.6	-0.3	-5.1
Unknown or ill-defined diseases.....	2.4	2.3	-0.1	-4.2

<sup>1</sup> Includes premature birth, congenital debility, injury at birth, other diseases of early infancy, congenital malformations, syphilis, and tetanus.

<sup>2</sup> Includes diseases of the stomach, diarrhea and enteritis, dysentery.

<sup>3</sup> Includes bronchitis, broncho-pneumonia, pneumonia, influenza.

<sup>4</sup> Includes measles, scarlet fever, erysipelas, meningococcus meningitis, whooping cough, diphtheria, tuberculosis of the respiratory system, tuberculosis of the meninges, other forms of tuberculosis.

<sup>5</sup> Includes convulsions, all other causes.

<sup>24</sup> See Causal Factors in Infant Mortality; a statistical study based on investigations in eight cities, by Robert Morse Woodbury, Ph. D., p. 90 (U. S. Children's Bureau Publication No. 142, Washington, 1925).



## IMPROVEMENT IN PERSONNEL

The administration of the maternity and infancy funds in the United States brought into the State agencies as workers many technically trained persons, both physicians and nurses, who had good professional preparation but who had little or no special preparation for public-health work in so specialized a field as maternity and infancy. The number of physicians, nurses, or administrators in the United States who had had experience in maternity and infancy work was limited; and they were in positions in cities where many of them wished to remain. The result was that the State public-health and maternity and infancy workers were comparatively inexperienced in 1922. They have developed, after five years of work under the act, into an experienced, capable, and well-trained group. Standards for public-health workers have improved. States that had few or no trained workers and that were obliged to bring technically trained persons to their staffs from other States have developed from recruits from their own States well-trained persons who are able to meet the advancing standards. Practically all State bureaus or divisions of child hygiene now require their staff nurses to meet the standards formulated in 1924 by the committee representing the National Organization for Public Health Nursing, the nursing section of the American Public Health Association, and the Conference of State and Provincial Health Authorities of North America. This result alone should have a good influence on future work in the field of maternity and infancy.

## PRINCIPAL ACTIVITIES OF THE INDIVIDUAL STATES

A summary of the work done in the individual States as reported to the Federal office in their annual reports under date of July 1, 1927, is given in the following pages. The figures in regard to certain of the main activities have been summarized in Tables 2, 3, 4, and 5.

### ALABAMA

#### STAFF AND ACTIVITIES IN 1927

##### Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Montgomery.

##### Staff:

Director (nurse), 1 pediatrician (3 months), 4 nurses (1 part year, 1 part time), 2 vital-statistics clerks, 1 record clerk, 1 bookkeeper (part time), 1 stenographer. Thirty-one county nurses were paid for some maternity and infancy work.

##### Activities:

Child-health conferences conducted by physicians, 2,396; infants and preschool children registered and examined, 7,856; visits to conferences, 15,241; defects found, 3,886; children having defects, 3,484. Parents had defects corrected in 1,336 of the children.

Prenatal conferences conducted by physicians, 358; expectant mothers registered, 2,766; number examined, 2,292.

Conferences conducted by nurses, no physician present, 378; infants and preschool children inspected, 2,614; mothers instructed in prenatal care, 4,487; visits to conferences by children, 6,000. In addition there were 441 office consultations with mothers.

New permanent combined prenatal and child-health centers, 3 established. They are supported by county, State, and Federal funds.

Little mothers' classes, many; girls enrolled, 751; number completing course, 125; lessons in course, 12.

All the midwives known to the county health departments are required to report for conferences monthly or upon call. A permit to practice (for the current year only) is issued when the health officer or nurse considers the applicant a reasonably safe unskilled attendant for full-term or normal delivery. During the year under review 3,169 midwives were under supervision, 1,087 of whom were given a 12-lesson course of instruction.

Home visits by nurses, 72,132 (prenatal cases seen, 5,330; obstetrical cases, 48; postnatal cases, 3,539; infants, 7,025; preschool children, 3,601).

Talks and lectures, 2,023.

Literature distributed, 150,103 pieces.

Graduate courses for physicians, in 14 counties; attendance, 170. The pediatrician on the staff conducted demonstration pediatric clinics for local physicians. About one week was spent in each county. The physicians brought their patients to the clinics for examination by the pediatrician and for a round-table discussion of each case; and 339 children were examined (these are included in the number of children reported under child-health conferences). In most of the counties at least one meeting was held at which no patients were present, the time being devoted to a discussion of pediatric problems. In three counties, at the request of the physicians, an open meeting was held for mothers, at which a talk was given on infant and child care.

## Activities—Continued.

Exhibits conducted, 12, at county and community fairs. Exhibit material was lent twice.

Statistical studies, 3, of maternal and infant mortality, in certain areas.

Breast feeding was emphasized by the county nurses in the instruction given to mothers and expectant mothers under their supervision.

Infants born in the State during the year, 65,336; infants under 1 year of age reached by the work of the bureau, 7,025; preschool children reached, 3,601; expectant mothers reached, 5,330.

Counties in the State, 67; counties having maternity and infancy work during the year, 31.

The following organizations cooperated in the bureau's work: State department of education, extension service of the Alabama Polytechnic Institute, Tuskegee Normal and Industrial Institute, and the parent-teacher association.

The outstanding achievement of the year was the establishment of a clear-cut supervisory program.

## SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Stabilizing and extension of a county nursing service under supervision of the State bureau of child hygiene and public-health nursing have been accomplished.

The number of public-health nurses has increased. Before 1922 the nursing personnel of the health organization comprised 36 nurses (28 white, 8 negro). At the close of 1926 there were 74 nurses (58 white, 16 negro). Of this number 34 were on the maternal and infant-hygiene pay roll for full-time or part-time work.

Improvement in the control of midwives and in midwifery practice has been noted. In 1926-27 nearly 3,200 midwives were under supervision, and a course of instruction was given to nearly 1,100.

Registration of births has increased as a result of the state-wide campaign in which the bureau of child hygiene and public-health nursing and county maternity and infancy workers have assisted.<sup>25</sup>

A distinct advance has been made in the degree of intelligence with which local statistics relating to maternal and infant welfare are being studied by county health organizations.

As the State was not in the birth-registration area, no statement as to reduction of mortality rates can be made.

## ARIZONA

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, child-hygiene division, Phoenix.

## Staff:

Director, 3 nurses (part year).

Volunteer assistants—9 physicians, 2 dentists, 3 nurses, 10 lay persons.

## Activities:

Child-health conferences conducted by physicians, 33; infants and preschool children examined, 722; visits to conferences, 891; children having defects, 631; defects found, 1,738. Parents had defects corrected in 208 of the children.

Conferences conducted by nurses, no physician present, 23; children inspected, 248; mothers instructed in prenatal care, 12; visits by children to conferences, 467.

Dental conferences conducted by dentists, 9; preschool children receiving dental advice, 367.

Little mothers' classes, 2 organized; girls enrolled and completing course, 34; lessons in course, 5.

Mothers' classes, 4 organized; mothers enrolled and completing course, 51; lessons in course, 4.

<sup>25</sup> The State was admitted to the United States birth-registration area July 13, 1927.

## Activities—Continued.

Home visits by nurses, 4,250 (prenatal cases seen, 141; obstetrical cases, 3; postnatal cases, 85; infants, 762; preschool children, 953).

Community demonstrations, 17, consisting of health conferences and follow-up work in 17 communities.

Group demonstrations, 83, on preparing and sterilizing obstetrical supplies, making bed for confinement, bathing and dressing the baby, preparing formulas and bottles, and giving sun baths.

Talks and lectures, 72.

Literature distributed, 56,783 pieces.

Exhibit material was lent twice.

New names registered for prenatal letters, 159.

Nutrition work was done through individual instruction to mothers of children found to be undernourished.

Breast feeding was stressed by the nurses in their conferences with mothers.

Infants born in the State during the year, 8,626; infants under 1 year of age reached by the work of the division, 7,690; preschool children reached, 1,588; expectant mothers reached, 355. The division sends literature on infant hygiene to parents of infants whose births are registered in the State bureau of vital statistics (not including migratory families).

Counties in the State, 14; counties having maternity and infancy work during the year, 6; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 14.

The following organizations cooperated in the division's work: A county medical society, women's clubs, disabled veterans, and parent-teacher associations.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

Since the beginning of the State's cooperation under the maternity and infancy act efforts have been made to improve birth registration, and the State was admitted to the United States birth-registration area in 1926.

Arizona had a higher infant mortality rate than any other State in the United States birth-registration area in 1926. The rate for the year was 121.2. Figures from the United States Bureau of the Census are not available prior to that year (as the State was not in the registration area), but State figures indicate a very much higher rate in 1922 and a decided drop in infant mortality during the period of cooperation under the maternity and infancy act.

Since the beginning of the State's cooperation under the maternity and infancy act three communities have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

**ARKANSAS**

**STAFF AND ACTIVITIES IN 1927**

**Administrative agency:**

State board of health, bureau of child hygiene, Little Rock.

**Staff:**

Director (State health officer serving), 1 physician (half year), 2 nurses, 1 midwife supervisor (nurse, part year), 2 vital-statistics field workers (part year), 1 stenographer, 1 chauffeur (part year). Eleven county nurses were paid for some maternity and infancy work.

**Activities:**

Combined prenatal and child-health conferences, 124, conducted by local physicians who volunteered their services, assisted by county nurses paid for maternity and infancy work; expectant mothers registered and examined, 61; infants and preschool children registered and examined, 1,754.

Child-health conferences conducted by physicians, 52; infants and preschool children registered and examined, 1,570; defects found, 5,728; children having defects, 1,556.

Prenatal conference conducted by physician, 1; expectant mothers registered and receiving advice, 16.



## Activities—Continued.

Conferences conducted by nurses, no physician present, 21; infants and preschool children inspected, 298; mothers instructed in prenatal care, 50. New permanent child-health centers, 4 established as a result of advisory assistance from the bureau. They are supported by Federal, State, county, and private funds.

New permanent prenatal centers, 2 established as a result of the maternity and infancy work. The are supported by Federal, State, county, and private funds.

Little mothers' classes, 6 organized; girls enrolled, 112.

Mothers' classes, 5 organized; mothers enrolled, 25; lessons in course, 11.

Midwives' group conferences, 23, in 8 counties; midwives instructed at these meetings, 194; midwives' classes organized by county nurses, 19; midwives enrolled, 398.

Home visits by nurses, 3,877 (to prenatal, obstetrical, and postnatal cases, infants, preschool children, and midwives).

The county nurses employed for maternity and infancy work gave assistance in the flooded area of the State.

Group demonstrations, 30, on items in the inspection of children and the prevention and correction of defects, at meetings of parents and teachers; on feeding, bathing, and dressing the baby, at girls' clubs.

Survey, 1, of midwives (begun in 1924, completed in the year under review).

Campaigns, 2: (1) For immunization against typhoid fever, in 1 county.

(2) For promotion of birth and death registration, in cooperation with the State bureau of vital statistics, in 12 counties. This work aided greatly in raising the registration of births and deaths to the standard required for the registration areas, to which the State was admitted in 1927.

Talks and lectures, 103.

Literature distributed, 52,645 pieces.

Exhibits conducted, 2, at the State fair and at the meeting of the State parent-teacher association. Films on child health were shown 18 times. Exhibit material was lent 4 times.

Counties in the State, 75; counties having maternity and infancy work during the year, 60; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 75.

The following organizations cooperated in the bureau's work: State board of education (school-enumeration and home-economics sections), State society for crippled children, State federation of women's clubs, American Legion auxiliary, State fair association, a negro-welfare organization, and the parent-teacher association.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

The admission of the State to the birth and death registration areas in 1927 followed a campaign of education instituted by the State health department assisted by the staff of the bureau of child hygiene and other agencies.

The survey of midwives, begun in 1924 and continued to 1927, included supervision and instruction of midwives. Many midwives not previously known were added to the record in the course of the survey. More midwives are working under permits, registering births, and using silver nitrate as a prophylactic in the eyes of the newborn since this work was begun. The midwives carrying a fair equipment increased from 6 per cent in 1924 to 13 per cent in 1926. The number known to be practicing in 1924 was 3,289 (1,166 white, 2,023 negro). In 1926 the number was 4,158 (1,445 white, 2,713 negro). The applications for permits to practice received from negroes increased from 87 per cent of all applications in 1924 to 90 per cent of all received in 1926.

The standards and training of public-health nurses have been improved during the period of cooperation.

During the last months of the period much of the State was devastated by the Mississippi River flood. Considerable assistance was given in the devastated areas by the county nurses employed for maternity and infancy work.

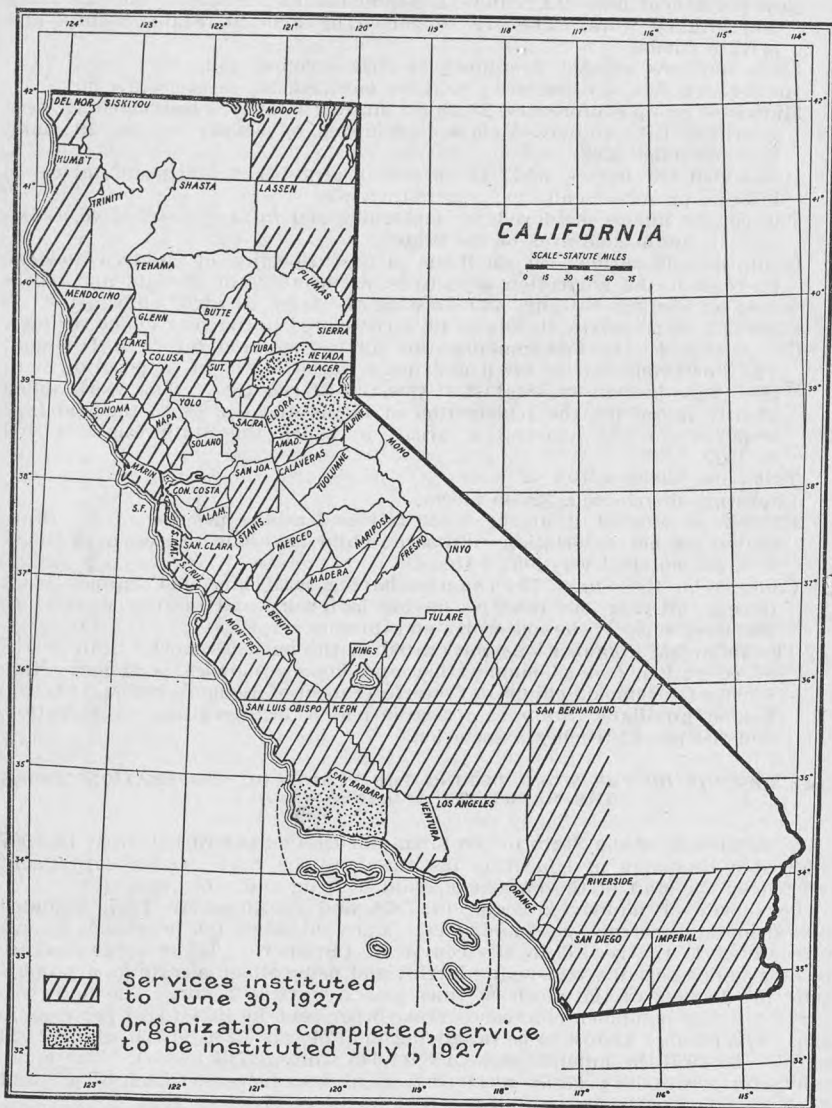
As the State was not admitted to the birth-registration area until the winter of 1927 no statement as to reduction of mortality rates can be made.

## CALIFORNIA

## STAFF AND ACTIVITIES IN 1927

Administrative agency:

State board of health, bureau of child hygiene, San Francisco.



COUNTIES IN CALIFORNIA IN WHICH NURSING SERVICE HAS BEEN INSTITUTED UNDER THE MATERNITY AND INFANCY ACT

## Staff:

Director (physician), 1 physician, 1 nurse, 2 maternity-home inspectors (1 for 11 months), 3 clerks (1 half time), 2 stenographers (1 half time).  
Twenty-five county nurses and one county physician were paid for some maternity and infancy work.  
Volunteer assistants, 55 physicians, 9 dentists, 27 nurses, 287 lay persons.

## Activities:

- Child-health conferences conducted by physicians, 360 (by staff physicians, 54; by local physicians in conferences arranged by county nurses, 306); infants and preschool children examined, 8,118 (by staff physicians, 1,626; by physicians at conferences arranged by county nurses, 6,492); visits to conferences, 9,178 (to conferences held by staff physicians, 1,626; to conferences arranged by county nurses, 7,552).
- Prenatal conferences conducted by physicians, 78; expectant mothers registered and examined, 186; visits to conferences, 626.
- Conferences conducted by nurses, no physician present, 21; infants and preschool children inspected, 935; visits to conferences, 1,696.
- New permanent child-health centers, 21 established. They are supported by Federal, State, county, and city funds. When the bureau agrees to give financial assistance to any locality in developing its child-hygiene program the development of permanent child-health centers is always part of the plan.
- New permanent prenatal center, 1 established as a result of the local demand for prenatal care. It is supported by local funds.
- Little mothers' classes, 26 organized; girls enrolled, 357; lessons in course, 10 to 12.
- Mothers' classes, 36 (conducted by staff physicians, 22; conducted by county nurses, 14); mothers enrolled, 740 (in physicians' classes, 520; in county nurses' classes, 220). In addition 14 conferences for mothers were held with an attendance of 262.
- Home visits by nurses, 26,982 (to prenatal cases, 1,186; obstetrical cases, 5; postnatal cases, 728; infants, 10,353; preschool children, 13,609; miscellaneous, 1,101).
- Maternity homes inspected, 249; maternity hospitals inspected, 206; inspections made, 522 (of maternity homes, 284; of maternity hospitals, 238).
- Community demonstration, 1: A nurse was detailed to a county for three months to carry on a child-hygiene program. She was assisted by a staff physician, local physicians, and lay women. A child-health center was established, a preschool drive was conducted, home visits were made, and the correction of defects was obtained for many preschool children.
- Group demonstrations, 534; on nursing care in the home, care of the baby, preparation of food, and preparation of maternity outfit.
- Campaigns, 6: (1) For state-wide examination of preschool children and correction of their defects before the children should enter school. In 21 counties the bureau gave supervision only, the program being carried out entirely by local workers. (2) For prevention of trachoma, in 2 counties. (3) For prevention of diphtheria, in 8 counties. (4) For prevention of smallpox, in 3 counties. (5) For prevention of typhoid fever, in 1 county. (6) For prevention of scarlet fever, in 1 county.
- Talks and lectures, 448 (by staff, 136; by county nurses, 312).
- Literature prepared: Record forms, examination blanks, baby folder, follow-up cards.
- Literature distributed, 128,740 pieces.
- New names registered for prenatal letters, 1,787; prenatal letters distributed, 5,526 sets.
- Exhibits conducted, 77 (by staff, 4, at the State fair, State dairy council, parent-teacher convention, and child-health week; by county nurses, 73). Exhibit material was lent 16 times.
- Scientific articles prepared—Prenatal Care, Leadership in Health, Before Adolescence, Common Discomforts of Childhood.
- Nutrition work was done through individual instruction.
- Breast feeding was promoted by individual instruction to mothers at conferences, in classes, and in home visits, and by distribution of a pamphlet on the subject.
- Infants born in the State during the year, 84,100 (estimated); infants under 1 year of age reached by the work of the bureau, 14,076; preschool children reached, 18,939 (still others were reached through literature distributed); expectant mothers reached, 6,898.
- Counties in the State, 58; counties having maternity and infancy work during the year, 55; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 58.

## Activities—Continued.

The following organizations cooperated in the bureau's work: State board of education, American Legion, American Red Cross, federated women's clubs, men's service clubs, and the parent-teacher association.

The outstanding achievement of the year was standardization and further improvement in the organization of the public health nursing service.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

Maternity and infancy nursing service has been instituted in 31 counties as a result of assignment of nurses to them; and organization for the service (to start at the close of the year under review) has been completed in 3 others. (See map on p. 50.)

Since the beginning of the State's cooperation under the maternity and infancy act 13 counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

Inspection and licensing of maternity homes and hospitals has been a duty of the bureau of child hygiene since 1925.

The infant mortality rate has declined from 71.1 in 1922 (the year in which the State began cooperation under the maternity and infancy act) to 62.7 in 1926. The maternal mortality rate has declined from 71.9 in 1922 to 56.4 in 1926.

**COLORADO**

**STAFF AND ACTIVITIES IN 1927**

## Administrative agency:

State department of public instruction, child-welfare bureau, Denver.

## Staff:

Director, 2 physicians (part time), 2 nurses, 1 clerk, 1 stenographer.

Temporary assistants were employed as needed.

Volunteer assistants (for 1 to 3 days' service)—15 physicians, 4 dentists, 7 nurses, 16 lay persons; 940 other lay persons gave occasional assistance.

## Activities:

Child-health conferences conducted by physicians, 51; infants and pre-school children registered and examined, 2,353; defects found, 7,327; children having defects, 2,243. Parents had defects corrected in 294 of the children (reports incomplete). The conferences lasted 1 to 3 days, and several were return conferences. Improvement was noted in the condition of the children in many communities having return conferences; parents had had corrections made for a number of children whose defects had been noted at the first conference; in three towns local groups had established child-health centers following the first conference; and in one community having many undernourished children the services of a nutritionist had been obtained.

Prenatal conferences conducted by physicians, 19; expectant mothers registered, 237; number examined, 225; visits to conferences, 237.

Dental conferences conducted by dentists, 47, in connection with the child-health conferences; preschool children receiving dental advice, 2,353.

New permanent child-health centers, 2 established. They are supported by local organizations.

Little mothers' classes, 2; girls enrolled, 40; lessons in course, 12.

Mothers' classes, 18; mothers enrolled, 293; lessons in course, 12.

Home visits by nurses, 1,627 (to prenatal cases, 123; infants, 636; pre-school children, 868).

Maternity homes inspected, 2; inspections made, 4.

Group demonstrations, 41, of maternity packs, preparation of food formulas, and bathing and dressing the baby.

Surveys, 2: (1) Of birth registration, in 1 town. (2) Of the adequacy of public aid to children in their own homes. Under the State law a child can be considered dependent six months before its birth, hence the mother may receive aid during the six-month period preceding the child's birth as well as afterward.

Campaign, 1: For promotion of birth registration. Special educational work was done, as the State is not yet in the birth-registration area.

Talks and lectures, 421.



## Activities—Continued.

Literature prepared: Leaflets on sunshine, diet sheets, health certificates, literature-request cards.

Literature distributed, 12,250 pieces.

Exhibits conducted, 6, at county fairs and at State meetings of various organizations.

Statistical studies, 2: (1) Weights of children in San Luis and San Juan Valleys. (2) Physicians, midwives, and other persons reporting births in 1925. It was found that physicians had reported 18,039 births; midwives, 572; others, 749; and 51 certificates were unsigned.

Breast feeding was emphasized through the literature sent to mothers when their babies were 1 to 2 weeks old.

Infants under 1 year of age reached by the work of the bureau, 3,720; preschool children reached, 3,675; expectant mothers reached, 3,033. The bureau sent literature on infant hygiene to parents of all infants whose births were reported in the newspapers.

Counties in the State, 63; counties having maternity and infancy work during the year, 51; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 57.

The staff nurses assisted in the campaign conducted by the parent-teacher association for the examination of preschool children and correction of their defects before they should enter school in the fall.

The following organizations cooperated in the bureau's work: State university, State agricultural college, State tuberculosis association, State dental association, auxiliary of the State medical society, Colorado Psychopathic Hospital, American Red Cross, Women's Christian Temperance Union, women's clubs, and the parent-teacher association.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Since the beginning of the State's cooperation under the maternity and infancy act one county and five towns have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

Improvement has taken place in the physical condition of children in the State, as shown by examination made at "return" conferences for children examined at previous conferences. Parents had had defects corrected for a number of children, a few child-health centers had been established by local groups, and one community had employed a nutritionist.

As the State is not in the birth-registration area no statement as to reduction of mortality rates can be made.

### DELAWARE

#### STAFF AND ACTIVITIES IN 1927

##### Administrative agency:

State board of health, division of child hygiene, Dover.

##### Staff:

Director (physician), 9 nurses, 1 vital-statistics clerk and bookkeeper, 1 clerk. Five physicians were employed as needed to conduct conferences.

##### Activities:

Combined prenatal and child-health conferences conducted by physicians, 39; expectant mothers registered and examined, 12; infants and preschool children registered and examined, 973.

Child-health conferences conducted by physicians, 276; infants and preschool children registered and examined, 702; visits to conferences, 3,808. Defects found, 598; children having defects, 405. Parents had defects corrected in 330 of the children.

Prenatal conferences conducted by physicians, 52; expectant mothers registered, 262; number examined, 251; visits to conferences, 587.

Conferences conducted by nurses, no physician present, 1,086; infants and preschool children inspected, 2,642; mothers instructed in prenatal care, 292; visits to conferences, 22,043 (by children, 21,356; by mothers, 687).

New permanent combined prenatal and child-health center, 1 established. It is supported by Federal and State funds.

Little mothers' classes, 4 organized; girls enrolled and completing course, 136; lessons in course, 41.

## Activities—Continued.

Midwives' classes, 20 organized; midwives enrolled (plus those carried over from previous year) and completing course, 219; lessons in course, 12.

Home visits by nurses, 32,458 (prenatal cases seen, 532; obstetrical cases, 222; postnatal cases, 266; infants, 3,110; preschool children, 6,469).

Infant home inspected, 1; inspections made, 4.

Community demonstration, 1, in 1 town, lasting 5 days, on various phases of maternity and infancy work.

Campaign, 1, for immunization against diphtheria, in 52 towns and 1 city; preschool children immunized, 1,730.

Talks and lectures, 175.

Literature prepared: Diseases of children, symptoms and suggestions for prevention, Delaware Baby Book, Diphtheria Prevention, Sunlight for Babies, Infant Feeding, Preventive Medicine, Periodic Health Examinations, prenatal letters.

Literature distributed, 61,100 pieces.

New names registered for prenatal letters, 432; prenatal letters distributed, 372 sets.

Nutrition work was done through individual instruction to mothers at conferences.

Exhibit conducted, 1, at the State fair.

Statistical study, 1, of maternal mortality.

Breast feeding was emphasized at the itinerant conferences, in the work done by the nurses, and in literature sent to expectant mothers.

Infants born in the State during the year, 4,157; infants under 1 year of age reached by the work of the division, 3,514; preschool children reached, 10,382; expectant mothers reached, 1,372.

Counties in the State, 3; counties having maternity and infancy work during the year, 3.

During the year under review the division supervised the maternity and infancy work of community nurses who sent reports to the division.

The Delaware Antituberculosis Society and the parent-teacher association cooperated in the division's work: These organizations carried on a campaign for the examination of preschool children and correction of their defects before the children should enter school.

The outstanding feature of the year's work was the campaign for the prevention of diphtheria.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

During the five-year period ended June 30, 1927, children seen at conferences had 3,850 defects corrected.

As Delaware was not in the United States birth-registration area prior to 1921 figures on maternal and infant mortality are not available from the United States Bureau of the Census, but according to State figures the infant mortality rate was reduced from 101.4 in 1922 to 95.9 in 1926. For the five-year period preceding the State's cooperation under the maternity and infancy act (1917-1922, excluding 1918) the average rate was 119 as compared with an average rate of 96.4 for the five-year period since the State's cooperation under the maternity and infancy act—a reduction of 19 per cent. For the rural areas of the State the reduction was slightly greater (22 per cent).

Among the causes of deaths of infants which probably more than any other would be influenced by the care developed through instruction in proper feeding are diarrhea and enteritis. According to the State figures the death rates of infants under 1 year of age from these causes showed with slight variation a downward trend from 1922 to 1926 for the State as a whole, also for both urban and rural areas. Even in 1925, when there was an increase in the rates from diarrhea and enteritis throughout the country, the rate for Delaware was lower than in any of the five years preceding the operation of the maternity and infancy act.

As a result of the division's work three community nurses are now carrying on in two cities maternity and infancy work begun with maternity and infancy funds.

The type of work done by the midwives has improved since the beginning of the maternity and infancy work.

## FLORIDA

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Jacksonville.

## Staff:

Director (nurse, part time), 12 nurses (3 part year, 9 part time), 1 auditor (part time), 1 file clerk (part year), 1 stenographer (part time), 1 typist (part time).

Volunteer assistants, 27 physicians, 19 dentists, 120 nurses, 280 lay persons.

## Activities:

Child-health conferences conducted by physicians, 40; infants and preschool children registered and examined, 1,184; children having defects, 787.

Prenatal conferences conducted by physicians, 59; expectant mothers registered and examined, 488.

Conferences conducted by nurses, no physician present, 377; mothers instructed in prenatal care, 887; infants and preschool children inspected, 4,461.

Dental conferences, 287, conducted by dentists who volunteered their services.

New permanent prenatal and child-health centers, 3 established. They are supported by a city department, local organizations, and the American Red Cross.

New permanent child-health centers, 5 established. They are supported by city health departments and private organizations.

Little mothers' classes, 53 organized; girls enrolled, 300; lessons in course, 12.

Midwives' class meetings, 1,274; total attendance, 3,595. About 1,800 midwives were under supervision.

Home visits by nurses, 21,702 (prenatal cases seen, 791; postnatal cases, 210; infants, 3,259; preschool children, 4,295).

Surveys, 2: (1) Of infant mortality, in 1 county. (2) Of birth registration, state-wide.

Talks and lectures, 285.

Literature distributed, approximately 18,000 pieces.

Exhibits conducted, 10, at county fairs.

Nutrition work was done through instruction to individual mothers at conferences and in visits to their homes.

The director assisted several local organizations in their plans for work for maternal and preschool-child welfare.

Infants born in the State during the year, 34,439; infants and preschool children reached by the work of the bureau, 8,952; expectant mothers reached, 1,974. The bureau sent literature on infant hygiene to parents of all infants whose births were reported to it.

Counties in the State, 67; counties having maternity and infancy work during the year, 67.

The following organizations cooperated in the bureau's work: State federation of women's clubs, State medical association, and the parent-teacher association.

The outstanding achievements of the year were the improvement in the work of the midwives under the supervision of the bureau, the increase in interest in child-health conferences and in requests for them, and the greater interest in the health of mothers and babies on the part of fathers of families, who not infrequently accompanied their wives or brought the children to conferences if the mother could not bring them.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

The infant mortality rate in 1924 (the year in which the State was admitted to the United States birth-registration area) was 81.8 per 1,000 infants born alive. This rate had declined to 74.8 in 1926. In 1924 the mortality rate was 69.8 for every 1,000 white babies, and in 1926 it was 61.8. The rate for the colored babies was slightly higher in 1926 than in 1924. In the rural areas,

however, the rate for colored babies declined from 96 in 1924 to 93.9 in 1926; for white babies it declined from 71.6 to 60.

The maternal mortality rate likewise declined in the period 1924 to 1926. For every 82 babies born alive in 1924 one mother lost her life from some cause connected with pregnancy and childbirth. In other words, the maternal mortality rate was 121.4 per 10,000 live births. In 1926 the rate had fallen to 106.9 per 10,000 live births. This meant that 1 mother died for every 93 babies born alive. The rate for white mothers was practically stationary, while that for colored mothers declined from 186.9 to 148.5. In the rural areas the rate in 1924 was 126.2 for every 10,000 live births as compared with 109.7 in 1926. For rural white mothers the rate decreased from 96.7 to 94.6, and for colored mothers it decreased from 187.5 to 145.8.

The supervision of midwives has resulted in better midwifery practice that in all probability has contributed to lower maternal and infant death rates.

## GEORGIA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, division of child hygiene, Atlanta.

#### Staff:

Director (physician), 1 physician (part year), 5 nurses (3 part year), 1 laboratory assistant, 1 stenographer, 1 chauffeur for healthmobile (part year). Sixteen county nurses in 12 counties were paid for maternity and infancy work (14 full time, 2 half time) on part-salary basis.

#### Activities:

Child-health conferences conducted by physicians, 638 (on the healthmobile and in counties where public-health nurses were paid for maternity and infancy work); infants and preschool children registered and examined, 8,942; defects found in children examined on the healthmobile, 5,209. The healthmobile with a staff of advance agent (nurse), physician, nurse, and chauffeur was in the field six months during the year under review. Conferences were held on the truck during the day. In the evening public meetings were held at which talks on health were given and motion pictures on health subjects were shown. Approximately 21,000 persons were reached by the conferences and meetings.

Prenatal conferences conducted by physicians, 293; expectant mothers registered and examined, 5,854.

Conferences conducted by nurses, no physician present, 42; infants and preschool children inspected, 389; mothers instructed in prenatal care, 44. New permanent child-health center, 1 established as a result of the maternity and infancy work. It is supported by State, city, and private funds.

Little mothers' classes, 108 organized; girls enrolled and completing course, 1,915; lessons in course, 11.

Mothers' classes, 69 organized; mothers enrolled and completing course, 1,207; lessons in course, 11.

Midwives' classes, 96 organized; midwives enrolled and completing course, 747; lessons in course, 10. Following the course of instruction a midwives' club was formed, and monthly meetings were held. Many of the unfit midwives have ceased practicing, and the use of silver nitrate for the prevention of blindness has increased greatly. (For mention of assistance given by the United States Children's Bureau in the work with midwives see pp. 129-130.)

Home visits by nurses, 42,862 (prenatal cases seen, 6,220; postnatal cases, 1,431; infants, 11,084; preschool children, 6,533).

Group demonstrations, 3,882, on making maternity outfits, preparing food, and other phases of maternal and infant care, also demonstration child-health conferences conducted on the healthmobile.

Campaign, 1, for immunization against diphtheria, state-wide. A sufficient quantity of toxin-antitoxin for 200 immunizations was given to each county for use in immunizing preschool children. The work with these children led parents to have their older children immunized. It was estimated that as a result of this campaign 100,000 children were immunized. The State pediatric society and physicians throughout the State cooperated in this work.



## Activities—Continued.

The division cooperated in a campaign for the observance of May Day as Child Health Day.

Talks and lectures, 329, including talks by the healthmobile unit. The radio was used frequently, and talks were broadcast from a station having an audience estimated at 100,000 persons. A representative from the State board of health gave talks on child hygiene at teachers' institutes conducted by the State department of education.

Literature distributed, 109,141 pieces.

Many daily papers published articles on maternal and infant hygiene prepared by the division.

Nutrition work was done through individual instruction to parents whose children were examined in the healthmobile and through 325 nutrition conferences.

Exhibits conducted, 52, at bazaars, at county fairs, and in county health department offices.

Educational work was done to promote the registration of births.

In addition to their work included in the foregoing paragraphs the nurses were instrumental in having defects corrected in 1,344 children and in having 889 Wassermann tests made. They took 1,110 children to physicians for vaccination against smallpox and 620 for inoculation against typhoid fever.

Infants and preschool children reached by the work of the division, 36,301; expectant mothers reached, 18,146.

Counties in the State, 161; counties having maternity and infancy work during the year, 117; counties in which the division has done maternity and infancy work since the acceptance of the maternity and infancy act, 149.

The following organizations assisted in the division's work: State department of education, State dental association, State league of women voters, Women's Christian Temperance Union, civic clubs, women's clubs, the parent-teacher association, and other organizations.

Among the outstanding features of the year's program were the work with midwives and the work done for immunization against diphtheria.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Securing the cooperation of state-wide organizations as well as of other groups with the maternity and infancy work has developed definite improvements in the field of maternal and infant welfare.

The campaign for the immunization of preschool children against diphtheria, assisted by the State pediatric society and the medical profession of the State, resulted in the giving of antitoxin to approximately 100,000 children.

The State dental association cooperated in obtaining dental corrections. The estimated number of midwives in the State is 6,000; instruction has been given to approximately 4,000; the midwife situation has improved since the beginning of the maternity and infancy work.

The use of silver nitrate for the prevention of blindness in babies has greatly increased. During the year 1,451 individuals ordered 66,457 ampoules of this prophylactic.

As the State was not in the birth-registration area figures on maternal and infant mortality rates from the United States Bureau of the Census are not available.<sup>26</sup> According to State figures there has been a marked reduction in the infant mortality among negroes in Macon, Ga., where special work has been done by a negro nurse.

The amount of maternity and infancy work has increased in the period of cooperation under the maternity and infancy act. For example, in 1924 one county nurse reported from her county 35 child-health conferences, with 266 babies in attendance, and 1,950 home visits; in 1926, 310 conferences were reported, with an attendance of 936 babies, and 6,381 home visits were reported. In 1924 a total of 318 prenatal cases were supervised in this county, with

<sup>26</sup> In December, 1927, the State was admitted to the birth and death registration areas as of 1928.

1,638 visits; in 1926 a total of 1,549 prenatal cases were supervised, with 2,358 home visits.

The number of Wassermann tests made for prenatal cases has increased. In the fiscal year 1927 a physician reported for one prenatal clinic 1,172 such tests with 14 per cent showing positive reactions. (The work at this clinic received some assistance from nurses on the staff of the division of child hygiene.)

## HAWAII

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

Territorial board of health, division of maternity and infancy, Honolulu.

#### Staff:

Director (physician), 4 nurses, 1 stenographer. (Twelve nurses on the Territorial board of health not paid from maternity and infancy funds gave one or two days a week to maternity and infancy work.)

Volunteer assistants—12 physicians, 4 nurses, 17 lay persons.

#### Activities:

Child-health conferences conducted by physicians, 1,302; infants and pre-school children registered and examined, 5,629; visits to conferences, 21,832.

New permanent child-health centers, 12 established, 7 of which were part of the division's work. Five were conducted by plantations cooperating with the division.

Little mothers' class, 1; girls enrolled, 10; number completing course, 8; lessons in course, 6.

Home visits by nurses, 11,155 (prenatal cases seen, 77; infants, 498; pre-school children, 928).

Talks and lectures, 13.

Nutrition work was an important part of the program in the conferences at the child-health centers. Preparation of food was demonstrated at the health centers and also in the homes.

Scientific article prepared: "Growth of children in Hawaii."

Infants born in the Territory during the year, 12,296; infants under 1 year of age reached by the work of the division, 3,003; preschool children reached, 2,626.

Counties in the Territory, 5; counties having maternity and infancy work during the year, 4; work is not allowed in the county containing the leper settlement.

The division's program during the year consisted almost entirely of child-health conferences held regularly in child-health centers in different parts of the islands, and of follow-up visits to the homes of the children who attended these conferences.

### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The Sixty-eighth Congress extended the benefits of the maternity and infancy act to the Territory of Hawaii, and since April 13, 1925, the Territory has cooperated under the act.

There was an increase in the amount of work done in the second year of cooperation compared with that in the first year. The attendance at child-health centers in 1926 was 10,986; in 1927, 21,832. In 1926, 14 per cent of the infants born during the year were under supervision; in 1927, 24 per cent. A supervising nurse was assigned to each of the four islands—Kauai, Hawaii, rural Oahu, and Maui. This plan covers the Territory with more efficient supervision than prior to the acceptance of the act. Figures from the United States Bureau of the Census are not available, as Hawaii is not in the birth-registration area, but Territorial statistics show a lower infant mortality rate among both Hawaiians and Filipinos for 1927 than for 1926. Both races have high infant mortality rates. The rate for Hawaiians has declined 21.31 points and that for Filipinos 61.13 points since the beginning of the maternity and infancy work.

## IDAHO

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

Department of public welfare, bureau of child hygiene, Boise.

## Staff:

Director (physician), 2 nurses (1 part year), 1 bookkeeper and stenographer. Physicians were employed as needed to conduct conferences.

## Activities:

Combined prenatal and child-health conferences conducted by physicians, 96; expectant mothers registered and examined, 8; infants and preschool children registered and examined, 3,983; defects found in children, 7,402; children having defects, 3,202.

Home visits by nurses, 477 (infants seen, 172; preschool children, 181).

Surveys, 3: (1) Of hospitals. (2) Of midwives. (3) Of birth registration. All were state-wide.

Campaigns, 2: (1) For promotion of breast feeding. (2) For promotion of birth registration. The State was admitted to the United States birth-registration area in the autumn of 1926. Both campaigns were state-wide.

Talks and lectures, 21.

Literature prepared: Prenatal letters (revised), nutrition chart.

Literature distributed, 13,054 pieces.

New names registered for prenatal letters, 293; prenatal letters distributed, 325 sets.

Nutrition work was done through individual instruction to mothers at conferences.

Exhibits conducted, 15, consisting of layettes, posters, charts, and literature. Exhibit material prepared, charts showing causes of puerperal and infant deaths, by counties.

Statistical studies, 2, of puerperal and infant deaths, by counties.

Breast feeding was emphasized in all individual and group instruction to mothers.

Infants born in the State during the year, 9,612; infants and preschool children reached by the work of the bureau, 17,390; expectant mothers reached, 293.

Counties in the State, 44; counties having maternity and infancy work during the year, 43; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 44.

As a result of the bureau's work three counties employed public-health nurses.

The following organizations cooperated in the bureau's work: State medical society, State league of women voters, State legislative council of women, State federation of women's clubs, American Red Cross, Women's Christian Temperance Union, two prominent church relief societies, and the parent-teacher association.

The outstanding achievement of the year was the admission of the State to the United States birth-registration area.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

In every county in the State maternity and infancy work has been done during the period of cooperation under the maternity and infancy act. As a result of the work of the bureau of child hygiene three counties have employed public-health nurses.

The State was admitted to the United States birth-registration area in the autumn of 1926, the bureau of child hygiene having assisted in the campaign to reach the standard of registration of births required for entry.

As the State was not in the registration area before 1926 maternal and infant mortality rates are not available from the United States Bureau of the Census, but figures from the State indicate a lower infant mortality in 1926 than in 1922 (the year in which the State began cooperation under the maternity and infancy act). A declining maternal mortality rate is suggested by the fact that the actual number of maternal deaths reported in the State was 92 in 1922 and 45 in 1926.

The bureau of child hygiene has reached all midwives practicing in the State, and they have been required to comply with the State law concerning the practice of midwifery. The situation in regard to the midwives has improved since the beginning of the maternity and infancy work.

## INDIANA

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, division of infant and child hygiene, Indianapolis.

## Staff:

Director (physician), 3 physicians (2 part year), 5 nurses (4 part year), 1 exhibit director, 1 vital-statistics clerk, 1 secretary, 3 stenographers. Other physicians, nurses, and stenographers and field assistants were employed as needed.

## Activities:

Child-health conferences conducted by physicians, 204; infants and preschool children registered and examined, 6,078; defects found, 29,086; children having defects, 5,932. Parents had defects corrected in approximately 60 per cent of the children.

Mothers' classes, 220; mothers and high-school girls enrolled plus those carried over from previous year, 10,658; number completing course, 9,665; lessons in course, 5. At the close of the year under review the mothers' class program, begun in 1924, had been conducted in all but 5 of the 92 counties of the State.

Classes for teachers were conducted at several teachers' institutes.

Group demonstrations, 520. Two were given in each county as part of the mothers' classes, others were given at county fairs, the State fair, child-health week at Winona Lake Chautauqua, and State group meetings.

Campaigns, 3: (1) For immunization against diphtheria. (2) For the state-wide observance of May Day as Child Health Day. (3) For the examination of preschool children and correction of their defects before the children should enter school.

Talks and lectures, 770.

Literature prepared: Vitamins and Health (revised), To Mothers of Indiana, The Indiana Better Baby.

Literature distributed, 168,259 pieces.

Exhibits conducted, 51. These were of three types: (1) Posters, which were displayed in connection with lectures and at State meetings of various kinds. (2) Posters, books, and such models as that of maternity room and the baby's bath. (3) Large exhibits, demonstrating maternity and infancy work that communities can undertake. The most complete exhibit of this type was conducted at the State fair.

The child-hygiene activities at the State fair have increased greatly since the beginning of this work. The first "better-baby" building on the fairground was completed in 1924; in the year under review a new building was erected from funds appropriated to the State board of agriculture for this purpose by the legislature, supplemented by special funds provided by that board. Some of its rooms are equipped for conducting physical examination of infants and preschool children; others contain very complete exhibits of models, literature, charts, and posters; one room is equipped as a day nursery, and in the adjoining playground parents visiting the fair can leave their children. Physicians, nurses, and other assistants were employed by the State board of agriculture to assist the division's physicians and nurses in conducting demonstration conferences and in examining children for a better-baby contest. A total of 1,274 infants were thus examined in 1926, and 1,376 were examined in 1927.

Articles relating to maternity and infancy work were contributed to the monthly bulletin of the State board of health.

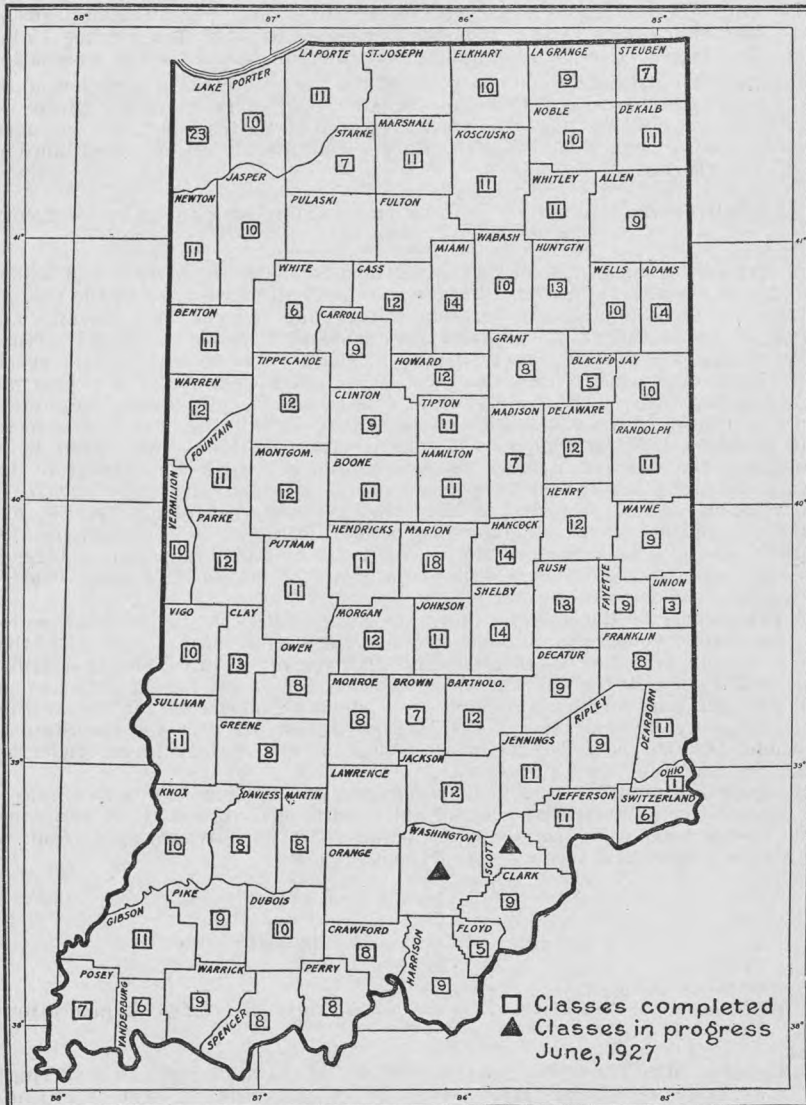
Statistical studies, 8: Of birth registration; of midwives; of the accidents of pregnancy of a group of mothers; of the maternity care received by a group of mothers; of the mental development of a group of preschool children; of the nutrition of a group of preschool children; of the diseases and weight records of a group of preschool children; of the physical defects noted in conferences.



Activities—Continued.

Breast feeding was promoted through individual instruction to mothers at conferences and in mothers' classes and in literature distributed.

County child-health boards organized, 11. Their purpose is to promote the examination of preschool children and correction of their defects, to protect them against danger of disease, and to promote their care,



NUMBER OF CLASSES IN MATERNAL AND INFANT CARE CONDUCTED IN INDIANA, MARCH, 1924-JUNE, 1927, INCLUSIVE

training, and proper nutrition. An effort is made to have on these boards representatives from all the organizations conducting child-health activities.

Infants born in the State during the year, 63,375; infants and preschool children reached by the work of the division, 37,708.

## Activities—Continued.

Counties in the State, 92; counties having maternity and infancy work during the year, 36; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 91. (One county had had maternity and infancy work previously.)

The following organizations cooperated in the division's work: Other State departments, State dental association, State federation of women's clubs, State league of women voters, State farm bureau, American Association of University Women, Women's Christian Temperance Union, fraternal and business organizations, and the parent-teacher association.

Among the outstanding achievements of the year were the completion of the county-wide child-health conferences for all the 92 counties in the State, the completion of mothers' classes in all except 5 of the counties, the organization of the 11 county child-health boards, and the state-wide observance of Child Health Day.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

A division of child hygiene was established in the State in 1919 and a plan laid for an educational program in maternal and child care prior to the passage of the act for the promotion of the welfare and hygiene of maternity and infancy. Expansion of the program was made possible by the State's acceptance of the act. Education of parents in the care of infants and preschool children through conferences has been an important feature of the program. In the period May, 1920, to July, 1922, a total of 236 child-health conferences were held in 36 of the 92 counties in the State. During the period of cooperation (1922 to 1927) a total of 777 child-health conferences were held in 82 counties. The average number of conferences per year was therefore 118 before the beginning of the State's cooperation, whereas during the period the average was 155. Instruction in the care of the mother before, during, and after confinement through class instruction, lectures, and visual-education methods has also been a main feature in the program. From March, 1924, to the close of the year under review 853 mothers' classes had been held in 85 counties. (See map on p. 61.)

A comparison of the average infant mortality rate for the five-year period of the State's cooperation under the maternity and infancy act with that for a similar period prior to acceptance (exclusive of 1918) shows a reduction of 13.4 per cent for the State as a whole, 15.9 per cent for the urban areas, and 12.6 per cent for the rural areas. A similar comparison for the average maternal mortality rate shows a reduction of 19.5 per cent for the State as a whole, 18.3 per cent for the urban areas, and a slightly larger reduction (23.9 per cent) for the rural areas.

Since the beginning of the State's cooperation under the maternity and infancy act several communities that conduct child-health activities without assistance from the division have increased and extended their activities as a result of the interest developed through the division's work.

## IOWA

### STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of education, division of maternity and infant hygiene, Iowa City.

## Staff:

Director (director of the extension service of the State university serving), 3 physicians (2 part year), 6 nurses (2 part year), 1 dentist, 1 dental hygienist, 1 social worker, 1 vital-statistics clerk, 3 stenographers.

## Activities:

Child-health conferences, 198; infants and preschool children examined, 4,255; defects found, 4,672; children having defects, approximately 4,000. Parents had defects corrected in approximately 50 per cent of the children. These conferences were conducted by the pediatric unit of the staff, consisting of a pediatrician, two nurses, and the social worker. One nurse did advance work; the other nurse and the social worker did follow-up work after the conferences.

## Activities—Continued.

Prenatal conferences, 75; mothers visiting conferences, 3,165. These conferences were conducted by the mothers' health unit of the staff, consisting of a physician and a nurse. Talks and demonstrations were given, but no examinations were made.

Conferences conducted by nurses, no physician present, 99; mothers instructed in prenatal care, 2,113.

Dental conferences, 105; preschool children receiving dental advice, 1,358. These conferences were conducted by the dental unit of the staff, consisting of the dentist, the dental hygienist, and a nurse.

Talks and lectures, 238.

Literature distributed, 53,378 pieces.

Exhibits conducted, 147, at county fairs and at prenatal conferences. The mothers' health unit carried exhibit material that included layettes, obstetrical package, outfit for home delivery, patterns, and literature. Exhibit material was lent 30 times.

Infants born in the State during the year, 44,908; infants under 1 year of age reached by the work of the division, 1,127; preschool children reached, 5,413; expectant mothers reached, 440.

Counties in the State, 99; counties having maternity and infancy work during the year, 49; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 98.

The following organizations cooperated in the division's work: State farm bureau, State federation of women's clubs, State dental society, State tuberculosis association, and the parent-teacher association.

The year's program consisted almost entirely of conferences and of follow-up work. The outstanding achievement of the year was the organization of a State oral-hygiene bureau through cooperation with the State dental society and the State tuberculosis association. The oral-hygiene work done by the division among mothers and preschool children had demonstrated especially the need and value of such a bureau.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

An educational maternity and infancy program in rural areas has been conducted through infant and prenatal conferences and through lectures and conferences with mothers on prenatal and maternity care.

Figures from the United States Bureau of the Census are not available for maternal nor infant death rates until 1924, when the State was admitted to the birth-registration area. There has been a drop in the maternal death rate in rural areas, although the infant death rate has increased (from 55 in 1924 to 59 in 1926, the urban rate increasing from 66 to 72, the rural rate from 50 to 53). In 1924 the maternal death rate for the State as a whole was 59.8 per 10,000 live births. In 1926 the rate was 60.4. However, in the rural areas the rate decreased from 52.2 per 10,000 live births in 1924 to 48.8 in 1926, and it is in the rural areas that the maternity and infancy program has been conducted. The rates for puerperal septicemia and puerperal albuminuria and convulsions (causes which more than any others indicate the care the mother received during pregnancy and confinement) show material decreases in the rural areas. For deaths due to septicemia the rural rate in 1924 was 17.8 for every 10,000 live births, compared with 15.5 in 1926; for deaths due to albuminuria and convulsions the rate dropped from 16.1 in 1924 to 12.1 in 1926.

### KANSAS

#### STAFF AND ACTIVITIES IN 1927

Administrative agency:

State board of health, division of child hygiene, Topeka.

Staff:

Director (physician, 2 months), 2 nurses (1 for 2 months, 1 for 1 month), 2 clerks (1 month), 1 stenographer (2 months).

## Activities:

The act passed by the Kansas Legislature to accept the provisions of the Federal act for the promotion of the welfare and hygiene of maternity and infancy was signed by the governor on March 16, 1927. The funds made available will permit an extension of the activities of the division of child hygiene. Work was begun in May, 1927, the two months remaining before the close of the year under review being devoted mainly to planning and organizing the new work.

Four maternity homes and 31 infant homes were inspected; 1,224 pieces of literature and 224 sets of prenatal letters were distributed; exhibit material was lent 12 times; 6 talks were given; and some new literature for use in child-health conferences was prepared.

The following organizations cooperated in the division's work: American Legion auxiliary, State league of women voters, and the parent-teacher association.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

The State has had a division of child hygiene since 1915 and had cooperated for a time by virtue of the governor's acceptance, cooperation having been discontinued because the first legislature that met after the passage of the act failed to accept its provisions. (See p. 30.) The interest awakened in maternal and child welfare by the early establishment of the division and the assistance rendered from April 1, 1922, to September 22, 1923, during the period of cooperation under the governor's acceptance had a noticeable effect, however, on the interest in maternal and child welfare throughout the State. The action of the 1927 State legislature accepting the provisions of the act has made expansion of the program possible.

## KENTUCKY

### STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, bureau of maternal and child health, Louisville.

## Staff:

Director (physician), 3 physicians (1 part year, 1 part time), 9 nurses (6 part year, 1 part time), 1 nutritionist, 2 clinical assistants (1 for 1 month), 1 vital-statistics clerk, 1 inspector of birth registration (part year), 1 educational instructor (part year, part time), 1 milk inspector (part year), 9 clerks (2 part time), 1 stenographer. Two county nurses were paid for some maternity and infancy work.

## Activities:

Child-health conferences conducted by physicians, 333 (arranged by staff nurses, 279; arranged by the two county nurses who were paid for maternity and infancy work, 54); infants and preschool children registered, 6,204; number examined, 6,179; visits to conferences, 6,408; defects found in children examined at conferences arranged by staff nurses, 10,686; children having defects, 4,950. In addition, county health units and nurses affiliated with the bureau conducted 451 conferences in 27 counties. Prenatal conferences conducted by physicians, 36; expectant mothers registered and examined, 1,063; visits to conferences, 3,037.

New permanent child-health centers, 10 established as a result of the maternity and infancy work. They are supported by State, local, and private funds. All child-health centers in the State cooperate with the bureau and work under its supervision.

Little mothers' classes, 234 organized; girls enrolled and completing course, 4,689; lessons in course, 5. Courses of 6 lectures on child care were given by a staff physician to junior and senior students at the State university, 6 junior colleges, 4 State normal schools, and 2 private schools.

Mothers' classes, 79 organized; mothers enrolled and completing course, 3,147; lessons in course, 4.



## Activities—Continued.

- Midwives' classes, 17 organized; midwives enrolled and completing course, 165; lessons in course, 2. Because of flood conditions in the mountains and the destruction of roads and bridges it was not possible to conduct as many midwife classes as in previous years. However, the midwives were taking a more intelligent interest in their work, having better equipment and reporting more of the births attended.
- Maternity home inspected, 1; inspections made, 4. A detailed study was made of this home. As a result many changes were made in its methods of caring for the mothers and their babies, who are kept together in the home for three months.
- Infant homes inspected, 30; inspections made, 30.
- Demonstrations consisting of child-health conferences, exhibits, and lectures were made at several county fairs.
- The bureau cooperated in a campaign for the state-wide observance of May Day as Child Health Day and in campaigns in two counties for the examination of preschool children and correction of their defects before the children should enter school.
- Talks and lectures, 335.
- Literature prepared: Prenatal letters, diet cards (revised), 2 pamphlets on nutrition.
- Literature distributed, 56,749 pieces. Packages of literature were furnished to hospitals to give to mothers in their obstetrical departments after the fourth day of confinement.
- New names registered for prenatal letters, approximately 1,500; prenatal letters distributed, approximately 2,500 sets.
- Graduate courses for physicians and for nurses were conducted by an obstetrician lent by the United States Children's Bureau. (See p. 129.) A staff nurse assisted in arrangements and in the clinic work.
- Nutrition classes for mothers, 2 with average attendance of 25 and of 150, respectively; lessons in course, 6 for the first class, 9 for the second. Lectures on nutrition of mothers and children were given to 18 other groups and instruction was given to individual mothers also. Nutrition work for preschool children was carried on in 8 communities by home-economics students under the supervision of the nutritionist, and approximately 2,500 children were reached by this work.
- Two health and nursery schools for children between 3 and 5 years of age were conducted for a period of eight weeks in two cities. The children were given a complete health examination before admission, and their parents were instructed as to the best methods of keeping them well. The children were helped to form good health habits, to eat the proper kinds of food, and to rest lying down two hours each day.
- Exhibits conducted, 65, of literature, charts, posters, and other material, at meetings of county medical societies, county health officers, women's clubs, and parent-teacher associations and at teachers' institutes. Exhibit material was lent 10 times.
- Articles prepared for county newspapers and magazines, 60, relating to maternal and infant hygiene.
- Breast feeding was promoted through the talks given and literature distributed.
- Infants born in the State during the year, 64,290. The bureau sends diet cards for the baby and health rules for the nursing mother to parents of all babies whose births are registered in the bureau of vital statistics. In the year under review approximately 60,480 mothers received this literature. Expectant mothers reached by the work of the bureau, 19,412.
- Counties in the State, 120; counties having maternity and infancy work during the year, 86; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 120.
- The staff nurses were detailed for several weeks to work with mothers and children in the flooded areas of the State. They supervised and instructed the mothers in feeding and caring for their children and in caring for themselves during pregnancy. The number of infants and preschool children cared for was estimated to be about 10,000.
- The following organizations cooperated in the bureau's work: State league of women voters, Women's Christian Temperance Union, women's clubs, and parent-teacher associations.

Among the outstanding features of the year's work were the graduate courses in obstetrics for physicians, in which the bureau cooperated, the courses of lectures given at State normal schools, junior colleges, and the State university, and the health and nursery schools conducted for preschool children.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The death rate from causes associated with pregnancy and childbirth has dropped in the State as a whole from 60.7 per 10,000 live births in 1922 to 58.4 in 1926. The rate in urban districts was 96.6 in 1922 and 74.8 in 1926; the average rural rate for the five-year period 1922 to 1926 (55.1) was slightly lower than that for a similar period prior to the State's cooperation under the maternity and infancy act (57.6).

The Louisville City Hospital gave prenatal care during 1923 to 1926 to white mothers to whom 677 babies were born alive and to colored mothers to whom 996 babies were born alive. Maternity and infancy funds were used to assist this work. Two of the white mothers and two of the colored mothers died from causes associated with pregnancy and childbirth; the maternal mortality rate for this group who had received prenatal care was therefore 29.5 per 10,000 live births for white mothers and 20.1 per 10,000 live births for colored mothers. This was strikingly lower than the maternal mortality rate for the city as a whole during this same period, which was 65.2 for white mothers and 142 for colored mothers.

Sixteen of the 677 babies born to the white mothers who received care at the hospital clinic died during the first month of life, and 39 of the 996 born to the colored mothers died. The neonatal death rate for this group was therefore 23.6 per 1,000 live births for the babies of the white mothers and 39.2 per 1,000 live births for the babies of the colored mothers. These rates likewise are considerably lower than the neonatal mortality rate for the city as a whole during this same period, which was 38.2 for babies born to white mothers and 55.1 for babies born to colored mothers.

Since the beginning of the State's cooperation under the maternity and infancy act eight counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

### LOUISIANA

#### STAFF AND ACTIVITIES IN 1927

##### Administrative agency:

State department of health, bureau of child hygiene, New Orleans.

##### Staff:

Director, 2 physicians (1 part time), 8 nurses (6 part year), 2 dentists (1 part year), 1 midwife teacher (nurse), 1 clerk (part time), 1 stenographer. Temporary assistants were employed as needed. Five parish<sup>27</sup> nurses were paid for some maternity and infancy work.

##### Activities:

Child-health conferences conducted by physicians, 210; infants and preschool children registered and examined, 6,571; visits to conferences, 6,821; defects found, 22,784; children having defects, 6,541.

Prenatal conferences conducted by physicians, 16; expectant mothers registered, 88; number examined, 58.

Conferences conducted by nurses, no physician present, 16; some lasted several days; infants and preschool children inspected, 3,170; mothers instructed in prenatal care, 457. These figures include conferences conducted in the flood area.

Dental conferences conducted by dentists, 80; preschool children receiving dental advice, 4,316.

Midwives' classes, 48; midwives enrolled plus those carried over from previous year, 2,520; number completing course, 138; number still on roll, 2,482; lessons in course, 6. The midwives have improved in cleanliness and in the use of aseptic measures. A larger number are reporting births, requesting nitrate of silver solution, and asking to be registered.

Home visits by nurses, 408 (prenatal cases seen, 315; obstetrical cases, 12; infants, 9; preschool children, 72).

<sup>27</sup> In Louisiana the parish is the civil division corresponding to the county in other States.

Activities—Continued.

Community demonstrations, 2, parish-wide, consisting of child-health conferences conducted to show the value of such work.

Group demonstrations, 127. Of these 13 were of child health conference work, at parish fairs; 114 were on some phase of maternal and infant care, at midwives' classes and other group meetings.

Surveys, 2: (1) Of midwives, in 26 parishes. (2) Of birth registration, in 26 parishes.

Campaign, 1, for promotion of birth registration. The work for complete registration of births, which increased greatly after the beginning of maternity and infancy activities, culminated in a state-wide campaign in the year under review, in which workers from the United States Bureau of the Census and from the United States Children's Bureau cooperated.

Talks and lectures, 385.

Literature prepared: Baby Book (revision begun), diet cards.

Literature distributed, 18,531 pieces.

New names registered for prenatal letters, 618; prenatal letters distributed, 618 sets.

Nutrition work was done through individual instruction to mothers and children at conferences, also in camps in the flooded area.

Exhibits conducted, 15; 13 were at the parish fairs at which demonstrations were made; 1 was at the International Trade Exposition (a permanent exhibit in New Orleans); and 1 was in the health car of the State department of health, which toured the State. Exhibit material prepared—charts, posters, graphs. Exhibit material was lent 86 times.

Statistical study, 1, of maternal and infant mortality.

Breast feeding was promoted through talks to mothers at conferences, literature distributed, and instruction given to midwives.

Infants born in the State during the year, 47,527; infants under 1 year of age reached by the work of the bureau, 2,675; preschool children reached, 7,592; expectant mothers reached, 1,065.

Counties in the State, 64; counties having maternity and infancy work during the year, 48; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 60.

The following organizations cooperated in the bureau's work: State tuberculosis and public-health association, State federation of women's clubs, American Red Cross, local medical societies, community clubs and other local organizations, and the parent-teacher association. Their members assisted in planning for conferences and conducting them, brought mothers and children to them, helped to arrange exhibits, and distributed literature.

Among the outstanding features of the year's work were the birth-registration campaign and the emergency work done in May and June in parishes that had been flooded. As the situation demanded immediate public-health work five staff nurses were detailed to the flooded area to carry on maternity and infancy work. They gave instruction in general health and in proper feeding to all mothers encountered. A detailed summary of the activities in which these nurses assisted or worked alone is as follows (such figures as are applicable are included in the foregoing items):

Prenatal and maternity work:	Number
Prenatal cases visited in camp.....	195
Prenatal conferences and clinics held.....	13
Visits to conferences and clinics.....	111
Mothers instructed.....	983
Talks to groups.....	4
Attendance at talks.....	90
Maternity cases attended.....	12
Assisted with layette.....	3
Expectant mothers examined by physician.....	10
<b>Infant and preschool-child work:</b>	
Infants under 2 years of age inspected by nurse.....	1,284
Infants under 2 years of age examined by physician.....	52
Preschool children inspected by nurse.....	1,133
Preschool children examined by physician.....	74
Interviews concerning preschool children.....	49

Infant and preschool-child work—Continued.	Number
Talks to groups.....	9
Attendance at talks.....	99
Mothers instructed.....	42
Preschool children receiving dental care.....	192
<b>Midwife work:</b>	
Midwives interviewed in camps.....	23
Lessons given (in addition to 11 to individuals).....	2
Demonstrations.....	2
Talks to groups.....	2

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

The health educational work in the State has been exceptional. The exhibits shown in the health car operated by the State department of health, which consists of two Pullman cars equipped with laboratory, scientific exhibits, charts, clowns, models, and other material covering many phases of public-health work has much space devoted to infant and child hygiene. These cars have been sent all over the State wherever railroads go and have brought to the rural districts much information not otherwise accessible to such localities.

Registration of births has increased as a result of the state-wide campaign for birth registration in which the workers of the bureau of child hygiene co-operated during a considerable period.<sup>28</sup>

Although figures from the United States Bureau of the Census on mortality rates are not available, the State figures show since the beginning of the cooperation under the maternity and infancy act in 1924 a decline in both maternal and infant mortality rates. The maternal mortality rate per 1,000 live births was 10.3 in 1924, 10.8 in 1925, and 9.4 in 1926. The infant mortality rate per 1,000 live births was 93.6 in 1924, 88.6 in 1925, and 73.8 in 1926.

The work in the flood area gave great opportunity for education in child and maternal care.

Since the beginning of the State's cooperation under the maternity and infancy act the practice of the midwives has become much better. The advance in aseptic measures, cleanliness, and registration of midwives and in registration of births by them is due directly to the work of the bureau of child hygiene.

## MARYLAND

### STAFF AND ACTIVITIES IN 1927

**Administrative agency:**

State department of health, bureau of child hygiene, Baltimore.

**Staff:**

Director (physician), 1 health-education worker (part time), 1 clerk, 2 stenographers. Physicians and dentists were employed as needed to conduct conferences, and temporary assistants were employed as needed. Twenty-two county nurses (two negro) in 16 counties were paid for some maternity and infancy work.

Volunteer assistants—10 physicians, 3 dentists, 75 lay persons.

**Activities:**

Child-health conferences conducted by physicians, 380 (22 for negro children); infants and preschool children registered and examined, 5,579 (white, 4,991; negro, 588); defects found, 7,591; children having defects, 4,058. Parents were known to have had defects corrected in 510 of the children.

Conferences conducted by nurses, no physician present, 32; infants and preschool children inspected, 435; mothers instructed in prenatal care, 26.

Dental conferences conducted by dentists, 55; preschool children receiving dental advice, 490.

New permanent combined prenatal and child-health centers, 2 established.

They are supported by local funds. Almost every county in the State now has one permanent health center or more.

Little mothers' classes, 12 organized; girls enrolled, 245; number completing course, 180; lessons in course, 6.

<sup>28</sup> The State was admitted to the birth-registration area Aug. 4, 1927.



## Activities—Continued.

Mothers' classes, 76 organized; mothers enrolled, 1,223; number completing course, 856; lessons in course, 8.

Midwives' classes, 2; midwives enrolled, 35; number completing course, 12; lessons in course, 8. Nurses are visiting midwives so far as possible and inspecting their bags, and fewer midwives are practicing.

Home visits by nurses, 3,314 (prenatal cases seen, 808; postnatal cases, 149; infants, 1,585; preschool children, 1,379).

Group demonstrations, 30. Of these 26 were at child-health conferences, where mothers were shown proper methods of feeding, bathing, and dressing the baby; 4 were at county fairs, where motion pictures, slides, dental exhibits, and layettes were shown. Children were weighed, measured, and given height and weight tags. Approximately 18,500 persons visited these 4 demonstrations.

The bureau assisted in a survey of crippled children conducted in Baltimore.

Talks and lectures, 93.

Literature prepared: Poster showing intervals at which children should be examined.

Literature distributed, approximately 129,000 pieces.

Graduate courses for physicians: Lectures in pediatrics were given by the director and by members of the pediatric departments of the medical schools of Johns Hopkins University and of the State university, at meetings of county medical societies, at six centers in the State, including several counties. Subjects covered were: Prevention of rickets, syphilis in infancy and childhood, infant feeding and gastrointestinal diseases, tuberculosis and respiratory diseases, and the physician's part in maintaining child health. Lectures on obstetrics were given by a professor of obstetrics from the State university medical school, in 2 counties.

Exhibits conducted, 65. Exhibit material was lent 35 times.

Scientific articles prepared: Pediatric Material, Hazards of Rural Mothers and Infants.

Statistical studies, 6: Infant mortality rates for the State of Maryland in comparison with the United States birth-registration area, 1916-1925; infant mortality rates for the white and negro population in counties of Maryland in comparison with those for Baltimore City, 1916-1925; population, births, infant deaths, infant mortality rates, stillbirths, neonatal deaths, maternal deaths, and maternal mortality rates for the white and negro population for each of the 23 counties, by years, for the period 1922-1926; puerperal septicemia in the 23 counties, 1917-1926; certain defects found in 1,842 children examined May and June, 1926; mortality rates among infants under 1 and 2 years of age from diarrhea and enteritis in the 23 counties and in Baltimore City, 1917-1926; and mortality of infants under 2 years of age, by counties, for the white and negro population, 1923, 1924, 1925.

Breast feeding was promoted by distribution of a diet card that advocated breast feeding.

Infants born in the State during the year, 33,437; infants under 1 year of age reached by the work of the bureau, approximately 18,000; preschool children reached, approximately 11,000; expectant mothers reached, approximately 8,000. (These figures do not cover Baltimore, which had a city bureau of child hygiene.) The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 23; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 23.

As a result of the bureau's work orthopedic conferences were conducted in one county, and child-health conferences were conducted in various parts of the State. These were given supervisory assistance by the bureau.

Each of two communities employed a negro public-health nurse, whom the bureau paid for some maternity and infancy work.

The following organizations cooperated in the bureau's work: State federation of women's clubs, State league of women voters, and fraternal and other organizations.

Among the outstanding features of the year's work were the more rigid supervision of midwives, the making of urinalyses for expectant mothers in the State laboratories, the employing of negro public-health nurses by two communities, and the conferences held for negro infants and preschool children.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Maryland's bureau of child hygiene was created in 1922, the State having accepted the provisions of the maternity and infancy act in that year. The work of the bureau has been confined to the rural areas, every county having had some maternity and infancy work. The program has been developed through publication and distribution of literature pertaining to the care of the mother and baby; through child-health conferences; through supervision of midwives; through extension of public-health nursing throughout the State in cooperation with the bureau of child hygiene (in 1920 there were 20 public-health nurses, in 1926 there were 45); through graduate lectures and demonstrations in obstetrics; through visits of nurses to newborn babies; and through other phases of educational work.

In 1922 the maternal mortality rate in the rural areas of the State was 58.6; in 1926 it was 42.4. For the State as a whole the rate declined from 59.4 in 1922 to 57.8 in 1926. In the rural areas the average rate from 1922 to 1926 was 50.6 as compared with 68.5 during the five-year period before the State's cooperation under the maternity and infancy act (exclusive of 1918), the decrease during the period of cooperation being 26.1 per cent. For the State as a whole the decrease was 17.9 per cent.

The infant mortality rate for the State as a whole declined from 94.1 in 1922 to 87.1 in 1926; for white infants the rate declined from 81.4 to 74.3, and for colored infants it declined from 147.3 to 137. A comparison of the infant mortality rates during the period of cooperation (1922-1926) with a similar period prior to acceptance of the maternity and infancy act (1917-1921, exclusive of 1918) shows a reduction of 14.3 per cent for the State, 14.9 per cent for white infants, and 14.8 per cent for colored infants. The rates for the rural areas show the same general trend.

Care of the mother during pregnancy and confinement tends to lower the death rates for infants who die from so-called natal and prenatal causes; that is, premature birth, injuries at birth, etc. In the State as a whole the death rates from the natal and prenatal group of causes dropped from 42.1 in 1922 to 39.6 in 1926; for white infants the rate declined from 39.3 to 36.1 and for colored infants, from 54 to 53.2. For the counties, excluding Baltimore City, the decline was more marked for the colored infants—from 58.1 to 49.7; for the white infants the rate dropped from 37.8 to 36.1. These deaths from natal and prenatal causes occur mostly in the first month of life, and improvement in the care of the mother is further indicated by the reduction in the mortality rates for infants dying in the first month of life. In the State as a whole the rate for white infants dying under 1 month of age dropped from 38.9 in 1922 to 35.5 in 1926; for colored infants, from 56.3 in 1922 to 53.8 in 1926. In the counties (that is, excluding Baltimore City), the decrease in the rates for colored infants was even more marked during the same period—from 65.7 to 55.9; for white infants the decrease was from 39 to 37.4.

Excluding the "early infancy" group of deaths, most of which occur in the first month of life, diarrhea and enteritis probably cause more deaths in the first year of life than any other cause, and reduction in the rates from these causes would indicate better understanding of feeding problems and better care of milk. In 1922 the mortality rate from these causes was 21.6 for every 1,000 live births; in 1926 it was 14.9. For white infants the rate declined from 18.6 to 12.4, and for colored infants it declined from 34.3 to 24.7. In comparison with the previous five-year period (excluding 1918) a marked reduction is evident: From 1917 to 1921, inclusive, the average rate was 27.1 for the State, 24.6 for white infants, and 37.8 for colored infants; for the period of the State's cooperation under the maternity and infancy act the average rate was 17.7 for the State, 15.3 for white infants, and 27.7 for colored infants. In the counties (exclusive of Baltimore City), there was also a reduction in the death rate from diarrhea and enteritis for both white and colored infants, although it was slightly less marked than in the State as a whole.

MICHIGAN

STAFF AND ACTIVITIES IN 1927

Administrative agency:

State department of health, bureau of child hygiene, Lansing.

Staff:

Director (physician), 2 physicians, 12 nurses (1 half year), 1 midwife supervisor (nurse), 2 vital-statistics clerks, 1 clerk (part time), 3 stenographers.



TYPES OF WORK DONE BY THE BUREAU OF CHILD HYGIENE AND PUBLIC-HEALTH NURSING, MICHIGAN DEPARTMENT OF HEALTH, 1922-1927

Activities:

Child-health conferences conducted by physicians, 141, in 21 counties; infants and preschool children registered and examined, 2,711; defects found, 6,010; children having defects, 2,470 (not including 241 children for whom defects were not tabulated).

Prenatal conferences conducted by physicians, 65; expectant mothers registered, 91; number examined, 40.

New permanent combined prenatal and child-health centers, 4 established as a result of the maternity and infancy work. They are supported by local funds.

New permanent prenatal center—1 established with the assistance of the bureau. It is supported by local funds.

## Activities—Continued.

Little mothers' classes, 291 organized; girls enrolled and completing course, 6,379; lessons in course, 8.

Mothers' classes, 89 organized; mothers enrolled and completing course, 1,036; 35 midwives also took the course; lessons in course, 8.

Home visits by nurses, 9,311 (prenatal cases seen, 1,554; postnatal cases, 645; infants and preschool children, 3,529).

Community demonstrations, 3, in 3 counties, on prenatal nursing care, to show its value. Each demonstration was planned for a one-year period. The work in 1 county was begun in January, 1926; in the other 2 it was begun during the year under review. The following figures cover the period January 1, 1926, to June 30, 1927, for the 3 counties: Expectant mothers under supervision, 645; visits made to them, 2,593 (before delivery, 1,660; after delivery, 933). Of these mothers 409 were under 30 years of age; hence they were reached early in their child-bearing period and will have for future pregnancies the continued benefit of the instruction received. At the close of the year under review 440 women had been delivered, and there had been two maternal deaths among them. The maternal mortality rate for mothers under supervision in the 3 counties during the period of supervision was 49 per 10,000 live births. The maternal mortality rate for the four-year period before this demonstration (1921 to 1924) was 94 per 10,000 live births in one of these counties, 110 in another, and 176 in the third.

Group demonstrations—66, on various phases of maternal and infant care. Surveys, 3: (1) Of the prevalence of goiter among children, in 4 counties; (2) of midwives, state-wide; (3) of maternal mortality, in 23 counties. It was found that 47 of the 113 deaths studied were the result of septicemia and that 28 of these followed abortions.

Campaign, 1, for promotion of breast feeding, in 10 counties. Figures for these 10 counties and 7 counties completed the previous year are as follows: Of the 2,545 babies whose mothers were visited in the 17 counties 188 had never been breast fed, and 217 had been breast fed less than one month.

Talks and lectures, 135.

Literature distributed, 336,369 pieces.

New names registered for prenatal letters, 2,690; prenatal letters distributed, 3,233 sets.

Exhibits conducted, 5, at the State fair and at meetings of State and local organizations. An exhibit on sup baths was prepared. Exhibit material was lent 6 times.

Infants born in the State during the year, 107,869; infants under 1 year of age reached through conferences, home visits, and other contacts, 8,046; number reached through literature, 99,398; preschool children reached, 5,341; expectant mothers reached, 7,072. The bureau sent literature on infant hygiene to parents of all infants whose births were registered in the State bureau of vital statistics.

Counties in the State, 83; counties having maternity and infancy work during the year, 68; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 83.

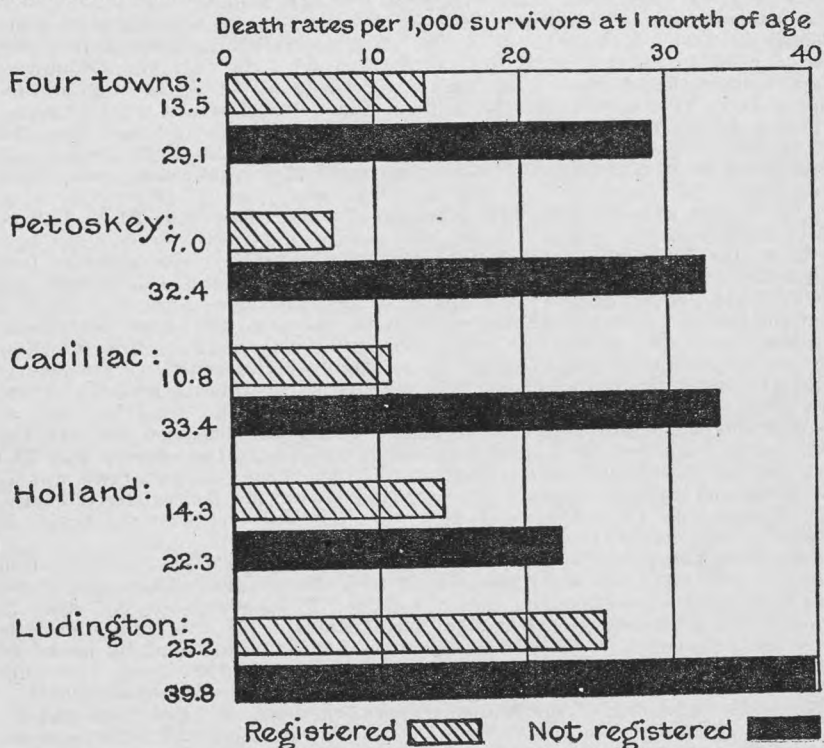
The director served as chairman of the child-hygiene section of the parent-teacher association and assisted in a campaign for the examination of preschool children and correction of their defects before the children should enter school in the fall. Approximately 1,000 letters were sent to presidents of local parent-teacher associations, and more than 300 schools were pledged to carry out the campaign. The director also served on the State committee for the observance of May Day as Child Health Day, and reports were received of its observance throughout 37 counties and in 63 local communities.

As a result of the bureau's work local agencies carried on many activities for maternal, infant, and preschool-child welfare. A number of new child-health centers were established. The bureau received reports from 66 centers, at which 2,610 conferences were held. The centers reported 27,394 visits by infants and preschool children and 2,026 visits by expectant mothers. The nurses in charge of these centers made 31,464 home visits. Local nurses organized 129 little mothers' classes, in which 2,908 girls were enrolled.



The following organizations cooperated in the bureau's work: State agricultural college, State grange, State child-study association, State nurses' association, State league of women voters, State federation of women's clubs, American Association of University Women, Daughters of the American Revolution, Women's Christian Temperance Union, Legislative Council of Michigan Women, Detroit Federation of Women's Clubs, fraternal organizations, and the parent-teacher association.

The outstanding feature of the year's work was the initiation of a state-wide maternal-mortality study in cooperation with the State medical society.



COMPARISON OF MORTALITY AMONG INFANTS REGISTERED AND INFANTS NOT REGISTERED AT HEALTH CENTERS IN FOUR TOWNS IN MICHIGAN FROM DATE OF ORGANIZATION OF CENTERS TO JUNE 30, 1927

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

The major features of the State program during the period of cooperation under the maternity and infancy act have been establishment of permanent health centers, instruction in the importance of prenatal care, instruction of mothers of newborn infants in hygiene and proper care of the baby, classes in high schools and elementary schools in infant care, demonstration itinerant conferences, campaigns to promote breast feeding and prenatal care, and improvement in midwifery service. (See map on p. 71.)

The average infant mortality rate in Michigan for the five-year period prior to cooperation under the maternity and infancy act (1917-1921, exclusive of 1918) was 86.9. For the five-year period of the State's cooperation under the maternity and infancy act (1922-1926) the average infant mortality rate dropped to 75.9—a decrease of 11 deaths in every 1,000 live births.

There was also a material decrease in the death rate among mothers from causes connected with pregnancy and confinement. During the period 1917 to 1921 (exclusive of 1918) the average maternal mortality rate was 78.3 for every 10,000 live births; from 1922 to 1926 the average rate was 66.9. The

decline is particularly striking in the rural areas, the rate falling from 73.9 for the period prior to passage of the maternity and infancy act to 55.5 during the period of cooperation under the act.

In 1921 the maternal mortality rate for the State as a whole was 68.5 for every 10,000 live births; in 1926 it was 67.2. The urban rate increased from 71.1 in 1921 to 77.4 in 1926. The rural rate declined from 65.5 in 1921 to 51.6 in 1926—a saving of 14 mothers for every 10,000 live births. In 1921 the infant mortality rate for the State was 78.6 for every 1,000 live births; in 1926 it was 77.2. The urban rate in 1921 was 81.2 and 81.8 in 1926. The rural rate, on the contrary, had fallen from 75.5 in 1921 to 70.1 in 1926.

A demonstration of maternal and infant nursing service was begun in Alger County in 1923. A comparison of the infant mortality rates for a four-year period prior to the demonstration (1919–1922) with the four years following the demonstration shows a reduction from 121 to 100.2—a saving of 21 infants among every 1,000 born alive. In Calhoun County (exclusive of Battle Creek), where a similar demonstration was made in 1923–24, the rate declined from 77.4 during the period preceding the demonstration (1919–1922) to 53 during and after the demonstration (1923–1926)—a saving of 24 infants among every 1,000 born alive.

The number of permanent health centers has increased from 31 in 1921 to 75 in 1926.

An evaluation of the results of health-center care has been made in four towns having been permanent health centers—Petoskey, Cadillac, Ludington, and Holland—by comparing mortality among babies cared for at the centers with that for babies 1 month old and over living in the same towns but not attending health centers. Babies are seldom brought to centers in the first weeks of life—weeks during which mortality is invariably high; and rates for health-center babies are therefore comparable with those for infants 1 month of age and over. In every instance the mortality among babies receiving care at centers was much lower than that among babies not so cared for. In the four towns combined the rate for babies registered at the centers was 13.5 and that for babies not registered was 29.1. The lowest in any town was 7, for registered babies; whereas 22.3 was the lowest for nonregistered babies. The highest rate for registered babies was 25.2; for nonregistered babies it was 39.8. (See chart on p. 73.)

Education and supervision of midwives have included classes for instruction and visits to midwives for inspection of their homes and equipment. These measures have been directed toward raising the standards of midwives in practice and toward eliminating unqualified midwives. In this connection it is interesting to note that in 1921 there were 6,632 births attended by midwives (6.9 per cent of the total births reported), whereas in 1926 there were only 3,315 births delivered by midwives (3.4 per cent of the total births reported).

Since the beginning of the State's cooperation under the maternity and infancy act all except 9 of the 83 counties in the State have had little mothers' classes conducted by nurses employed by the bureau of child hygiene. Still other classes were conducted by nurses not paid by the bureau but receiving equipment and advice from the bureau. In these classes girls are taught the essentials of infant hygiene.

Since the beginning of cooperation three counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

## MINNESOTA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State department of health, division of child hygiene, Minneapolis.

#### Staff:

Director (physician), 9 nurses (2 part year, 1 part time), 3 vital-statistics clerks, 2 clerks, 4 stenographers. A physician was employed as needed to conduct conferences. Five county nurses in one county were paid for some maternity and infancy work.

#### Activities:

Health conferences for Indian children conducted by physicians, 4; infants and preschool children registered and examined, 69.

Prenatal conferences conducted by physicians, 13; expectant mothers registered and examined, 95.

## Activities—Continued.

Little mothers' class, 1 organized; girls enrolled, 35; number completing course, 30; lessons in course, 8. Assistance was given to county, community, and school nurses who taught little mothers' classes. The division issued 228 certificates to girls completing the course during the year. One of the nurses gave to the students in the State teachers' colleges 25 lectures and demonstrations on methods and subject matter for little mothers' classes. The purpose was to prepare rural teachers to give courses on infant care in small schools. Total attendance, 552.

Mothers' classes, 77 organized; mothers enrolled, 1,193; number completing course, 151; lessons in course, 8.

Home visits by nurses, 4,334. Two staff nurses working among the Indians made 2,991 visits (prenatal cases seen, 142; obstetrical cases, 36; postnatal cases, 140; infants, 423; preschool children, 355). The county nurses who were paid for maternity and infancy work made visits to 35 prenatal cases, 3 obstetrical cases, 18 postnatal cases, 96 infants, and 169 preschool children.

Group demonstrations, 676, at county fairs, prenatal conferences, mothers' classes, and other group meetings.

Campaign, 1, for immunization against diphtheria, initiated and conducted by the two nurses working among the Indians. Clinics were arranged at which children were given inoculations by physicians from the Bureau of Indian Affairs. Immunizations made, 950.

Talks and lectures, 133.

Literature prepared: The Building Years (leaflet).

Literature distributed, 156,982 pieces.

New names registered for prenatal letters, 1,133; prenatal letters distributed, 1,830 sets.

Correspondence course: Mothers registered plus those carried over from previous year, 725; number completing course, 552; lessons in course, 15.

Exhibits conducted, 30, at county fairs, the State fair, State sanitary conference, and meeting of State federation of women's clubs. Exhibit material prepared: Posters on milk, with standards. Exhibit material was lent 19 times.

Expectant mothers reached through conferences, home visits, and letters, 1,370.

Counties in the State, 87; counties having maternity and infancy work during the year, 75; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 87.

The following organizations cooperated in the division's work: State medical association, State federation of women's clubs, Women's Christian Temperance Union, and parent-teacher associations.

The outstanding feature of the year's work was the organization of mothers' classes.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Minnesota began to cooperate under the maternity and infancy act in 1922. During the period 1917 to 1921 (exclusive of 1918) the average infant mortality rate was 64.8, whereas it was 58.8 during the period of cooperation (1922-1926). Hence the rate for the period of cooperation was 9.3 per cent lower than that of the previous period. For the urban areas the rate dropped from 67.9 to 59.1, and for rural areas it dropped from 63.2 to 58.6. There was a decrease also in the maternal mortality rate, which declined from 64.6 for the period preceding cooperation under the act to 53.9 during the period of cooperation—a saving of 11 mothers for every 10,000 live births. In the urban districts the rate declined from 74.5 to 64.9; the decline in the rural areas was even more marked, the average rate dropping from 59.5 to 47.

Since January 1, 1924, prenatal conferences have been conducted in the rural districts by prominent obstetricians from the University of Minnesota. The important features of these conferences are that the attending physician is present at the examination of his patients and that the case is discussed with him. A talk on prenatal care is given before the assembled physicians, and a talk on the hygiene and care of pregnancy is given to the group of expectant

mothers. More than 70 conferences of this character have been conducted, and more than 800 mothers have been reached. In addition many physicians have had the advantage of graduate instruction in obstetrics and prenatal care.

Since the beginning of the State's cooperation under the maternity and infancy act two counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

## MISSISSIPPI

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Jackson.

#### Staff:

Acting director (State health officer serving part time), 1 physician, 3 nurses, 1 dental hygienist (part time), 1 midwife supervisor (part time), 1 vital-statistics clerk (part year), 1 accountant (part time), 2 stenographers (1 part time), 1 typist (part time). Seven county nurses were paid for some maternity and infancy work.

#### Activities:

Child-health conferences conducted by physicians, 282; infants and preschool children registered and examined, 3,097; defects found, 3,052; children having defects, 2,045.

Dental conferences conducted by dentists, 68; expectant mothers receiving dental advice, 1,418; preschool children receiving dental advice, 7,000. Many local dentists volunteered their services for these conferences.

Hygiene classes, 65 organized; girls enrolled, 1,500; number completing course, 1,162; lessons in course, 12. Instruction relating to prenatal care was given.

Midwives' classes, 255 organized. Thirty-five hundred midwives were under supervision, and approximately 1,000 were given an eight-lesson course of instruction. A questionnaire was sent to all physicians of the State asking whether they had noticed improvements in certain phases of the midwives' work; 75 per cent or more replied that the midwives had improved in personal cleanliness, in care of their equipment, in the care of infants, in calling physicians in abnormal cases, and in reporting births; 69 per cent replied that the midwives had improved in their care of the mothers.

Home visits by nurses, 3,699 (to prenatal cases, 756; obstetrical cases, 304; infants, 1,341; preschool children, 1,298).

Campaigns, 2; (1) For promotion of birth registration. (2) For improvement in the practice of midwives. Both were state-wide.

Talks and lectures, 3,697.

Literature prepared: Hygiene outline.

Literature distributed, approximately 10,000 pieces.

Nutrition work was done through individual instruction and lectures to groups.

Exhibits conducted, 20. Exhibit material was lent 100 times.

Scientific articles prepared: The Preschool Child, Midwifery.

Breast feeding was promoted through the literature distributed and the talks given.

Infants born in the State during the year, approximately 50,000; infants under 1 year of age reached by the work of the bureau, approximately 12,000; preschool children reached, approximately 19,000; expectant mothers reached, approximately 4,000. The bureau sends literature on infant hygiene to parents of infants whose births were registered in the State bureau of vital statistics.

Counties in the State, 82; counties having maternity and infancy work during the year, 82.

In addition to their activities reported in the foregoing paragraphs the county nurses carried on maternity and infancy work as follows: Holding conferences with individual mothers and midwives in the office of the county health department, visiting midwives in their homes, inspecting midwives' equipment, securing Wassermann tests and urinalyses, obtaining vaccination against smallpox and inoculation against typhoid fever for preschool children, and assisting physicians in administering toxin-antitoxin and in making Schick tests for preschool children.



## Activities—Continued.

The following organizations cooperated in the bureau's work: American Red Cross, State Development Board, and the parent-teacher association.

Among the outstanding features of the year's work were the hygiene classes and the work with midwives.

## SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

A bureau of child welfare and public-health nursing was organized in 1920, the State was admitted to the United States birth-registration area in 1921, and cooperation under the maternity and infancy act was begun in 1922.

Instruction and supervision of midwives began in 1921 and has been a major feature of the State maternity and infancy program. In 1921 there were 4,209 midwives registered. Between 1921 and 1926 there were added to the list approximately 1,000 midwives. The number registered in 1926 was 3,500; many who were unfitted for the work have ceased to practice. The physicians of the State have expressed the opinion, through replies to a questionnaire sent to them, that the practice of the midwives and the type of service they render are better.

Since the beginning of the State's cooperation under the maternity and infancy act five counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

## MISSOURI

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, division of child hygiene, Jefferson City.

## Staff:

Director (physician), 3 nurses (2 part year), 1 nutrition worker (1 month), 1 birth-registration visitor and child health club organizer (part time, part year), 1 multigraph operator (part time, part year), 1 stenographer (part time, part year). Fourteen county nurses were paid for some maternity and infancy work.

## Activities:

Child-health conferences conducted by physicians, 201; infants and preschool children registered and examined, 2,376; visits to conferences, 3,504; defects found, 3,545; children having defects, 1,792.

Conferences conducted by nurses, no physician present, 298; infants and preschool children inspected, 6,356; expectant mothers instructed in prenatal care, 311 (including some mothers instructed in the office).

Dental conferences, 29, conducted by dentists who volunteered their services; preschool children receiving dental advice, 1,790.

New permanent child-health centers, 4 established. They are supported by Federal, State, county, and city funds.

Little mothers' classes, 121 organized; girls enrolled, 1,478; number completing course, 185; lessons in course, 12.

Mothers' classes, 129 organized; mothers enrolled, 2,325; number completing course, 58; lessons in course, 10. Many mothers attending classes did not work for a certificate; therefore no report was made as to their completion of the course.

Home visits by nurses, 3,728 (prenatal cases seen, 327; obstetrical cases, 68; postnatal cases, 160; infants and preschool children, 2,068).

Community demonstrations, 18, lasting 3 days to 2 weeks, including physical examination of children, health exhibits, showing of films and slides, and public addresses.

Surveys, 2: (1) Of midwives, in several counties; (2) of birth registration, conducted under the direction of the division by the State federation of women's clubs, in each county having a women's club.

Campaigns, 4: (1) For promotion of birth registration; (2) for prevention of blindness in infants; (3) for prevention of diphtheria. A dodger on toxin-antitoxin treatment was sent to the parents of all infants whose births were registered in the State bureau of vital statistics, also to all physicians practicing in the State, many of whom requested copies to

## Activities—Continued.

distribute to their patients. As a part of the May Day (Child Health Day) celebration, for which the director of the division was chairman, immunization against diphtheria and vaccination against smallpox were urged for all children before they should enter school. As a result of the campaign 10,169 immunizations and 7,147 vaccinations were reported to the division. (4) For interesting parents in having defects of children corrected through a "six-point child" project. Children free from defects in vision, hearing, posture, throat, and teeth and having normal weight were awarded buttons by the division. Nurses reported a gain of 50 to 100 per cent over the previous year in the number of corrections made as a result of the interest aroused. In connection with its summer round-up the parent-teacher association advocated that every child become a "six-pointer" before entering school. Prizes were offered to the three counties having the most "six-point" children in attendance at the State fair, and the names of 9,900 "six-point" children were reported to the State board of health by July 1, 1927. Pictures of these children were to be displayed at the State fair.

Talks and lectures, 555.

Literature prepared: Protect Your Child Against Diphtheria, Six-Point Children.

Literature distributed, 534,848 pieces.

New names registered for prenatal letters, 820; prenatal letters distributed, 812 sets.

Nutrition work was done for one month through class instruction to mothers and preschool children. Four lessons were given to each group. Exhibits conducted, 54, of charts, proper food and clothing for babies, baby pen, and other material, at county fairs, the State fair, and various local and State meetings. Exhibit material was lent 25 times.

Breast feeding was promoted through lecture work (including radio talks).

Infants born in the State during the year, 66,611; infants under 1 year of age reached by the work of the division, 66,611; preschool children reached, 9,800; expectant mothers reached, 1,365. The last two figures are exclusive of the number reached by literature. The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 114; counties having maternity and infancy work during the year, 36; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 111.

The following organizations cooperated in the division's work: State department of education, State university, State league of women voters, State federation of women's clubs, State dental association, State tuberculosis association, State public-health association, State nurses' association, State conference of social work, State street and highway safety council, women's auxiliary of the State medical association, American Red Cross, Women's Christian Temperance Union, and the parent-teacher association.

The outstanding feature of the year's work was the development of the "six-point child" project to promote the physical examination of preschool children and to interest their parents in having defects corrected before the children should enter school.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State department of health assisted by the staff of the division of child hygiene has conducted a continuous campaign for education on birth registration for several years and was under test by the United States Bureau of the Census at the close of the fiscal year 1927.<sup>20</sup>

The importance of securing correction of defects found in preschool children examined at conferences has been emphasized by the development of the "six-point child" project, in which the State gave prizes to communities having the largest number of preschool children meeting the six points before entering school—that is, having teeth, throat, hearing, vision, posture, and weight normal (or corrected) in accordance with a minimum standard.

<sup>20</sup> The State was admitted to the United States birth-registration area Sept. 8, 1927.

As the State was not in the birth-registration area, figures from the United States Bureau of the Census are not available. Figures furnished by the State show a decline in infant mortality rates from 83 in 1920 to 69 in 1925.

## MONTANA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, child-welfare division, Helena.

#### Staff:

Director (physician, paid in part from maternity and infancy funds), 2 nurses (1 of them part year), 1 laboratory technician (part time), 1 vital-statistics clerk, 1 clerk (part time), 1 bookkeeper (part time). Extra nurses were employed for short periods, and physicians were paid nominal fees for conducting conferences. Eight county nurses were paid for some maternity and infancy work in 11 counties. A nurse paid by a private organization gave part time to maternity and infancy work under the supervision of the director.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians, 2; expectant mothers registered and examined, 10; infants and preschool children registered and examined, 13.

Child-health conferences conducted by physicians, 104; infants and preschool children registered and examined, 1,627; children having defects, approximately 1,300. Parents had defects corrected in approximately 35 per cent of the children.

Prenatal conferences conducted by physicians, 2; expectant mothers registered and examined, 5.

Conferences conducted by nurses, no physician present, 389; mothers instructed in prenatal care, 53; infants and preschool children inspected, 3,417; visits to conferences, 3,545 (by mothers, 128; by children, 3,417).

New permanent child-health center, 1 established as a result of the maternity and infancy work. It is supported by Federal, State, county, and private funds.

Little mothers' classes, 14 organized; girls enrolled and completing course, 214; lessons in course, 12.

Home visits by nurses, 2,456 (prenatal cases seen, 189; infants, 858; preschool children, 1,378).

Community demonstration, 1, of a model child-health center conducted during June with the assistance of the home-economics department of the State university, groups of women from a women's club, and the parent-teacher association. Child-health conferences were held daily during the first and last weeks of the demonstration. An exhibit had been arranged, and proper foods were demonstrated daily.

Group demonstrations, 45; 4 were on maternity package and layette, 41 on methods of making sick children comfortable with material already in the home. Frequently in rural districts a day was given to a meeting to which entire families came; lectures were given to parents, and inspection was made of children.

Campaigns, 3: (1) For birth registration. A series of articles on birth registration was published in the newspapers, and a short story explaining the need of birth registration was published in two local magazines. Leaflets on the subject were inclosed in letters mailed from the division's office. Personal inquiries as to whether births had been registered were made of the parents of all infants and preschool children with whom the nurses came in contact. (2) For observance of May Day as Child Health Day. The director of the division was May Day chairman for the State, and efforts were made to stimulate local communities to arrange May Day activities and to attract the attention of the public to the preschool child. (3) For promotion of a preschool drive. The director of the division served as chairman for the parent-teacher association's preschool drive. Efforts were made to have parents take their children who would enter school in the fall to their family physicians for examination and for correction of defects found.

Talks and lectures, 770.

Literature prepared: Bulletins on prevention of contagious diseases, diet cards (revised), biennial report.

Literature distributed, 134,529 pieces.

New names registered for prenatal letters, 437; prenatal letters distributed, 437 sets.

Exhibits conducted, 11. Exhibit material prepared, charts and posters. Films were lent 45 times, lantern slides 15 times, other exhibit material once.

Statistical study: Comparison of the infant and maternal mortality rates of the white and Indian population for 1926. The infant mortality rate for the white population was 69.1; for the Indian population, 185.4. The maternal mortality rate for the white population was 8.2; for the Indian population, 6.6. (Both infant and maternal mortality rates are based on deaths per 1,000 live births.)

Breast feeding was promoted by sending literature on the subject to all physicians in the State.

Infants born in the State during the year, approximately 10,000; infants under 1 year of age reached by the work of the division, approximately 7,000; preschool children reached, approximately 25,000; expectant mothers reached, 791. The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 56; counties having maternity and infancy work during the year, 45; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 56.

Under the general plan of field work the State was divided into three districts with a nurse in charge of each. These nurses carried on a general maternity and infancy program in the counties having no county nurses; and the eight county nurses paid in part from maternity and infancy funds worked in 11 counties.

The nurses cooperated wherever possible in a state-wide campaign against diphtheria initiated by the State board of health; they assisted in the immunization of 1,046 preschool children.

A loan-library service was maintained for the use of rural communities and of public-health nurses throughout the State.

The laboratory technician examined 14,792 specimens.

The following organizations cooperated in the division's work: State federation of women's clubs, State tuberculosis association, State league of women voters, American Red Cross, and the parent-teacher association.

The outstanding features of the year's work were the organization of child-health conferences and the securing of financial cooperation in the county nursing services supported in part by maternity and infancy funds.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State's program has been educational, carried on through the conducting of health conferences, teaching of classes, and distribution of literature. The great area of the State and its sparse settlement, the difficulties of travel and of communication due to its topography, and the climatic conditions at some seasons have prevented the division's direct contacts with some sections from being frequent. Part of the plan has been to develop permanent maternity and infancy work by paying part of a county nurse's salary in return for maternity and infancy work on her part. Eleven counties have been subsidized in this way, and nine are continuing the work. Two counties have not maintained the service. In one the county money was used to subsidize a physician, as there was none in the whole county; the other, though not able to maintain a county nurse, has a weekly child-health conference conducted by the county health officer.

### NEBRASKA

#### STAFF AND ACTIVITIES IN 1927

##### Administrative agency:

State department of public welfare, bureau of health, division of child hygiene, Lincoln.

##### Staff:

Director (nurse), 2 nurses, 1 maternity and infant home inspector, 1 vital-statistics clerk, 1 stenographer. Temporary assistants were employed as needed.



## Activities:

Child-health conferences conducted by physicians, 56; infants and pre-school children registered, 2,056; number examined, 2,049; defects found, 4,264; children having defects, 2,010. Local physicians and dentists and some pediatricians assisted with the examinations. Parents had defects corrected in many of the children.

Little mothers' classes, 2 organized; girls enrolled and completing course, 79; lessons in course, 3. The staff nurses also gave lectures and demonstrations to high-school girls on child care and the prevention of communicable diseases.

Mothers' classes, 21 organized; mothers completing course, 103; number having one or two lessons, 1,604; lessons in course, 4. A mimeographed lesson outline was used, and bulletins on child care and child management were distributed. An obstetrician in one town was so impressed with the value of the lessons given to two groups of women that he urged all the young mothers and expectant mothers among his rural patients to come into town to attend the course.

Home visits by nurses, 2,436 (to prenatal cases, 97; postnatal cases, 10; infants, 880; preschool children, 1,449).

Maternity homes inspected, 75; inspections made, 75.

Infant homes inspected, 17; inspections made, 17.

Group demonstrations, 38, on bathing, dressing, lifting, and carrying the baby, giving sun baths, and bandaging varicose veins.

Campaign, 1, for the examination of preschool children and correction of their defects before the children should enter school. This work was done in cooperation with parent-teacher associations and other organizations.

Talks and lectures, 55, at meetings of the State league of women voters and of county, intercounty, and district federations of women's clubs, to rural clubs, and to senior nurses in training. As a result several local groups planned to have classes in maternal and infant hygiene in the coming fall and winter.

Literature prepared: Résumé of State work, infant-hygiene lessons.

Literature distributed, 53,543 pieces. A list of health books was sent to all teachers in the State.

New names registered for prenatal letters, 130; prenatal letters distributed, 457 sets.

Nutrition work was done through individual instruction to mothers at conferences and classes and through letters.

Exhibits conducted, 4, in connection with talks and lectures. Exhibit material was lent once.

Breast feeding was promoted by emphasis in mothers' classes and in home visits and by distribution of literature on the subject.

Infants born in the State during the year, 28,287; infants under 1 year of age reached by the work of the division, 27,400; preschool children reached, 675; expectant mothers reached, 704. A return postcard containing a list of publications was sent to the parents of all infants whose births were registered in the State bureau of vital statistics.

Counties in the State, 93; counties having maternity and infancy work during the year, 59; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 73.

The following organizations cooperated in the division's work: State federation of women's clubs, State league of women voters, State tuberculosis association, American Legion auxiliary, Women's Christian Temperance Union, and the parent-teacher association.

Among the outstanding features of the year's work were the classes for women and girls, in which prenatal and infant hygiene, nutrition, and prevention and control of communicable diseases were stressed.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

A marked result of the cooperation under the maternity and infancy act is the increase in the interest of local groups in maternal and child welfare. Many localities are conducting child-health conferences with local physicians making the examinations. Some of these conferences have been repeated at fairly regular intervals, assuming in this respect some of the characteristics of permanent centers.

There is an increasing interest in and demand for class instruction in child care for both mothers and girls.

## NEVADA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, child-welfare division, Reno.

#### Staff:

Director. Seven county nurses were paid for some maternity and infancy work.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians, 6; expectant mothers registered, 11; infants and preschool children registered and examined, 93.

Conferences conducted by nurses, no physician present, 356; infants and preschool children inspected, 149; mothers instructed in prenatal care, 68; visits to conferences, 964 (by children, 852; by mothers, 112).

Little mothers' classes, 4 organized; girls enrolled, 89; lessons in course, 12. Mothers' classes, 2 organized; mothers enrolled, 31; lessons in course, 12.

Home visits by nurses, 9,180 (prenatal cases seen, 201; obstetrical cases, 18; infants, 1,192; preschool children, 1,985).

Talks and lectures, 107.

Literature distributed, 2,547 pieces.

Prenatal letters distributed, 1,000 sets.

Nutrition work was done through instruction to individual mothers at conferences and in visits to them in their homes.

Counties in the State, 17; counties having maternity and infancy work during the year, 17.

The State public-health association cooperated in the work of the division, contributing \$25 per month to the salary of each of the staff nurses.

### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

As the State is not in the United States birth and death registration areas, results of the maternity and infancy work can not be measured in terms of mortality rates. Legislation is needed to enact a model law before the State can meet the registration requirements of the United States Bureau of the Census.

A public health nursing service covering the State has been established. The State is divided into nursing districts, and a nurse is assigned to each district. The great size of the State, with a relatively small population scattered at great distances, obviously offers many obstacles to an ideal public health nursing service; but much good has resulted and is resulting from the contacts of the public-health nurses, infrequent though they necessarily are.

Since the beginning of the State's cooperation under the maternity and infancy act three counties have assumed part of the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

## NEW HAMPSHIRE

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, division of maternity, infancy, and child hygiene, Concord.

#### Staff:

Director (nurse, not paid from maternity and infancy funds), 7 nurses (3 part year), 2 stenographers. Physicians were employed as needed to conduct conferences.

Volunteer assistants, 137 permanent committees of lay persons.

#### Activities:

Child-health conferences conducted by physicians, 139; infants and preschool children registered and examined, 4,259; defects found, 3,858; children having defects, 2,637. Parents had defects corrected in 921 of the children. An encouraging increase in the corrections of defects was

## Activities—Continued.

a result of the conferences. Assistance in conference arrangements, in follow-up visits, and in obtaining corrections was given by the permanent lay committees.

Little mothers' classes, 41 organized; girls enrolled, 409; number completing course, 198; lessons in course, 1 to 4.

Mothers' classes, 15 organized; mothers enrolled, 291; number completing course, 282; lessons in course, 3 to 4.

Home visits by nurses, 12,498 (prenatal cases seen, 455; obstetrical cases, 19; postnatal cases, 415; infants, 3,250; preschool children, 6,990). After visits to prenatal cases cards were sent to the respective family physicians advising them of their patients' condition.

Maternity homes inspected, 8; inspections made, 8.

Infant homes inspected, 12; inspections made, 18.

Group demonstrations, 332, at conferences, classes, and other group meetings.

Campaign, 1, for immunization against diphtheria, in 8 counties. Clinics were held in 17 towns, at which 2,424 children were given toxin-anti-toxin. This was followed later by Schick tests. Information as to date, place, and final result was tabulated on each child's physical-examination card, which was to be given to the school authorities when the child should enter school.

Talks and lectures, 163.

Literature distributed, 190,955 pieces.

Exhibits conducted, 205. At each conference and class a complete or partial exhibit on some phase of maternal and infant hygiene work was displayed. Exhibits prepared: For fairs and for meetings of various organizations. Exhibit material was lent 310 times.

Breast feeding was promoted by sending a booklet on the subject to every prenatal case reported to the division and by instruction given by the nurses in home visits.

Expectant mothers reached by the work of the division, 1,127.

The division sent literature on infant hygiene to parents of all infants whose births were registered in the State bureau of vital statistics; additional literature was sent every three months until the children were 12 months old.

Counties in the State, 10; counties having maternity and infancy work during the year, 10.

The division acted in an advisory capacity for public-health nurses in the State and gave supervision to a few district nursing associations. The director of the division served as State chairman for the observance of May Day as Child Health Day and assisted local chairmen in planning and carrying out suitable programs.

The following organizations cooperated in the division's work: State federation of women's clubs, State tuberculosis association, American Red Cross, and parent-teacher associations. Local physicians and nurses gave generous assistance at conferences and in follow-up work. Women's organizations formed committees to promote the work, and local organizations furnished buildings in which to hold conferences, also desk room for nurses.

The outstanding achievements of the year were the organization of lay workers into permanent committees throughout the State and the large number of conferences held and of corrections obtained as a result of their assistance.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State's maternity and infancy program has been developed through child-health conferences, through home visits, and through such educational features as mothers' classes and little mothers' classes. One of the main features of the program has been the intensive prenatal work carried on in certain localities. The results of this work demonstrate the value of prenatal supervision and care.

In the State as a whole there was very little change in the average maternal mortality rates for the five-year period prior to cooperation under the maternity and infancy act (1917-1921, exclusive of 1918) and the period of cooperation

(1922-1926). In localities where an intensive prenatal program was carried on the supervision given the mother during pregnancy and confinement is reflected in the lower maternal mortality rates, in the stillbirth rates, and in the neonatal death rates.

A comparison of maternal death rates, stillbirth rates, and death rates of infants dying in the first month of life among the supervised and nonsupervised groups (based on figures supplied by the State) has been made for four counties that have had a prenatal program over a period of years (five years for two counties, four years for two counties). In these four counties there were 487 live births to mothers receiving prenatal care. Two of these mothers died from causes associated with pregnancy and childbirth—a maternal death rate of 4.1 per 1,000 live births. In the nonsupervised group there were 6,012 live births. Fifty-one of the mothers in this group died from causes associated with pregnancy and childbirth—a maternal death rate of 8.5 per 1,000 live births. In the supervised group there were 10 stillbirths—a rate of 2.1 per 100 live births—compared with 193 stillbirths—a rate of 3.2—in the nonsupervised group.

That care of the mother during pregnancy and confinement affects the chances of survival of the baby during the first few weeks of life is an accepted fact. In the group of babies born alive whose mothers were supervised during the prenatal period there were 6 deaths in the first month of life—a neonatal rate of 12.3 per 1,000 live births—whereas in the nonsupervised group there were 282 such deaths—a rate of 46.9.

In other words, if the same rates had prevailed in the supervised group as did prevail in the nonsupervised group there would have been 4 deaths of mothers instead of 2; 16 stillborn babies instead of 10; and 23 babies dying in the first month of life instead of 6.

The average infant mortality rate for the State as a whole was 13.5 per cent lower during the period of cooperation (1922-1926) than during the preceding period (1917-1921, exclusive of 1918). In the urban areas the decline was 16.7 per cent and in the rural areas it was 9.2 per cent.

## NEW JERSEY

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State department of health, bureau of child hygiene, Trenton.

#### Staff:

Consultant (physician, not paid from maternity and infancy funds), 12 nurses, 5 midwife supervisors and maternity and infant boarding home inspectors (1 part time), 2 clerks (1 part time), 3 stenographers.

Volunteer assistants—120 physicians.

#### Activities:

Child-health conferences conducted by physicians, 736; infants and pre-school children registered and examined, 623; visits to conferences, 6,234; defects found, 1,142; children having defects, 402. Parents had defects corrected in 327 of the children.

Prenatal conferences conducted by physicians—36; expectant mothers registered, 71; number examined, 65; visits to conferences, 182.

Conferences conducted by nurses, no physician present, 240; infants and preschool children inspected, 913; visits to conferences, 9,956.

New permanent child-health centers, 12 established. They are supported by Federal and State funds.

New permanent prenatal center, 1 established, and plans made for a second.

It was decided to establish a center in an industrial community and another in a rural community. The former was opened on June 15. The conferences will be conducted by the local physicians, who will rotate in their service. A uniform record card will be used. This work has been planned for a five-year period, during which the centers will serve a second purpose as training stations for the nurses under the supervision of the bureau or in its employ.

Little mothers' classes, 20 organized; girls enrolled, 250; number completing course, 238; lessons in course, 10.

Mothers' classes, 5 organized; mothers enrolled, 73; number completing course, 70; lessons in course, 12.



## Activities—Continued.

Midwives' monthly organization meetings, 92 among the 10 county associations in the State, with a total attendance of 1,069. Among the special subjects considered at these meetings were: What a midwife should know about venereal disease; danger signs of the prenatal period; and how the midwives can cooperate with local official agencies. Licensed midwives under supervision, 406, to whom 3,549 supervisory visits were made; unlicensed midwives remaining, 6. The fourth annual State conference of midwives was held in May with an attendance of about 200. The percentage of births attended by midwives has decreased from 42.2 in 1919 to 20.3 in 1926. A study made during the year showed that 37 per cent of the midwives had attended foreign schools of midwifery, and 63 per cent had attended American schools. The courses were six weeks to three years long; 20 per cent of the midwives trained in foreign countries had had a three-year course, 54 per cent had studied more than nine months, and 26 per cent had studied less than nine months. Of those trained in American schools only 1 per cent had studied three years or an equivalent period, 78 per cent had studied nine months, and 21 per cent had studied less than nine months.

Home visits by nurses, 15,314 (prenatal cases seen, 548; infants, 2,379; preschool children, 3,115).

Maternity homes inspected, 28; inspections made, 148. All maternal and infant deaths and stillbirths that occurred in these homes were thoroughly investigated.

The uniform system for caring for the unmarried mother and her baby established by the hospitals and the State department of health was continued during the year. One of the chief objects of this system is to prevent the early separation of mother and baby and to insure that the baby will be breast fed.

Infant homes inspected, 249; inspections made, 745.

Community demonstrations, 12, in connection with starting a child-health center in each community to show the value of health supervision of infants and preschool children.

Campaign, 1, for immunization against diphtheria. This was conducted as part of the May Day program. Preschool children immunized, 704. Talks and lectures, 211.

Literature prepared: Chart showing essentials in development and nutrition of children from birth to 5 years of age.

Literature distributed, 55,877 pieces.

Nutrition work was done through lectures on nutrition given in conjunction with the home-economics department of the State agricultural college to midwives at their monthly meetings.

Exhibits conducted, 5, consisting of equipment for a child-health center. Breast feeding was stressed in all the bureau's activities.

Courses in child hygiene consisting of one lecture a week for 10 weeks were given to the senior students in the five State normal schools.

Work with the girls in the continuation schools of three districts of the State was continued. The girls were taught the principles of child hygiene.

A course of 12 lessons and demonstrations was conducted at the State reformatory for women. This covered the essentials of prenatal care and the care of the baby.

Infants born in the State during the year, 72,386; infants under 1 year of age reached by the work of the bureau, 20,841; preschool children reached, 12,261; expectant mothers reached, 4,655. About one-third of these were reached by the work financed by maternity and infancy funds. Counties in the State, 21; counties having maternity and infancy work during the year, 21.

The following organizations cooperated in the bureau's work: State department of institutions and agencies, State agricultural college, State league of women voters, State tuberculosis association, Visiting Nurse Association, Children's Aid Society, National Organization for the Prevention of Blindness, federated women's clubs, several church and fraternal organizations, and the parent-teacher association.

Among the outstanding features of the year's work were the establishment of the prenatal center and training station for nurses and the extension of child-hygiene courses to all the normal schools in the State.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

Features of the State's program during the period have been regular supervision of infants and preschool children at child-health conferences; stressing breast feeding; supervision and licensing of midwives; inspection and supervision of infant and maternity homes; and development of arrangements for the care of mothers of illegitimate infants to the end that mothers and babies may be kept together.

As New Jersey was not admitted to the United States birth-registration area until 1921, no figures are available for comparing infant and maternal mortality for a period prior to the State's cooperation under the maternity and infancy act with a similar period since cooperation.

The State accepted the provisions of the maternity and infancy act in 1922. In that year the infant mortality rate for the State as a whole was 78.6 per 1,000 live births. In 1926 the rate was 70.1; this was 10.8 per cent lower than that of 1922. The rates for both the urban and rural areas have been reduced, the former from 79.3 in 1922 to 69.3 in 1926, the latter from 77.1 to 71.8. The death rates from diarrhea and enteritis—causes closely associated with improper feeding—show a material decrease since 1922. In that year for every 1,000 babies born alive there was a death rate of 14.6 in the first year of life from these causes; in 1926 the rate was 9.7.

The death rate from causes associated with childbearing has also been lowered during the period 1922 to 1926. In 1922 the rate was 64.1 per 10,000 live births. In 1926 it was 57.6; this was 10.1 per cent lower. The rate for urban areas was 8.5 per cent lower (70.9 in 1922 and 64.9 in 1926). The rate for rural areas was 14.9 per cent lower (48.3 in 1922 compared with 41.1 in 1926).

Better care of the mother during pregnancy and confinement is also reflected in the decrease of deaths of babies from so-called natal and prenatal causes, premature birth, injuries at birth, etc. In 1922 the death rate per 1,000 live births from these causes in the first year of life was 35.3; in 1926 it was 33.6.

### NEW MEXICO

#### STAFF AND ACTIVITIES IN 1927

**Administrative agency:**

State department of public welfare, bureau of public health, division of child hygiene and public-health nursing, Santa Fe.

**Staff:**

Director (nurse, part time), 2 nurses, 1 vital-statistics clerk, 1 bookkeeper (part time), 1 stenographer (part time). Seven county nurses were paid for some maternity and infancy work.

Volunteer assistants—72 physicians, 1 dentist, 32 nurses, 662 lay persons.

**Activities:**

Conferences conducted by nurses, physician present at some, 171; infants and preschool children inspected, 859; mothers instructed in prenatal care, 623; visits to conferences by children, 1,660.

New permanent combined prenatal and child-health centers, 2 established as a result of the maternity and infancy work. They are supported by Federal, State, and county funds.

New permanent child-health center, 1 established as a result of the maternity and infancy work. It is supported by a local organization.

New permanent prenatal center, 1 established as a result of the maternity and infancy work. It is supported by Federal, State, and county funds.

Little mothers' classes, 44; girls enrolled, 931; number completing course, 732; lessons in course, 10.

Mothers' classes, 26; mothers enrolled plus those carried over from previous year, 182; number completing course, 138; lessons in course, 8.

Midwives' classes, 21 meetings held by one nurse. Most of the work with midwives was done through visits to their homes, in which instruction was given in cleanliness, the use of a prophylactic in the eyes of the newborn, the making out of birth and death certificates, and the necessity of calling a physician in complicated cases.

Home visits by nurses, 10,322 (prenatal cases seen, 498; obstetrical cases, 49; postnatal cases, 1,042; infants and preschool children, 4,342; visits to midwives, 590).

## Activities—Continued.

Community demonstrations, 6, of maternity and infancy work for 3 to 4 months in each of 6 counties, including instruction of midwives, mothers' classes, little mothers' classes, home visits, promotion of birth and death registration, and lectures before local groups.

Group demonstrations, 282, at conferences, classes, and group meetings, on various phases of maternal and infant care.

Surveys, 3: (1) Of hospitals; (2) of midwives; (3) of birth registration.

Campaigns, 2: (1) For better registration of births and deaths, in 3 counties and 14 communities; (2) for stimulation of interest in maternity and infancy work, in several counties.

Talks and lectures, 314.

Literature prepared: Instructions to Mothers (revised), in Spanish and English.

Literature distributed, approximately 25,000 pieces.

Nutrition work was done through individual instruction to mothers in regard to proper combinations of food for infants and for preschool children and the preparation of formulas according to physicians' instructions.

Exhibits conducted, 34, including model layette, bassinet, home-made baby pen, baby's bath tray, delivery bed, home-made abdominal supporter, and T binder. Exhibit material was lent 3 times.

As the State is not in the birth-registration area, special work was done for promoting birth registration. This included obtaining publicity in local newspapers, registering unregistered births discovered through child-health conferences or in home visits, getting information for birth certificates from baptismal records, and showing midwives and parents how to make out birth certificates for births not attended by physicians.

Breast feeding was emphasized in talks and through distribution of literature at club meetings, conferences, and home visits. Proper diet for maintaining lactation, method of expressing breast milk, and the need for rest periods were covered in the instruction.

Infants born in the State during the year, 10,715; infants and preschool children reached by the work of the division, approximately 15,000; expectant mothers reached, 587. The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 31; counties having maternity and infancy work during the year, 14; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 27.

In a community in which a staff nurse organized the work a local club carried on monthly weighing and measuring of preschool children.

The two field nurses on the staff and the county nurses who were paid for maternity and infancy work traveled 76,319 miles in covering their territory during the year. Their activities included health conferences, home visits, and demonstrations, obtaining immunizations against diphtheria, typhoid fever, and smallpox and other prophylactic treatments, preparing articles on health for local papers, and registering unregistered births and deaths.

The following organizations cooperated in the division's work: State bureau of child welfare, State public-health association, State federation of women's clubs, State league of women voters, Congress of Mothers, and parent-teacher associations.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State is not in the United States birth and death registration areas, but a continuous campaign of education on the importance of registration of births and of deaths has been in progress for several years of the period of cooperation, and improvement in registration has been observed.

Public-health work has been increased through the use of maternity and infancy funds. The payment of county nurses' salaries by matching county funds with State and Federal funds has made possible in seven counties a public health nursing service that could not be maintained otherwise.

Instruction of the Mexican midwives has been a feature of the program, and the practice of the midwives since the beginning of the maternity and infancy work has been much better.

A greater number of expectant mothers have sought advice and literature; teachers have shown more desire for health education; parents have reported that their children who have had instruction in little mothers' classes insist that the younger children in the family be fed and dressed and form other health habits in accordance with the nurses' teaching; and local physicians in communities in which maternity and infancy work has been done report an apparent reduction in maternal and infant mortality, attributing this to the instruction the mothers have received in the care of themselves and their babies.

## NEW YORK

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State department of health, division of maternity, infancy, and child hygiene, Albany.

## Staff:

Director (not paid from maternity and infancy funds), 5 physicians (1 part year), 58 nurses (36 part time), 1 dental hygienist, 1 nutritionist, 2 midwife supervisors and maternity and infant home inspectors, 1 vital-statistics clerk (part year), 1 accountant, 1 advance agent for child-health conferences, 2 clerks, 3 stenographers, and 1 chauffeur. Two hundred and nine physicians throughout the State and nine county nurses in four counties were paid for some maternity and infancy work.

## Activities:

Child-health conferences conducted by physicians, 1,012; infants and pre-school children registered, 6,742; number examined, 5,826; visits to conferences, 15,006; defects found, 11,324; children having defects, 5,201. (Figures on defects are incomplete.)

Prenatal conferences conducted by physicians, 1,480; expectant mothers registered, 4,860; number examined, 3,002 (figures incomplete); visits to conferences, 22,080.

Conferences conducted by nurses, no physician present, 974; visits to conferences, 7,513 (by expectant mothers, 2,091; by children, 5,422).

Dental conferences conducted by the dental hygienist in connection with child-health conferences, 198; children examined, 2,624; number found in need of dental attention, 1,242.

Dental conferences conducted by dentists, 141, in 2 towns in connection with centers receiving Federal and State support; preschool children receiving dental advice, 1,312.

New permanent combined prenatal and child-health centers, 2 established as a result of the maternity and infancy work. They are supported by local funds except for prenatal work in one center, which is conducted by the division's prenatal unit.

New permanent child-health centers, 10 established as a result of the maternity and infancy work. They are supported by local funds.

New permanent prenatal centers, 8 established as a result of the maternity and infancy work. They are supported by local funds except for assistance given by the division's prenatal unit in conducting examinations in 3 of the centers.

Little mothers' classes, many, conducted as part of the routine at child-health centers (no record of number receiving instruction), also by nurses throughout the State not paid from maternity and infancy funds, who used the outline prepared by the division, adapting it to local needs. Certificates for those who completed the course were sent upon request to 580 girls. Little fathers' classes were conducted in two communities by local nurses.

Mothers' classes, 52 organized, with 8 to 30 mothers in each class; number completing course, 370; lessons in course, 5. One nurse gave lectures on mothers' class subjects at 41 meetings of parent-teacher associations in 2 counties and 1 city.

Midwives' meetings, 10, of groups for instruction by staff members; visits made to midwives in their homes, 304.

Home visits by nurses, 73,748.

Maternity homes inspected, 122; inspections made, 122.

Infant homes inspected, 75; inspections made, 75.



## Activities—Continued.

Community demonstrations, 10: (1) Of prenatal nursing work, in 3 communities. (2) Of a maternity nursing program, in 1 county (continued from previous year). (3) Of a maternity and infancy nursing program, in 6 communities. One of these includes the operation of a child-health center in Fulton (Oswego County). This demonstration is used as a teaching center for nurses on the division's staff and for other public-health nurses. Newly appointed nurses are sent to this demonstration and have an opportunity to see the handling of such problems as they will meet in their own communities, the procedure followed at conferences and in home visits, and the methods of recording and reporting work.

Group demonstrations, 3,249, of various phases of maternal and infant care.

Surveys, 4: (1) Of maternity homes. (2) Of boarding homes for children. (3) Of cases of ophthalmia neonatorum. (4) Of preschool children in an Indian reservation in cooperation with the State bureau of education.

Campaign, 1, for promotion of breast feeding, in 3 towns (continued from previous year).

Cooperation was given to a state-wide campaign for immunization against diphtheria conducted by the State department of health and local departments of health, State department of education, State medical society, State Charities Aid Association of New York, and an insurance company.

Talks and lectures, 214.

Literature prepared: The Sixth-Year Molar and the Baby Teeth, Making Teeth for Baby and Keeping Mother's Teeth, 3 leaflets on foods, report of the division for 1926.

Literature distributed, 376,916 pieces.

Graduate courses for nurses, 7, in maternity hygiene; nurses enrolled, 136; number completing course, 104.

Graduate courses for physicians, 10 (7 in pediatrics and 3 in obstetrics).

At the request of county medical societies, specialists in these subjects who serve as part-time consultants to the division were sent to the various counties to conduct courses for local physicians. The usual course of lectures in obstetrics included the following: Pathology of pregnancy, prenatal care and management of normal labor; pathology of labor; postpartum care. The course in pediatrics included lectures on periodic health examinations and preventive pediatrics; feeding problems in infancy; malnutrition in childhood; heart disease in childhood; acute infectious diseases; tuberculosis in childhood.

Nutrition work was done for groups as follows: Courses of 4 lectures each for mothers, 3; courses of 4 lectures each for nurses, 3; single lectures, 29 (to nurses, 11; to lay groups, 16; to physicians, 1; by radio, 1). Lectures and demonstrations, 15 (for lay groups, 3; at county fairs, 10; to home-economics teachers, 1; to student nurses, 1).

Exhibits conducted, 188, including store-window displays, posters, food models, layettes, baby trays, and exhibits on nutrition. Exhibits prepared, screens depicting family health conferences, model midwife bag, sun-babies model, nursery model, and nutrition exhibits. Films were lent 111 times, layettes, trays, and other material 118 times.

Statistical studies, 2: Of breast feeding, in 1 county; of puerperal deaths (in progress).

Breast feeding was emphasized in all the activities of the division. Plans were made for beginning a breast-feeding campaign in 1 county at the close of the year under review.

Infants born in the State during the year, 223,827; infants under 1 year of age reached by the work of the division, 11,921; preschool children reached, 12,499; expectant mothers reached, 13,377. The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics and literature on prenatal care to brides when marriage certificates are filed.

Counties in the State, 62; counties having maternity and infancy work during the year, 57. New York City, comprising 5 counties, has its own maternity and infancy staff, paid in part from maternity and infancy funds.

## Activities—Continued.

The following organizations cooperated in the division's work: New York State Charities Aid Association, State league of women voters, State commission for the blind, Home Bureau, women's clubs, and the parent-teacher association.

The outstanding achievement of the year's work was the increase in the child-health conferences called "Type C consultations." These are conducted in counties twice yearly on a county-wide basis under the auspices of the county medical society, the physicians who make the examinations being appointed by the society and paid from maternity and infancy funds.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

In addition to a general State program of education in maternal and infant care, including child-health conferences, nutrition work, graduate courses for nurses and physicians, development of health centers, and prenatal work, certain localities and counties in the State have had more intensive programs. These included breast-feeding campaigns and surveys, demonstrations in prenatal care, and special nursing demonstrations especially directed toward the training of nurses in maternity and infancy work.

New York accepted the provisions of the maternity and infancy act in 1923 and has been in the United States birth-registration area since the establishment of the area in 1915.

In 1922, the year prior to the State's cooperation under the act, the infant mortality rate for the State was 77 per 1,000 live births. The rate declined to 67.6 in 1925 but rose to 70.5 in 1926. The urban and rural rates had the same general downward trend, as is shown in the following table:

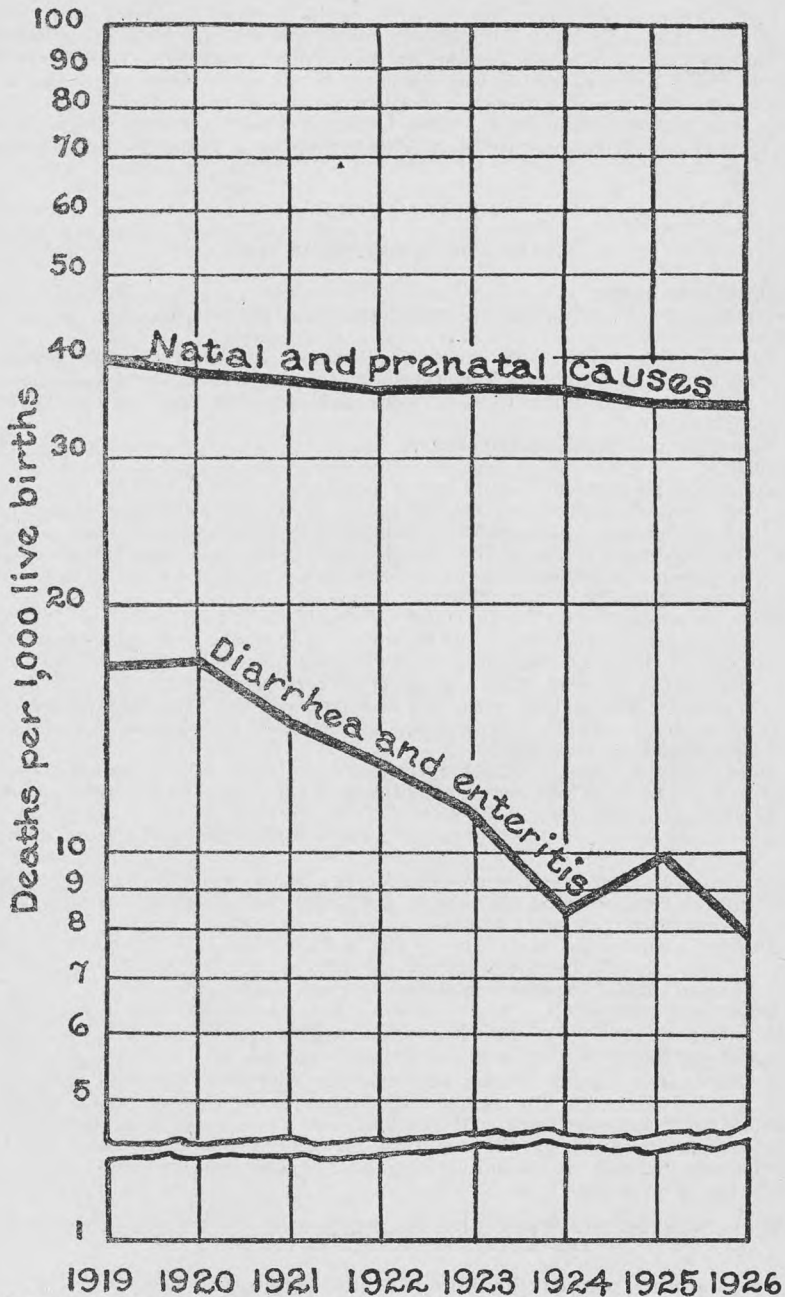
Year	Infant mortality rate per 1,000 live births		
	State	Urban	Rural
1922.....	77.0	78.3	71.7
1923.....	72.1	71.2	75.7
1924.....	69.2	69.6	67.3
1925.....	67.6	67.9	66.1
1926.....	70.5	70.4	71.2

A comparison of the average rates during the four years of cooperation under the act (1923-1926) with the four previous years (1919-1922) shows a decrease of 13.4 per cent for the State as a whole, 14.7 per cent for urban areas, and 6.9 per cent for rural areas.

The State's maternal death rate in 1922 was 60.2 per 10,000 live births. In 1926 the rate was 56.5. The rate for urban areas was 62.2 in 1922 and 59.1 in 1926; for rural areas it was 51.7 in 1922 and 44.9 in 1926. The difference between the average rate for the period of cooperation and that for the four-year period preceding cooperation was considerably greater in the rural areas than in the urban areas, the average rate for the period of cooperation being 20.5 per cent lower than that for the preceding period for the rural areas, whereas in the urban areas it was 6.3 per cent lower. For the State as a whole it was 8.7 per cent lower.

The maternal death rates from puerperal albuminuria and convulsions per 10,000 live births varied from 13.2 in 1922 to 11 in 1926. The average rate for the four years preceding the operation of the maternity and infancy act was 14.5 as compared with 11.9 during the State's cooperation under the act (1923-1926).

Death of the baby from diarrhea and enteritis in the first year of life is closely related to his feeding; and instruction of the mother in proper feeding and her faithfulness in carrying out these instructions are reflected in a lower death rate from these causes. The death rates from diarrhea and enteritis in New York have shown a decline since 1921. The decrease in the rate between 1923 and 1924 (23.9 per cent) was the largest in several years. In 1925, when there was an increase in deaths from diarrhea and enteritis throughout the



1919 1920 1921 1922 1923 1924 1925 1926  
 INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR PER 1,000 LIVE BIRTHS)  
 FROM SPECIFIED CAUSES, NEW YORK, 1919-1926

892°—28—7

country, the rate from these diseases was slightly higher than that of 1924 but not so high as in any year immediately preceding. The 1926 rate indicated that the mortality from diarrhea and enteritis again resumed its downward trend, the rate for that year (8.1) being less than half the rate for 1920 (17.2). It is apparent that much has been accomplished in reducing mortality from diarrhea and enteritis. Some reduction was indicated in mortality from natal and prenatal causes, the rate in 1926 being 10.4 per cent lower than that of 1919. The outstanding characteristic of the rates from natal and prenatal causes is the lack of variation from year to year, though there is a slight downward trend (see chart on p. 91).

## NORTH CAROLINA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, bureau of maternity and infancy, Raleigh.

#### Staff:

Director (physician, part time), 1 physician, 5 nurses (1 part year), 1 clerk, 1 stenographer. Twenty county nurses who devoted full time to maternity and infancy work were paid in part from maternity and infancy funds.

Volunteer assistants, 25 physicians.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians, 386; expectant mothers registered and examined, 723; infants and preschool children registered and examined, 3,048; visits to conferences, 4,662 (by expectant mothers, 723; by children, 3,939). A complete record of the number of children having defects was not kept; parents had defects corrected in 521 of the children.

New permanent child-health center, 1 established as a result of the maternity and infancy work. It is supported by State and county funds.

Midwives' classes, 5 organized; midwives enrolled plus those carried over from previous year, 1,333; number completing course, 1,333; lessons in course, 6. The midwife situation has improved since the beginning of the maternity and infancy work, and the number of midwives has diminished approximately one-fourth.

Home visits by nurses, 32,041 (prenatal cases seen, 6,676; postnatal cases, 2,078; infants, 9,782; preschool children, 2,822; visits to midwives, 1,098).

Literature distributed, 82,391 pieces.

New names registered for prenatal letters, 5,459; prenatal letters distributed, 6,500 sets.

Special nutrition work was done in two counties; 100 undernourished infants were selected for this purpose, and their feeding was supervised in detail by the county nurses.

Infants born in the State during the year, 82,459; infants under 1 year of age reached by the work of the bureau, 15,752; preschool children reached, 2,993; expectant mothers reached, 8,346.

Counties in the State, 100; counties having maternity and infancy work during the year, 31; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 46.

An outstanding feature of the bureau's work was the financial assistance given by 20 counties in the support of 20 nurses who devoted full time to maternity and infancy work. More than half the salary and expenses of these nurses was paid by the counties. A general maternity and infancy program was carried on, including child-health conferences, home visits, and supervision of midwives.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

North Carolina entered the United States birth-registration area in 1917 and accepted the provisions of the maternity and infancy act in 1922. During the period of cooperation under the act (1922-1926) the average infant mortality rate was 80.8. During a similar period prior to the operation of the act (1917-1921, exclusive of 1918) the average rate was 85.5. The same relative differences are shown for both white and colored infants, the rate



for white infants being 69.4 during the period of cooperation and 74.1 for the period prior to cooperation; the rate for colored infants was 105.9 compared with 111.7. Greater average declines appear for the urban than for the rural areas for both white and colored infants, the white rate being 12 per cent lower in the second period than in the first in urban areas and 6.3 per cent lower in rural areas. The rate for colored infants was 9 per cent lower in urban areas and 7.7 per cent lower in rural areas.

The maternal mortality rates show practically the same differences in urban and rural areas. During the period of cooperation the average urban rate was 8.3 per cent lower, the white rate 10 per cent lower, and the colored rate 4.7 per cent lower than during the period prior to cooperation. In the rural areas the average rate was 8.4 per cent lower, the white rate 10.4 per cent lower, and the colored rate 6.4 per cent lower.

## NORTH DAKOTA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State department of public health, division of child hygiene and public-health nursing.

#### Staff:

Director (physician), 1 physician (part year), 4 nurses (1 part year, 2 part time), 1 stenographer.

#### Activities:

Child-health conferences conducted by physicians, 208; infants and preschool children registered and examined, 5,312; defects found, 7,993; children having defects, 4,261.

Home visits by nurses, 2,791 (prenatal cases seen, 182; obstetrical case, 1; infants, 941; preschool children, 1,667).

Surveys, 2: (1) Of birth registration, in 1 town; (2) of preschool children, in 1 town.

Campaign, 1, for better registration of births, in a town in which the high infant mortality rate was believed to be due to incomplete reporting of births. The chief local organizations helped in the campaign.

Talks and lectures, 11.

Literature distributed, 17,945 pieces.

Statistical study, 1, of maternal deaths in 1926.

Breast feeding was emphasized in the talks with mothers at all the child-health conferences.

Infants under 1 year of age reached by the work of the division, 10,635; preschool children reached, 4,296; expectant mothers reached, 57. The division sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 53; counties having maternity and infancy work during the year, 25; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 40.

The following organizations cooperated in the division's work: State federation of women's clubs, American Red Cross, Home Makers' Club, and the parent-teacher association. Their members did the organization work for the child-health conferences and assisted at the conferences.

Among the outstanding features of the year's work were the increase in demands from local communities for child-health conferences and the increase in requests for literature on maternal and infant hygiene.

### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

As the State was not admitted to the birth-registration area until 1924 figures from the United States Bureau of the Census are not available for the whole period of cooperation under the maternity and infancy act. However, for the period for which they are available the maternal mortality rates indicate a downward trend.

The funds for maternity and infancy work are small in proportion to the geographical extent of the State, and the demand for conferences exceeds the ability of the staff to meet them. The chief result of the maternity and infancy work has been the growing interest of the people in the care of mothers and children.

## OHIO

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State department of health, division of child hygiene, Columbus.

## Staff:

Director (physician),<sup>30</sup> 5 nurses (1 part time), 1 health lecturer, 1 maternity and infant home inspector (nurse), 1 vital-statistics clerk, 1 financial clerk (part time), 1 publicity writer (part time), 1 stenographer, 2 motion-picture operators (part year, 1 part time). Fifteen physicians were employed as needed to conduct child-health conferences. Nine county nurses in eight counties and one city nurse were paid for full-time maternity and infancy work.

## Activities:

Child-health conferences conducted by physicians, 76; infants and preschool children registered and examined, 3,580. One copy of the findings was given to the parents, another mailed to the family physician.

New permanent child-health centers, 18 established. They are supported by city boards or private organizations. Usually a nurse conducted a conference every two weeks in each of these, the number of conference days depending upon the community. Mothers brought their children to be weighed, and the nurse discussed health problems with them. During the year 21 such centers were in operation; they were open 164 times, and 2,600 visits were made to them. Pediatricians employed by the division conducted child-health conferences occasionally in these centers in order to stress the importance of periodic physical examinations by the family physician.

Little mothers' classes, 112 organized; girls enrolled, 2,074; number completing course, 2,002; lessons in course, 12.

Home visits by nurses, 19,146 (prenatal cases seen, 877; postnatal cases, 25; infants, 3,069; preschool children, 2,386).

Maternity homes inspected, 215; inspections made, 215.

Campaign, 1, for the observance of May Day as Child Health Day.

Talks and lectures, 444, including 140 in connection with the showing of health films in rural communities.

Literature prepared: Health Builders' League Book (revised) for use in little mothers' classes.

Literature distributed, approximately 105,000 pieces.

Exhibits conducted, 30, at county fairs and women's club meetings, of model layette, baby's bed, and articles necessary for the baby's bath.

Films were shown in connection with a demonstration by a nurse on the care of the baby at 10 of the child-health conferences.

Breast feeding was emphasized in all prenatal instruction given.

The division gave supervisory assistance to local organizations doing maternity and infancy work.

Infants born in the State during the year, 121,767; infants under 1 year of age reached by the work of the division, 13,171; preschool children reached, 11,884.

Counties in the State, 88; counties having maternity and infancy work during the year, 65; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 77.

Much maternity and infancy work that can not be reported in figures has been done by 47 full-time county health units that cooperate with the State health department and receive both advisory and supervisory service from it.

The following organizations cooperated in the division's work: State league of women voters, Child Conservation League, American Red Cross, various civic organizations, and parent-teacher associations.

Among the outstanding features of the year's work were the child-health conferences for preschool children and the classes for girls.

<sup>30</sup> Resigned Jan. 1, 1927. After that date the work of the division was directed by the chief of the division of hygiene and the chief of the division of nursing.

SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT

The State has a decentralized program, maternity and infancy work having been done in 77 of the 88 counties during the period of cooperation under the maternity and infancy act. Full-time county health units, though working to a great degree independently, cooperate with the State health department and receive both advisory and supervisory service from this department. Much of the maternity and infancy work is done by 47 full-time county health departments. Rural public health nursing service has been established in 65 of the 88 counties in the State. This service ranges from one nurse in a county to a staff of eight nurses. There are 95 city and village nursing services. A generalized program is carried on; child hygiene and particularly maternal and infant hygiene are stressed. A summary of visits from 85 services in the State shows that more than 50 per cent were related to child hygiene, as follows: To prenatal cases, 5.4 per cent; to maternity cases, 8.9 per cent; to infants, 22.2 per cent; to preschool children, 15.6 per cent; to school children, 9.5 per cent; to orthopedic cases, 2.4 per cent; to communicable-disease cases, 15.4 per cent; to tuberculosis contacts, 19.8 per cent.

This work, supported by State, county, and municipal, as well as maternity and infancy funds, is stimulated everywhere through the operation of the maternity and infancy act.

Ohio was admitted to the United States birth-registration area in 1917 and began cooperating under the provisions of the maternity and infancy act in 1922 (having accepted its provisions in December, 1921). In 1921, just before the operation of the act, the State maternal mortality rate was 72.2. In 1926 the rate per 10,000 live births was 67.1. In urban areas there was a reduction of 4.2 points—from 84.9 in 1921 to 80.7 in 1926. In the rural areas the rate in 1926 was 8.7 points lower, being 55.3 in 1921 and 46.6 in 1926. When the period prior to cooperation (1917-1921, exclusive of 1918) is compared with the period of cooperation (1922-1926) an even more marked difference appears. The average rate during the period of cooperation was 17.9 per cent lower than the average rate of the previous period in the rural areas and 6.1 per cent lower in the urban districts.

The death rate for infants under 1 year of age per 1,000 live births showed a greater decrease in the urban than in the rural areas. The average rate for urban areas was 17.7 per cent lower and that for rural areas 12.3 per cent lower during the period of cooperation than during the years immediately preceding.

A nursing demonstration in prenatal care was conducted in Richland County during a three-year period, 1924 to 1926. Figures furnished by the State show that in this county (exclusive of the towns of Mansfield and Shelby) during this period there were 442 live births and 7 stillbirths to mothers who had received prenatal instruction. No mothers in this group died from causes associated with pregnancy and childbirth. In the county during this same three-year period there were 795 live births and 28 stillbirths to mothers receiving no prenatal instruction through the demonstration. Five of these mothers died from puerperal causes; thus the death rate was 6.3 for every 1,000 live births. The stillbirth rate in the group receiving care was 1.6 per 100 live births; in the other group it was 3.5. In the supervised group 6 babies died in the first month of life—a neonatal death rate of 13.6 per 1,000 live births compared with a rate of 55.3 for the other group in which 44 babies died in the first month of life. The babies born to mothers who received prenatal instruction were supervised through the first year of life, and the mortality rate for this group was 22.6 for every 1,000 live births. In the group not cared for by the demonstration the infant mortality rate was 84.3. If the rates in this group had prevailed in the supervised group there would have been 3 deaths of mothers instead of no deaths; 15 stillbirths instead of 7; 24 neonatal deaths instead of 6; and 37 deaths of infants under 1 year of age instead of 10.

Comparison can be made between the rates in Belmont and Jefferson Counties, both of which are in the eastern part of the State and have similar population and industries (largely mining and steel). Belmont County had special nursing service under the maternity and infancy act during the two years, 1923 and 1924. According to figures submitted by the State this county had for these two years an average infant mortality rate of 83.2 per 1,000 live births. This is 16.3 per cent lower than the average infant mortality rate for the preceding four-year period (1919-1922), which was 99.4. Jefferson County had no maternity and

infancy nursing service, having only the general educational work done by the bureau, and this county lowered its average infant mortality rate only 8.8 per cent (from a rate of 111.2 in the period 1919-1922 to a rate of 101.4 in the period 1922-1926). The maternal mortality rates show similar differences: Belmont County's average rate was 25 per cent lower for the period 1923 to 1926 than for the period 1919 to 1922, whereas Jefferson County's rate was only 18.2 per cent lower.

Comparison can be made also between the rates in Athens and Guernsey Counties in the eastern part of the State, the former being farther south than Belmont and Jefferson Counties. The industries of these counties are largely mining, though there is some agriculture. Athens County had special nursing service under the maternity and infancy act during the period 1924 to 1926. This county's average maternal death rate for the period 1924 to 1926 was 6.7 per 1,000 live births, a rate 21.2 per cent lower than the average rate for the three preceding years (1921-1923), which was 8.5. Guernsey County had no special nursing service. Its average maternal death rate was 4.8 per 1,000 live births from 1921 to 1923 and 6.3 from 1924 to 1926—or 31.3 per cent higher. The percentage decrease in the infant mortality rate was practically the same in the two counties (23.5 per cent in Guernsey County and 22.4 per cent in Athens County).

Since the beginning of the State's cooperation under the maternity and infancy act one county and one city have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

## OKLAHOMA

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State department of public health, bureau of maternity and infancy, Oklahoma City.

#### Staff:

Director (physician), 6 nurses (1 part year), 2 vital-statistics clerks (part year), 2 clerks, 1 stenographer. Temporary assistants were employed as needed. Five county nurses were paid for some maternity and infancy work.

#### Activities:

Combined prenatal and child-health conferences conducted by physicians, 87; expectant mothers registered and examined, 8; infants and preschool children registered and examined, 1,046.

Child-health conferences conducted by physicians, 72; infants and preschool children registered and examined, 1,803; defects found, 3,552; children having defects, 1,737. Local physicians volunteered their services for some of the conferences, others were conducted by the director of the bureau. A new feature of the latter conferences was that each child's examination was recorded in duplicate, the form used being an adaptation of the standard form prepared for the United States Children's Bureau<sup>31</sup> providing for yearly examinations of the child up to 6 years of age. On one copy of the record at the top of the column for the findings of the second examination a selected date (often the child's next birthday) was written and this copy was given to the mother. She was urged to take the child to her family physician for a second examination on the designated date, or immediately if corrective work was needed. Reports received from local physicians indicated that many mothers at once took to physicians the children who needed medical attention.

Prenatal conference conducted by a physician, 1; expectant mothers registered and examined, 4.

Little mothers' classes, 40 organized; girls enrolled, 902; number completing course, 882; lessons in course, average of 8 for white girls, 19 for Indian girls.

Teachers' classes in infant hygiene, 23 organized; teachers enrolled plus those carried over from previous year, 876; number completing course, 736; number still on roll, 137; lessons in course, average of 15.

Nurses' classes in infant hygiene, 2 organized; nurses enrolled and completing course, 21; lessons in course, 16.

<sup>31</sup> Standards for Physicians Conducting Conferences in Child-Health Centers, blank form facing p. 6. U. S. Children's Bureau Publication No. 154. Washington, 1926.



## Activities—Continued.

- Mothers' classes, 4; mothers enrolled, 141; number completing course, 80; lessons in course, 10.
- Home visits by nurses, 596 (prenatal cases seen, 95; obstetrical cases, 13; postnatal cases, 13; infants, 282; preschool children, 299).
- Group demonstrations, 649; 26 of these were to rural and city club women, 349 at little mothers' classes, and 274 at classes for mothers, teachers, and nurses.
- Survey, 1, of preschool children, in 3 counties. It was found in one county that the births had been registered for only 2,438 of the 2,992 children listed, and that only 167 of the children had been immunized against any communicable disease. In pursuance of this survey a child-health conference was arranged at one of the big ranches in the State, for which more than 1,200 children were enrolled. The examinations were made by a number of physicians, including some of the leading pediatricians of the State. Unusual cases were referred to the pediatricians, with whom the visiting physicians held consultations. The effect of the work was far-reaching, and there was a general increase of interest in work affecting the health of children.
- Talks and lectures, 888, at teacher-training schools, meetings of federated clubs and of parent-teacher associations, State and local meetings of physicians and nurses, classes of medical students, and farm groups. The director gave about 70 of these talks to a total of approximately 7,000 persons.
- Literature distributed, 253,000 pieces.
- New names registered for prenatal letters, 7,896; prenatal letters distributed, 9,719 sets. Many physicians throughout the State registered their prenatal cases for these letters.
- The bureau continued its cooperation in the graduate courses in pediatrics for physicians, begun in March, 1926, by the extension division of the State university. A staff nurse was detailed to assist in the clinic work, and practically the entire State was covered. Thirty-two nine-week courses were given, each group having a weekly lecture and clinic. Four hundred and eighty-eight physicians completed the course.
- Nutrition work was done through the little mothers' classes and the classes conducted for mothers and teachers.
- Exhibits conducted, 407, at State and county fairs, club meetings, and classes. A plaster dental exhibit was added to the bureau's exhibit material through the courtesy of the State dental association.
- Birth registration was urged in all classes and talks and in the prenatal letters distributed.
- Breast feeding was emphasized in the courses in pediatrics and in talks given and through the distribution to physicians of a set of charts on breast feeding.
- Infants born in the State during the year, 55,770; infants under 1 year of age reached by the work of the bureau, 12,959; preschool children reached, 7,920; expectant mothers reached, 12,213.
- Counties in the State, 77; counties having maternity and infancy work during the year, 63; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 75.
- As a result of the bureau's work many schools have introduced courses in child care, and nurses employed by communities have given more time to maternity and infancy work.
- The following organizations cooperated in the bureau's work: State university, State agricultural and mechanical college, State department of public instruction, Crippled Children's Society, women's clubs, and the parent-teacher association. They assisted with classes, clinics, meetings, and exhibits.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

Registration of births has increased as a result of the campaign conducted by the State department of health, in which the bureau of maternity and infancy assisted.<sup>32</sup>

<sup>32</sup> Oklahoma was admitted to the birth-registration area in April, 1928.

As the State was not in the birth-registration area, no statement as to reduction in mortality rates can be made.

The maternity and infancy program has been educational, including instruction given to groups of girls, mothers, teachers, nurses, and physicians. The graduate course in pediatrics, given since March, 1926, to physicians by the extension division of the State university with the cooperation of the bureau of maternity and infancy, has developed much interest in the medical care of children. In the fiscal year ended June 30, 1927, a total of 488 physicians took the course. In 1923 there were only 33 pediatricians in the State; in 1926 there were 56.

Requests for literature have increased, showing a greater interest in the welfare and hygiene of maternity and infancy; 253,000 pieces of literature were distributed in 1927.

Realization of the need of preparing the mother early in life for some of her responsibilities as a home-maker is shown by the appointment of a public-health nurse by the United States Bureau of Indian Affairs to teach child care in 13 Indian boarding schools in the State. This nurse is supervised by the bureau of maternity and infancy. Appreciation of the value of such instruction is shown by the large number of students who have taken the course.

## OREGON

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, bureau of child hygiene, Portland.

#### Staff:

Director (physician, State health officer serving), assistant director (nurse), prenatal supervisor (nurse, paid in part from maternity and infancy funds), 1 clerk. Nineteen county nurses in six counties were paid for some maternity and infancy work.

Volunteer assistants, 15 physicians, 20 dentists, 12 nurses, 100 lay persons.

#### Activities:

Child-health conferences conducted by physicians, 146; infants and preschool children registered and examined, 2,350; defects found, 2,927; children having defects, 1,334. Parents had defects corrected in approximately 75 per cent of the children.

Prenatal conferences conducted by physicians, 218; expectant mothers registered, 330; visits to conferences, 1,273.

The prenatal supervisor devoted her time to the out-patient prenatal clinic of the University of Oregon Medical School, which serves as a teaching center for medical students.

Dental conferences conducted by dentists, 51; children receiving dental advice, 582.

New permanent combined prenatal and child-health centers, 5 established, largely as a result of the maternity and infancy work.

New permanent child-health centers, 2 established, largely as a result of the maternity and infancy work.

Little mothers' classes, 11 organized; girls enrolled and completing course, 216; lessons in course, 3 to 15.

Mothers' classes, 3 organized; mothers enrolled, 59; number completing course, 16; lessons in course, 18.

Home visits by nurses, 15,723 (prenatal cases seen, 303; obstetrical and postnatal cases, 106; infants and preschool children, 2,955).

Group demonstrations, 6, on set-up of traveling health center and on various phases of maternity and infancy work.

Assistance was given in a goiter survey and in a tuberculosis survey made by private organizations.

Campaigns, 6: (1) For vaccination. (2) For immunization against diphtheria. (3) For immunization against scarlet fever. (4) For care of the teeth. (5) For examination of preschool children during the summer so that defects could be corrected before the children should enter school in the fall. (6) For observance of May Day as Child Health Day.

Talks and lectures, 529.

Literature distributed, approximately 30,000 pieces.

## Activities—Continued.

New names registered for prenatal letters, 875; prenatal letters distributed, 1,025 sets.

Nutrition work was done through instruction at conferences and classes and in home visits.

Exhibits conducted, 21. Exhibit material prepared: Posters, charts, slides, and a layette. Exhibits were lent 10 times.

Scientific articles prepared, 3, on immunization and nutrition.

Statistical studies, 8: On maternal and infant mortality, 6; on nursing-service costs, 2.

Breast feeding was emphasized at conferences and at classes, in home visits, in talks given, in letters, and literature distributed.

Infants born in the State during the year, 14,568; infants and preschool children reached by the work of the bureau, 13,100; expectant mothers reached, 1,454. The bureau sent literature on infant hygiene to parents of all infants whose births were registered in the State bureau of vital statistics.

Counties in the State, 36; counties having maternity and infancy work during the year, 22; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 36.

The following organizations cooperated in the bureau's work: State department of education, State university medical school, State agricultural college, State tuberculosis association, State federation of women's clubs, American Red Cross, and the parent-teacher association.

Among the outstanding features of the year's work were the development of infant, preschool-child, and prenatal conferences, the immunization and vaccination campaigns in certain counties, and the extension of the prenatal-clinic work at the University of Oregon Medical School, in which the bureau cooperates. Throughout the State there has been increased interest in the maternity and infancy program.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

A special feature of the Oregon program for maternity and infancy work has been the detailing of nurses to county units. Considerable attention has been devoted also to child health conference work, and much informative literature has been distributed.

For several years the bureau of child hygiene has cooperated with the medical school of the State university in a prenatal-clinic program. A full-time nurse has been detailed to assist in the development and continuation of a prenatal clinic, at which the medical students of the State university secure their training in prenatal care. Physicians graduated from the university furnish much of the medical service to both rural and urban districts of the State. The effect of good training in obstetrics is indicated by reduced maternal and infant death rates during the period of cooperation under the maternity and infancy act. Not only the State as a whole but also the urban and rural areas show a definite drop in the death rate of mothers from causes associated with pregnancy and childbirth. In 1922 the State rate was 82.8 per 10,000 live births, the urban rate was 91.6, and the rural rate was 76.8. In 1926 the State rate was 59, the urban rate was 66.2, and the rural rate was 54.

Oregon was admitted to the United States birth-registration area in 1919. Comparison of the average rate for the three-year period before the State's cooperation under the maternity and infancy act (1919-1921) with that for the five-year period of cooperation (1922-1926) shows a reduction of 22.1 per cent in the maternal mortality rate for the State as a whole, 16.4 per cent for the urban areas, and 26.3 per cent for the rural areas.

The influence of good prenatal and confinement care is reflected further in the lowered death rates of infants in the first month of life, deaths due largely to prenatal and natal causes. This rate dropped from 36.9 in 1922 to 31.9 in 1926.

The infant mortality rate in the first year of life likewise shows a decline for the State as a whole from 58.5 per 1,000 live births in 1922 to 52.5 in 1926. The decline is more definite in the urban areas, the rate falling from 58.7 in 1922 to 39.2 in 1926. In the rural areas it declined from 58.3 in 1922 to 53.2 in 1925, but it rose again to 61.7 in 1926.

## PENNSYLVANIA

## STAFF AND ACTIVITIES DURING 1927

## Administrative agency:

State department of health, bureau of child health, preschool division, Harrisburg.

## Staff:

Director (physician), 7 physicians (6 part year, 1 not paid from maternity and infancy funds), 6 dental hygienists (part year), 2 midwife supervisors (physicians), 14 to 31 vital-statistics clerks, 4 field workers (1 part year), 3 file clerks, 2 stenographers. Ten nurses detailed to counties or communities, doing maternity and infancy work exclusively, and 125 to 135 nurses in the public health nursing division of the State department of health were paid for part-time maternity and infancy work in a generalized service.

Volunteer assistants, many physicians, nurses, and lay persons.

## Activities:

Child-health conferences conducted by physicians, 9,689; infants and preschool children registered and examined, 15,456; visits to conferences, 85,089.

Prenatal conferences conducted by physicians, 312; expectant mothers registered and examined, 1,055; visits to conferences, 2,837.

The division gave advisory service and furnished literature and record blanks to child-health centers and prenatal centers supported by other agencies, at which local physicians conducted 16,078 child-health conferences (examining 33,153 infants and preschool children) and also 5,045 prenatal conferences (examining 15,195 expectant mothers). There were 198,487 visits to these conferences by infants and preschool children and 65,704 visits by expectant mothers.

Two health cars staffed by physicians and nurses and carrying equipment for conducting child-health conferences were sent out in the field in June, 1927. (One such car had been in the field during the summer months of 1925 and 1926.) Three of the field workers worked in advance of the cars for many weeks; they arranged the itineraries, organized local committees, arranged for the attendance of children by house-to-house canvass, helped at the time of the conferences, and assisted with follow-up work. It was estimated that parents had had defects corrected in approximately 50 per cent of the children examined by the health-car staff in 1925 and 1926.

New permanent child-health centers, 37 established. The nursing service of 10 is paid for by Federal and State funds, that of 27 by funds from other agencies.

Intensive work among midwives in the coal regions of the State, begun in four counties in 1922 and later extended to five others, was continued. Two women physicians supervised and instructed the midwives, using a nine-lesson course of instruction. During the year under review, 521 midwives were under their supervision, and a number who had completed the course were given further instruction. In 1926 the number of deliveries attended by midwives in the nine counties was 6,201; the number of maternal deaths in the practice of these midwives was 13 (a rate of 2.1, whereas the death rate for the State as a whole was 6). All cases ending in death which a midwife had attended at any time during the labor were counted as deaths in the midwife's practice even though a physician was called later and signed the death certificate. Two institutes for midwives were held with an attendance of 206.

Home visits by nurses, 87,058.

The division cooperated in a campaign for the observance of May Day as Child Health Day in 64 counties. A number of committees chose this day for the opening of a child-health center, the beginning of a toxin-antitoxin campaign, or the beginning of a campaign for the examination of preschool children and correction of their defects before the children should enter school.

Talks and lectures, 229.



Literature distributed, 207,371 pieces. (In addition the bureau of vital statistics sent a copy of the Pennsylvania Baby Book to each mother with the certificate of birth notification.)

Exhibit material was lent 4 times.

The division continued to cooperate with the State bureau of vital statistics in issuing birth-notification certificates to the parents of all infants as fast as birth registrations were recorded. (This was begun in 1924.)

Infants born in the State during the calendar year 1926, 207,690; infants under 1 year of age reached by the work of the division during the year under review, 8,397; preschool children reached, 9,556; expectant mothers reached through conferences, 1,055. Through cooperating child-health and prenatal centers 35,354 infants and preschool children and 15,195 expectant mothers also were reached, and many others were reached through home visits.

Counties in the State, 67; counties having maternity and infancy work during the year under review, 67.

In 1924 an offer was made to furnish \$1,000 for the salary of a maternity and infancy nurse to each community that would match this sum, and 11 county or community nurses have been doing maternity and infancy work on such joint Federal, State, and local funds. At the close of the fiscal year under review two of these communities had assumed entire financial responsibility for the maternity and infancy work thus begun by the use of maternity and infancy funds and another had assumed a greater proportion of the expense.

The following organizations cooperated in the division's work: State league of women voters, State federation of women's clubs, State tuberculosis association, Women's Christian Temperance Union, American Red Cross, and the parent-teacher association.

Among the outstanding achievements of the year were the holding of the two midwife institutes and the addition of a second health car to the division's equipment for itinerant-conference work.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State has a large industrial population and has developed plans for administration of maternity and infancy funds to meet the needs of industrial and urban communities as well as of rural communities. Much of the State rural and urban work has been interlocking. Maternal and infant welfare has been promoted by the development of a state-wide nursing service in which nurses are paid from maternity and infancy funds for visits to mothers and babies, by the development of health centers supported by the State, and by the development of centers supported by communities, to which advisory or other service has been given and to which actual service has been rendered by staff nurses and physicians.

Supervision of midwives by a physician was begun in four counties in the anthracite regions in 1922. In March, 1925, a second physician was secured, and supervision was begun of midwives in five counties in the soft-coal region. From the respective dates at which the work was begun in each county to January 1, 1927, the State reported a total of 23,684 deliveries by midwives with a maternal death rate for the 4½ years of 1.43 for every 1,000 confinements. The neonatal death rate for the same period, according to State figures, was 27.4; both these rates were lower than those for the State as a whole.

In 1922, in which year Pennsylvania accepted the provisions of the maternity and infancy act, the State's infant mortality rate was 88.2 for every 1,000 babies born alive. In 1926 the rate was 82.4, or 6.6 per cent lower than in the first year of cooperation under the act. The rate for urban areas was 8.3 per cent lower in 1926 than in 1922, and for rural areas it was 4.6 per cent lower. The average rates for the period of cooperation (1922-1926) and the similar preceding period (1917-1921, excluding 1918) and the percentages of decrease are shown in the following table:

Area	Average infant mortality rate per 1,000 live births		
	1917-1921 (excluding 1918)	1922-1926	Percentage of decrease
State.....	98.9	84.3	14.8
Urban.....	98.9	83.7	15.4
Rural.....	98.8	84.9	14.1

The death rate among women from causes associated with pregnancy and childbirth in 1921, the year before the operation of the act, was 68.3 per 10,000 live births. In 1926 the rate was 63.7. In urban areas the rate was 84.4 in 1921 and 80.4 in 1926; in rural areas it was 52.2 in 1921 and 46.7 in 1926. The average rate for the period of the State's cooperation under the act (1922-1926) shows a greater reduction in the rural areas when compared with a similar period prior to the operation of the act (1917-1921, exclusive of 1918) than the rates in the urban areas. The average rates and the percentages of decrease are shown in the following table:

Area	Average maternal mortality rate per 10,000 live births		
	1917-1921 (excluding 1918)	1922-1926	Percentage of decrease
State.....	69.7	63.9	8.3
Urban.....	82.8	80.4	2.9
Rural.....	56.6	47.2	16.6

The rates of maternal deaths due to puerperal albuminuria and convulsions likewise show a greater decrease in the rural areas than in the urban areas. In the rural areas the average rate for 1922 to 1926 was 13.4 per cent lower than that for 1917 to 1921 (exclusive of 1918), whereas in the urban areas it was 11.6 per cent lower. (See chart on p. 103.)

Death rates from puerperal septicemia also show a greater difference in the rural areas than in the urban areas. The average rate for 1922 to 1926 in the rural areas was 12.3 per cent lower than that for 1917 to 1921; in the urban areas it was 2 per cent lower.

## RHODE ISLAND

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, child-welfare division, Providence.

#### Staff:

Director (physician), 7 nurses, 1 field secretary, 1 stenographer.

#### Activities:

Child-health conferences conducted by physicians, 34; infants and preschool children registered and examined, 446; defects found, 589. Parents had defects corrected in 318 of the children.

Conferences conducted by nurses, no physician present, 123; infants and preschool children inspected, 446; visits to conferences, 2,001.

Mothers' classes, 4 (3 for expectant mothers); mothers enrolled, 57.

Home visits by nurses, 54,803 (prenatal cases seen, 1,328; infants, 4,163; preschool children, 13,521).

Group demonstrations, 3, at child-health conferences, on methods of giving sun baths, also a number in homes of mothers and of midwives.

Assistance was given in one town in the work of the State board of health for immunization against diphtheria.

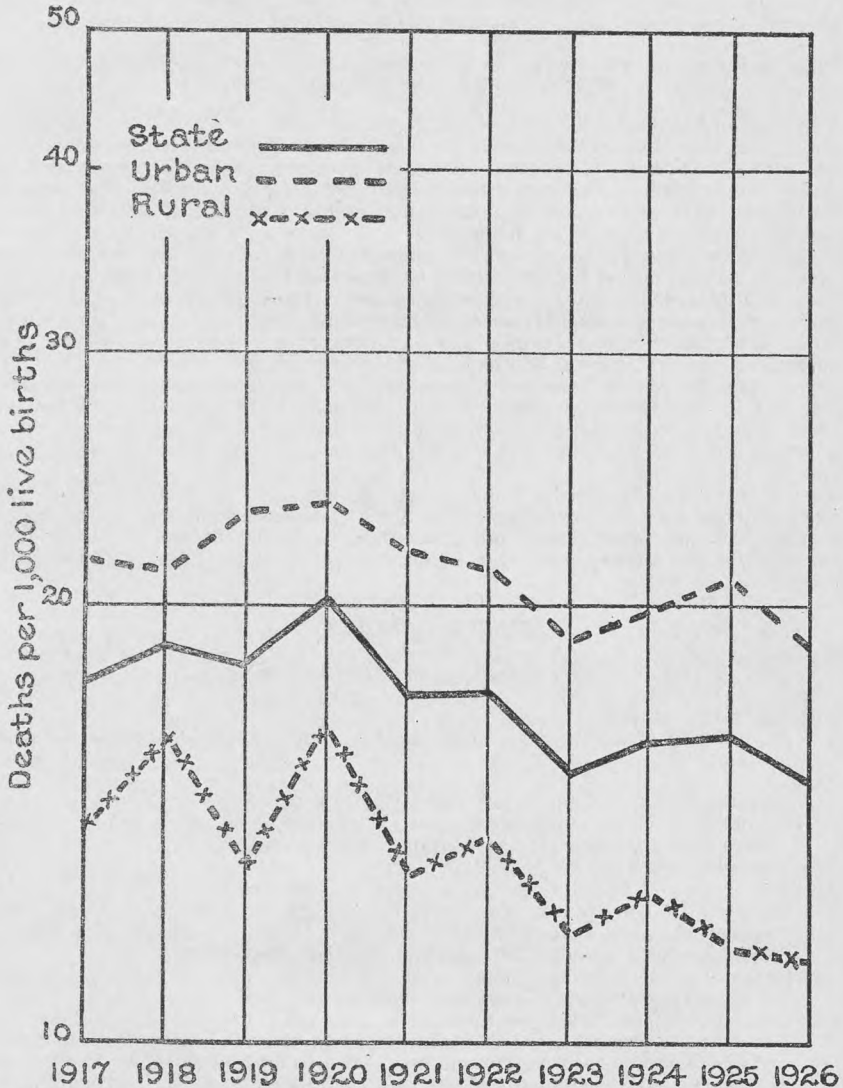
Activities—Continued.

Talks and lectures, 28.

Literature prepared: May Day flier.

Nutrition work was done through individual instruction to mothers in home visits.

Literature distributed, 73,206 pieces.



MATERNAL MORTALITY FROM PUERPERAL ALBUMINURIA AND CONVULSIONS (DEATHS PER 1,000 LIVE BIRTHS) IN THE STATE AND IN URBAN AND RURAL DISTRICTS OF PENNSYLVANIA, 1917-1926

Breast feeding was promoted through the instruction given in home visits and through contacts made by the director of the division.

Exhibits conducted, 3, at county fairs. Exhibits were prepared on sun baths and on the baby's bath and toilet.

## Activities—Continued.

Infants born in the State during the year, 13,981; infants under 1 year of age reached by the work of the division, 4,163; preschool children reached, 13,521; expectant mothers reached, 1,328.

Counties in the State, 5; counties having maternity and infancy work during the year, 4.

Among the outstanding features of the division's work were the assistance given in the toxin-antitoxin campaign and the general educational work done.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

The State has had a division of child welfare since 1919 and has cooperated under the provisions of the maternity and infancy act since 1925. The most important features of its program for several years have been the supervision of infants and preschool children through their regular attendance at child-health conferences and supervision of mothers and children through the regular visits of public-health nurses in the homes.

The State's cooperation under the maternity and infancy act has extended over too short a period for the results to be measured by comparison of maternal and infant death rates. A downward trend, however, appears in the mortality rates among women from causes associated with pregnancy and child-birth, particularly in those causes which can be prevented by good prenatal and obstetrical care—puerperal septicemia and puerperal albuminuria and convulsions. The death rate from septicemia was 23.5 per 10,000 live births in 1923 and 17.7 in 1926; from albuminuria and convulsions, 14.5 in 1923 and 10.3 in 1926. The infant mortality rates during the same period, though variable, likewise suggest a decline. In 1923 the infant mortality rate was 94.3; in 1926 it was 82.

As a result of the division's field work the situation in regard to midwives has improved since the beginning of the State's cooperation under the maternity and infancy act. Unlicensed midwives have appeared before the board for examination and license, and several who were practicing without a license have ceased to take cases.

## SOUTH CAROLINA

### STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, bureau of child hygiene and public-health nursing, Columbia.

## Staff:

Director (nurse), 1 physician (part time), 9 nurses (5 part year), 1 milk technician, 1 secretary-accountant, 1 stenographer. Two county nurses were paid for maternity and infancy work (1 full time).

Volunteer assistants, 1 physician, 1 nurse.

## Activities:

Child-health conferences conducted by physicians, 196; infants and preschool children registered and examined, 3,099; visits to conferences, 3,516; defects found, 1,520; children having defects, 1,217.

Prenatal conferences conducted by physicians, 48; expectant mothers registered and examined, 67; visits to conferences, 268.

Conferences conducted by nurses, no physician present, 8; mothers instructed in prenatal care, 17; infants and preschool children inspected, 77; visits to conferences, 94 (by mothers, 17; by children, 77).

New permanent combined prenatal and child-health center, 1 established as a result of the maternity and infancy work done by staff nurses. It is supported by private funds. Weekly prenatal conferences also were conducted in one county by a physician who volunteered his services.

Little mothers' classes, many, conducted by county nurses not paid from maternity and infancy funds, who used the course of lessons prepared by the bureau.

Mothers' classes, 3 organized; mothers enrolled (plus those carried over from previous year) and completing course, 210; lessons in course, 5.



## Activities—Continued.

Midwives' classes, 48 organized; midwives enrolled plus those carried over from previous year, 724; number completing course, 373; lessons in course, 10. Supervision of midwives constitutes a large part of the work of the bureau. In addition to conducting classes the staff nurses supervise the midwives who have had class instruction. Counties having a public-health nurse who meets with these groups regularly are visited only once a year by a staff nurse to check up and renew certificates. In counties having no nursing service (in 19 of which the midwifery instruction has been given) the staff nurse calls together the classes every three months. At this time she spends 7 to 10 days in the county, visiting the homes of the midwives who fail to attend classes, visiting prenatal cases reported by physicians or midwives, and helping to plan local work. During the year the staff nurses held 234 of these review classes, attended by 2,270 midwives.

Home visits by nurses, 3,303 (prenatal cases seen, 432; obstetrical cases, 8; postnatal cases, 393; infants, 671; preschool children, 505; midwives, 550).

Community demonstrations, 3, of a general maternity and infancy program, in 3 counties.

Group demonstrations, 297, of preparation of maternity bed and of obstetrical supplies, the baby's bath, and other phases of maternal and infant care, to groups of mothers and classes of midwives.

Surveys, 3: (1) Of midwives, to discover number practicing, number reporting births, and number of cases delivered by each midwife. (2) Of birth registration, to discover who was responsible for incomplete reporting of births. (3) Of diphtheria cases, to discover cause of death.

Campaigns, 2: (1) For promotion of birth registration, in order to obtain reentry into the birth-registration area. Constant efforts were made to stress the importance of birth registration. Talks were given to clubs and medical associations, posters were displayed, and physicians, midwives, and registrars were urged to send in reports of births. (2) For immunization against diphtheria, in 19 counties. The director and the staff nurses addressed meetings of parent-teacher associations and mothers' clubs, urging them to have children immunized against diphtheria. As a result many clinics were conducted, and several hundred children were given toxin-antitoxin.

Talks and lectures by staff, 309.

Literature distributed, 34,135 pieces.

Assistance in organizing nutrition classes was given to county nurses by the director and the staff nurses.

Exhibits conducted by staff, 8, at the State fair and various State and local meetings. Exhibit material was lent 12 times.

Scientific articles prepared: Contagious Diseases in Childhood, Rickets in Young Children, Periodic Health Examinations of Children as a Public Health Measure.

Infants born in the State during the year, 44,563; infants under 1 year of age reached by the work of the bureau, 40,000; preschool children reached, 2,449; expectant mothers reached, 309.

The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 46; counties having maternity and infancy work during the year, 41; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 46.

As a result of the work done by the bureau various local agencies undertook considerable maternity and infancy work during the year. Their activities included the organization of toxin-antitoxin and tonsil and adenoid clinics, the establishment of a prenatal clinic at the county hospital, and the inauguration of weekly child-health conferences in one county.

At the request of various local organizations nurses from the bureau's staff went to the respective communities to help them plan their maternity and infancy work.

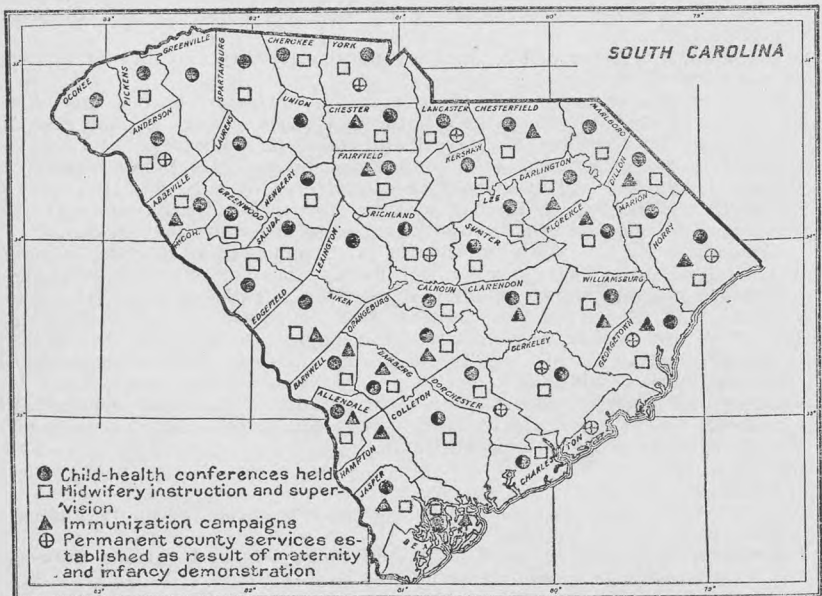
The following organizations cooperated in the bureau's work: American Legion, Council of Farm Women, federated clubs, a fraternal organization, and the parent-teacher association.

Among the outstanding achievements of the year were the prenatal work done and the improvement made in supervision of the midwives.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

Results of the maternity and infancy work during the period of cooperation can not be expressed in terms of mortality rates because the State has been both in and out of the birth-registration area during the period of cooperation under the act.

Much effort has been directed by the State board of health toward improving birth registration, in which assistance has been rendered by the bureau of child hygiene and public-health nursing. A test by the United States Bureau of the Census for reentry into the registration area will probably be made in the near future.



TYPES OF WORK DONE BY THE BUREAU OF CHILD HYGIENE AND PUBLIC-HEALTH NURSING, SOUTH CAROLINA BOARD OF HEALTH, 1922-1927

The supervision and training of midwives has been a feature of the program, with special attention directed to the midwives' reporting of births. The midwife situation has improved since the beginning of the maternity and infancy work, and the number of midwives has decreased.

During the period of the State's cooperation under the maternity and infancy act some work has been done in every county in the State. Forty-four counties have held child-health conferences; 40 have had midwifery instruction and supervision; and 19 have had campaigns for immunization against diphtheria; in 9 counties permanent county nursing services have been established as the result of demonstrations of maternity and infancy work. (See map above.)

### SOUTH DAKOTA

#### STAFF AND ACTIVITIES DURING 1927

Administrative agency:

State board of health, division of child hygiene, Waubay.

Staff:

Director (physician), 1 physician (part time, part year), 4 nurses (1 part time, 1 part year), 1 lecturer (part time), 1 secretary, 1 stenographer (part time). Five county nurses in two counties were paid for some maternity and infancy work.

Activities:

Combined prenatal and child-health conferences conducted by physicians, 78; expectant mothers registered and examined, 42; infants and pre-school children registered and examined, 3,172; defects found in children, 4,806; children having defects, 2,080.

Conference conducted by nurse, no physician present, 1; infants and pre-school children inspected, 12. The county nurses paid for maternity and infancy work held 107 conferences, with attendance of 944.

Dental conference, 1, conducted by dentists who volunteered their services; preschool children receiving dental advice at conference, 150.

Mothers' classes, 57; mothers enrolled, plus those carried over from previous year, 2,075; number completing course, 1,733; lessons in course, 7. The county nurses paid for maternity and infancy work held 10 mothers' classes with an enrollment of more than 160.

Home visits by nurses, 693 (prenatal cases seen, 95; postnatal cases, 18; infants, 319; preschool children, 261).

Maternity homes inspected, 71; inspections made, 79. Six homes were found ineligible for licenses and were ordered closed.

Group demonstrations, 134, at mothers' classes and girls' clubs.

Survey, 1, of maternity homes and maternity departments of hospitals.

Campaign, 1, for immunization against diphtheria; preschool children immunized, 4,015. The parent-teacher association and many clubs cooperated.

Talks and lectures, 182.

Literature prepared: Start the Baby Right, Suggestions to Mothers (revised).

Literature distributed, approximately 40,000 pieces.

New names registered for prenatal letters, 350; prenatal letters distributed, 512 sets.

Exhibits conducted, 40, at fairs, teachers' association meetings, girls' clubs, and child-health conferences. Exhibits were lent 20 times.

Scientific article prepared: Toxin-antitoxin and its administration.

Statistical studies, 3: Deaths of children under 5 years of age, attendants at births, number of children to enter school in the coming fall.

Breast feeding was emphasized in mothers' classes and in literature distributed.

Infants born in the State during the year, 14,633; infants under 1 year of age reached by the work of the division, approximately 15,000; preschool children reached, 4,116; expectant mothers reached, 726. The State sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 69; counties having maternity and infancy work during the year, 64; there are 5 unorganized counties whose population consists largely of Indians under Government care.

As a result of the division's work many local organizations conducted health conferences for preschool children, and some of them held mothers' classes, using the outline and demonstration material prepared by the division. At the request of various clubs the division supervised a number of the child-health conferences.

The following organizations cooperated in the division's work: State public-health association, State league of women voters, American Legion auxiliary, American Red Cross, women's clubs, and the parent-teacher association.

The outstanding feature of the year's work was the campaign for immunization against diphtheria.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

As the State has not been admitted to the United States birth and death registration areas no statement as to reduction of mortality rates can be made.

A satisfactory law for registration of deaths and births is necessary before a test can be made by the United States Bureau of the Census for admission to the areas. Efforts to have such legislation enacted have not yet been successful. A general educational program in maternity and infancy care has been conducted. Licensing and inspection of maternity homes and hospitals has been assigned to the division.

## TENNESSEE

### STAFF AND ACTIVITIES DURING 1927

#### Administrative agency:

State department of public health, division of child hygiene and public-health nursing, Nashville.

#### Staff:

Director (physician, part time), 1 physician (part year), 3 nurses (part time, 2 part year), 1 midwife teacher (physician), 2 vital-statistics clerks (1 part year), 5 clerks (part year), 1 stenographer (part time). Thirty county nurses in 17 counties were paid for some maternity and infancy work.

#### Activities:

Child-health conferences conducted by physicians, 363; infants and pre-school children registered and examined, 3,603; visits to conferences, 3,603; children having defects, 1,374. Parents had defects corrected in 288 of the children. Many of these conferences were conducted by county health unit physicians in the counties in which nurses were paid for maternity and infancy work.

Prenatal conferences conducted by physicians, 8; expectant mothers registered and examined, 21; visits to conferences, 21.

Conferences conducted by nurses, no physician present, 74; infants and preschool children inspected, 792.

New permanent child-health centers, 8 established. They are supported by Federal, State, and other public funds and by private funds.

Mothers' classes, 60 organized; mothers enrolled, 561; number completing course, 323; lessons in course, 15.

Midwives' classes, 50 organized; midwives enrolled plus those carried over from previous year, 1,101; number completing course, 723; lessons in course, 10.

Home visits by nurses, 16,173 (prenatal cases seen, 769; obstetrical cases, 51; postnatal cases, 700; infants, 1,145; preschool children, 934).

Group demonstrations, 7, of an exhibit on prenatal care, of the use of scales, and of various phases of maternal and infant care.

Surveys, 3: (1) Of midwives, in 10 counties. (2) Of birth registration, in 36 counties. (3) Of the incidence of diphtheria, in 6 communities.

Campaigns, 4: (1) For promotion of birth registration, in 36 counties. The State was admitted to the birth-registration area in May, 1927. (2) For observance of May Day as Child Health Day, state-wide. (3) For observance of girls' health week, in 1 community. (4) For immunization against diphtheria, in 6 communities.

Talks and lectures, 571.

Literature distributed, 27,392 pieces.

Prenatal letters distributed, 478 sets.

Exhibits conducted, 18, including display of maternity bed, baby's bath, and baby pen. Exhibit material prepared, many posters. Exhibit material was lent 6 times.

Statistical studies, 3, of maternal and infant mortality in certain areas.

Breast feeding was promoted through literature (763 pieces) distributed on the subject.

In addition to their work at conferences, in home visits, and at exhibits reported in the foregoing paragraphs the county nurses listed 112 unreported births and 6 stillbirths, obtained 1,198 specimens of urine for examination for expectant mothers, placed 98 infants and 98 preschool children under medical care, had 188 conferences with individual midwives, and kept 700 postnatal cases under supervision.

Infants born in the State during the year, 27,656; infants under 1 year of age reached by the work of the division, 8,549; preschool children reached, 7,370; expectant mothers reached, 2,659.



## Activities—Continued.

Counties in the State, 95; counties having maternity and infancy work during the year, 58; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 73.

The division's work had the cooperation of the parent-teacher associations.

Among the outstanding features of the year's work were the instruction of midwives, to which the midwife teacher (a negro woman physician) devoted full time, and the activities for the promotion of birth registration.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

During a period of several years the State health department has conducted a campaign for better registration of births. Assistance was given to this work by the division of child hygiene and public-health nursing. Special service was rendered by the negro physician on the division's staff, who worked among the negro midwives showing them how to register births in addition to teaching better midwifery procedures. The State passed the test of the United States Bureau of the Census and was admitted to the birth-registration area in May, 1927.

As the State was not admitted to the birth-registration area until the spring of 1927 no statement as to reduction of mortality rates can be made.

The State has a number of full-time county health departments, and county nurses have been paid from maternity and infancy funds for maternity and infancy work.

**TEXAS**

**STAFF AND ACTIVITIES IN 1927**

## Administrative agency:

State department of health, bureau of child hygiene, Austin.

## Staff:

Director (physician), 4 nurses (1 supervising nurse, 1 advisory nurse, part year, 2 itinerant negro nurses), 1 inspector of maternity and infant homes, 1 illustrator and publicity worker (part time, part year), 1 secretary, 1 clerk (part time), 5 stenographers. Twenty-five county nurses were paid for some maternity and infancy work.

Volunteer assistants, 113 physicians, 118 dentists.

## Activities:

Child-health conferences conducted by physicians, 357; infants and pre-school children registered, 3,209; number examined, 2,793; visits to conferences, 3,967; defects found, 2,927; children having defects, 1,809. Parents had defects corrected in 426 of the children.

Prenatal conferences conducted by physicians, 17; expectant mothers registered, 166; number examined, 122; visits to conferences, 268. In addition 262 expectant mothers were examined outside the conferences, most of them in physician's offices (the nurses having taken them there or having arranged through a committee for their transportation).

Conferences conducted by nurses, no physician present, 643; mothers instructed in prenatal care, 92; infants and preschool children inspected, 3,361; visits to conferences, 4,461 (by mothers, 382; by children, 4,079). In addition 726 mothers were instructed in prenatal care and 1,562 children inspected at visits to the nurses' offices.

Dental conferences conducted by dentists, 48; expectant mothers receiving dental advice, 147; preschool children receiving dental advice, 1,260.

New permanent child-health centers, 54 established. They are supported by county and private funds.

The nurses conducted 142 junior health clubs in which 3,190 girls and boys were enrolled. Some training in the care of infants and young children was included in the course.

Mothers' classes, 38 organized; mothers enrolled, 611; number completing course, 136; lessons in course, 12.

Midwives' classes, 41 organized; midwives enrolled, 499; number completing course, 123; lessons in course, 10.

Home visits by nurses, 11,355 (prenatal cases seen, 1,059; obstetrical cases, 241; postnatal cases, 1,043; infants, 2,498; preschool children, 4,121).

## Activities—Continued.

Maternity homes inspected, 93; inspections made, 230.

Infant homes inspected, 400; inspections made, 998.

Group demonstrations, 788, on various phases of maternal, infant, and pre-school-child care.

Campaigns, 7: (1) For observance of May Day as Child Health Day, also for the examination of preschool children and correction of their defects before they should enter school; state-wide. (2, 3, 4) For a safe milk supply (in cooperation with city and civic organizations), also for general clean-up and sanitation, important in reducing infant mortality; state-wide. (5, 6) For protection of young children against communicable diseases; in several counties. (7) For promotion of birth registration; in several counties. The State legislature passed the model birth registration law in 1927, and the bureau has assisted in the effort to raise the registration of births and deaths to the standard required for entry into the registration areas.

Talks and lectures, 1,496.

Literature distributed, 49,403 pieces.

New names registered for prenatal letters, 3,876; prenatal letters distributed, 3,908 sets.

Nutrition work was done through a few classes in nutrition for preschool children conducted by some of the county nurses.

Exhibits conducted, 20, mostly of literature, at county fairs. Exhibit material prepared, 6 charts.

Infants born in the State during the year, 86,149; infants under 1 year of age reached by the work of the bureau, 48,743; preschool children reached, 8,047; expectant mothers reached, 5,774. The bureau has sent its literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 254; counties having maternity and infancy work during the year, 30; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 90.

The following organizations cooperated in the bureau's work: State medical association and auxiliary; State dental association, American Legion and auxiliary, Women's Legislative Council, and the parent-teacher association. They aided in local work and helped to promote birth registration. The dental association made a survey that included preschool children.

Among the outstanding features of the year's work were the state-wide campaign for a better milk supply and the furthering of maternity and infancy work through the cooperation of the organizations mentioned in the preceding paragraph.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State has passed the first stage in a program for maternal and infant care by enacting legislation necessary for entering the registration areas, as the legislature passed a model registration law in 1927. Plans have been made for a campaign to bring the State into the registration areas. The bureau of child hygiene has assisted in the work to raise the registration to the standard required for entry into the United States birth and death registration areas.

As the State is not in the birth-registration area no statement as to reduction of mortality rates can be made.

An educational program has developed interest in maternal and infant welfare in the State.

The situation in regard to midwives has improved since the beginning of the maternity and infancy work. All the midwives in the State who are recorded have received instruction in the reporting of births and deaths and in the use of a prophylactic in the eyes of the newborn. In the counties in which county nurses were employed for maternity and infancy work the midwives have been required to take a series of lessons given by the nurse and local physicians.

### UTAH

#### STAFF AND ACTIVITIES IN 1927

Administrative agency:

State board of health, bureau of child hygiene, Salt Lake City.

**Staff:**

Director (physician, 1 physician (part year), 2 nurses (1 part year), 1 dentist (part year), 1 vital-statistics clerk, 2 stenographers (1 part year), Temporary assistants were employed as needed. Two county nurses and 4 county health officers were paid for some maternity and infancy work in 7 counties.

Volunteer assistants, 45 physicians, 2 dentists, 2 nurses, 1,010 lay persons.

**Activities:**

Combined prenatal and child-health conferences conducted by physicians, 409 (by staff physicians, 86; by county units, 323); expectant mothers registered, 82; infants and preschool children registered and examined, 4,378 (at conferences held by staff physicians); visits to all conferences, 10,640 (by expectant mothers, 82; by children, 10,558); defects found, 16,378; children having defects, 3,607 (of those examined by staff physicians). Parents had defects corrected in 1,734 of the children.

Conferences conducted by nurses, no physician present, 2; infants and preschool children inspected, 21.

Dental conferences conducted by dentists, 125; preschool children receiving dental advice, 1,921.

New permanent combined prenatal and child-health centers, 23 established. They are supported by local funds.

Mothers' classes, 5 organized; mothers enrolled plus those carried over from previous year, 240; lessons in course, 4 to 20. Classes were still in progress at the close of the year under review.

Home visits by nurses, 2,454 (to prenatal cases, 52; obstetrical cases, 10; postnatal cases, 11; infants, 462; preschool children, 1,919).

Maternity homes inspected, 6; inspections made, 10.

Infant homes inspected, 8; inspections made, 8.

Group demonstrations, 96, on various phases of maternal and child care.

In small communities demonstration health conferences were conducted.

Campaigns, 2: (1) For examination of preschool children and correction of their defects before the children should enter school. (2) For observance of May Day as Child Health Day.

Assistance was given in campaigns for immunization against diphtheria and for a clean milk supply conducted by the State board of health.

Talks and lectures, 36.

Literature distributed, 11,669 pieces.

Exhibits conducted, 3, at the State fair and at county fairs. Exhibit material was lent 11 times.

Nutrition work was done through instruction given to the parents of children found to be underweight.

Breast feeding was emphasized in talks with mothers at the health conferences.

Infants born in the State during the year, approximately 14,000; infants under 1 year of age reached by the work of the bureau, approximately 14,000; expectant mothers reached, 2,793. Work was done for preschool children, but no complete record was kept of the number reached. The bureau sent literature on infant hygiene to parents of all infants whose births were registered in the State bureau of vital statistics.

As a result of previous organization and help some of the larger communities in the State held 195 child-health conferences with only supervisory assistance from the bureau. At these conferences 3,388 examinations were made of preschool children.

Counties in the State, 29; counties having maternity and infancy work during the year, 28. One county is very difficult of access for maternity and infancy work.

The following organizations cooperated in the bureau's work: State farm bureau, a prominent church relief society, and the parent-teacher association. These organizations formed local committees to promote maternity and infancy work, and the relief society gave financial assistance also.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The interest in maternal and infant welfare has grown during the period of cooperation under the act. One county and a number of communities have assumed responsibility for maternity and infancy work.

Assistance toward the development of seven full-time county health departments has been given by maternity and infancy funds in return for maternity and infancy work.

Permanent lay groups and committees cooperate with the bureau of child hygiene in assisting with return conferences conducted by the bureau's staff in the sections of the State not in a position to maintain such work as a community.

There is a marked improvement in the physical condition of the children throughout the State resulting from instruction in nutrition and hygiene given to the parents. Parents are having physical defects corrected and dental care given to their children. The child himself is being educated in health and will be a wiser parent in the future for having received this instruction.

Utah was admitted to the United States birth-registration area in 1917 and accepted the provisions of the maternity and infancy act in 1922. During the period of cooperation under the act the maternal mortality rates have been considerably reduced, particularly in the rural areas. In these areas in 1922 the maternal mortality rate was 50.3 per 10,000 live births. The rate has dropped steadily, and in 1926 it was 36.8—a reduction of 26.8 per cent. Comparison with the period prior to cooperation (1917-1921, exclusive of 1918) shows that the average rate was 35.9 per cent lower during the period of cooperation than during the preceding period—40.1 compared with 62.6. The average rate for the urban areas was also lower during the period of cooperation than during the preceding period, although the difference was not so marked as that for the rural areas, being 29.7 per cent lower for 1922 to 1926 than for 1917 to 1921.

In 1921, the year prior to the operation of the maternity and infancy act, Utah had a maternal death rate of 72.6 per 10,000 live births for the State, 92.7 for urban areas, and 62.7 for rural areas. Changes in the rates since that year are shown in the following table:

Year	Maternal mortality rate per 10,000 live births			Year	Maternal mortality rate per 10,000 live births		
	State	Urban	Rural		State	Urban	Rural
1921-----	72.6	92.7	62.7	1924-----	45.1	59.4	37.0
1922-----	55.5	65.6	50.3	1925-----	51.7	76.9	37.5
1923-----	49.8	71.5	38.2	1926-----	48.6	69.8	36.8

Deaths of mothers from puerperal septicemia and from puerperal albuminuria and convulsions show a decided drop since 1921. In that year the rate for the State from septicemia was 29.5 for every 10,000 live births; in 1926 it was 16. From albuminuria and convulsions the mortality rate was 15.1 in 1921 compared with a rate of 10.6 in 1926. The same general declines are apparent in the rural areas. In 1921 the rural rate from septicemia was 20.5; in 1926 it was 15.4. From albuminuria and convulsions the rate was 15.4 in 1921 and 8.3 in 1926. In the urban areas the rate from septicemia was 47.4 in 1921 compared with 16.9 in 1926; from albuminuria and convulsions the rate was practically the same in both years.

The average infant mortality rate for the period of cooperation (1922-1926) was 9.3 per cent lower than that for the period prior to cooperation (1917-1921, exclusive of 1918). The average urban rate was 11.6 per cent lower and the average rural rate 7.9 per cent lower.

## VERMONT

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State department of public health, Burlington.

#### Staff:

Director (physician, State health officer serving), 1 nurse (part year), 1 stenographer.

#### Activities:

Child-health conferences conducted by physicians, 3; infants and preschool children registered and examined, 85; defects found, 54; children having defects, 41.



## Activities—Continued.

Community demonstration, 1, begun in the previous fiscal year and continued for a few months of the year under review.

Group demonstrations, 14, on care of infants and preparation of their food, obstetrical packages, and clothing for expectant mothers.

Talks and lectures, 38; 13 lectures on prenatal, infant, and child care were given in 3 towns to a total attendance of 210 women.

Literature prepared: Daily time cards for infants and preschool children, routine for conducting child-health conferences.

Literature distributed, 4,036 pieces.

Infants born in the State during the year, 7,015; infants under 1 year of age reached by the department's work, 903; preschool children reached, 975; expectant mothers reached, 808.

Counties in the State, 14; counties having maternity and infancy work during the year, 8; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 12.

The following organizations cooperated in the department's work: State university, State federation of women's clubs, State league of women voters, and the parent-teacher association.

With only one nurse and one clerk on the staff the department's activities in the winter months necessarily consisted largely of educational work through demonstrations, lectures, and distribution of literature, and those in the spring and summer consisted of efforts to stimulate local organizations to initiate their own child-health programs. In the communities in which child-health conferences were conducted by local groups the nurse met the committees beforehand to help in planning the work and she attended the conferences to give assistance during the examinations.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

The State began cooperation under the Federal maternity and infancy act in 1925. The first work done was a demonstration in a rural area. Later a state-wide educational program was inaugurated. The result of the maternity and infancy work during the period of cooperation has been the development of greater interest in the welfare of mothers and infants.

**VIRGINIA**

**STAFF AND ACTIVITIES IN 1927**

**Administrative agency:**

State board of health, bureau of child welfare, Richmond.

**Staff:**

Director (physician), 1 physician, 2 nurses, 1 midwife supervisor (nurse), 1 director of correspondence course (nurse), 3 clerks, 4 stenographers. Temporary assistants were employed as needed. Thirty-nine county nurses and 10 city nurses were paid for some maternity and infancy work.

**Activities:**

Combined prenatal and child-health conferences conducted by physicians, 124; expectant mothers registered, 105; number examined, 102; infants and preschool children registered and examined, 291; visits to conferences, 1,007 (by expectant mothers, 304; by children, 703).

Child-health conferences conducted by physicians, 335; infants and preschool children registered and examined, 4,454; visits to conferences, 5,468; defects found, 9,670; children having defects, 2,990.

These conferences were conducted by staff physicians and nurses, by county health units, and by local physicians. Emphasis was placed on the examination of children who would enter school for the first time in the fall. School officials cooperated in many places by making surveys of the preschool children, thus enabling the public-health workers to get in touch with them more easily; superintendents of schools sent letters to parents requesting that preschool children be examined and that all needed immunizations and corrections of defects be made before the children should enter school. In order to stimulate interest among parents in having children free from defects the bureau designated as "five-

## Activities—Continued.

- point" children all who had normal vision and hearing, good teeth, and no symptoms of trouble with tonsils or adenoids and who were less than 10 per cent underweight. These children received blue ribbons at the county school fairs, had their pictures taken for a special album kept by the State board of health, or were rewarded in other ways.
- Conferences conducted by nurses, no physician present, 602; infants and preschool children inspected, 2,517; expectant mothers instructed in prenatal care, 191; visits to conferences, 5,499 (by children, 5,055; by expectant mothers, 444).
- Dental conferences conducted by dentists, in 19 counties (number of conferences not reported); preschool children receiving dental advice, 3,283. More children failed to qualify as "five-point children" because of dental defects than for any other reason, consequently the dental-conference work was increased.
- New permanent combined prenatal and child-health centers, 9 established. They are supported by local organizations.
- New permanent child-health centers, 16 established. They are supported by local organizations.
- Little mothers' classes, 10 organized; girls enrolled, 235; number completing course, 154; lessons in course, 10 to 32.
- Mothers' classes, 57 organized; mothers enrolled plus those carried over from previous year, 836; number completing course, 275; lessons in course, 6 to 24.
- Midwives' classes, 83 organized; midwives enrolled, plus those carried over from previous year, 1,162. Number completing course, 57; lessons in course, 8.
- Home visits by nurses, 88,849 (prenatal cases seen, 3,479; obstetrical cases, 444; postnatal cases, 5,596; infants, 10,858; preschool children, 12,145).
- Maternity homes inspected, 6; inspections made, 6.
- Group demonstrations, 52; on clothing for the expectant mother and the baby, bathing the baby, preparing food for young children, and other phases of maternal and infant care.
- Surveys, 2: (1) Of maternity care in hospitals. (2) Of breast feeding (in progress).
- Campaigns, 5: (1) For prevention of diphtheria. (2) For prevention of typhoid fever. (3) For prevention of smallpox. (4) For improvement in nutrition. (5) For examination of preschool children and correction of their defects before they should enter school. This work was done in 30 counties and 6 towns.
- Talks and lectures, 126.
- Literature distributed, 170,158 pieces.
- Prenatal letters distributed, 2,438 sets.
- Correspondence course: Mothers registered plus those carried over from previous year, 1,902; number completing course, 428; number having two or more lessons, 700; lessons in the course, 12.
- Five-day institutes for training "doctors' helpers" were held in various parts of the State, other agencies cooperating with the bureau. Lectures and demonstrations were given for five hours every day on maternal and infant care, personal hygiene, home nursing, and community health. The courses were intended primarily for women who wished to give neighborly service when necessary, but those who took the entire course were better qualified than the average midwife and could obtain permits to practice midwifery.
- The bureau cooperated in institutes for parents, held in four communities under local auspices. Lectures on child health formed a part of the program.
- Nutrition work was done through classes and through individual instruction to mothers.
- Exhibits conducted, 3, of infants' clothing, bed, and tray and of graphs showing activities of the bureau.
- Statistical study, 1, of infant mortality (in progress).
- Breast feeding was emphasized in all work with mothers. Demonstrations in expressing milk from the breast were given, and the importance of breast feeding was pointed out constantly.

Activities—Continued.

Infants born in the State during the year, approximately 58,000; infants and preschool children reached by the work of the bureau, approximately 65,000; expectant mothers reached, 5,677. The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.

Counties in the State, 100; counties having maternity and infancy work during the year, 56; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 97.

The outstanding achievement of the year was the increased interest of the public in health matters, as evidenced by the greater number of parents who are taking their children to family physicians, the more numerous requests for information on prenatal and infant care, and the additional counties considering the employment of public-health nurses.

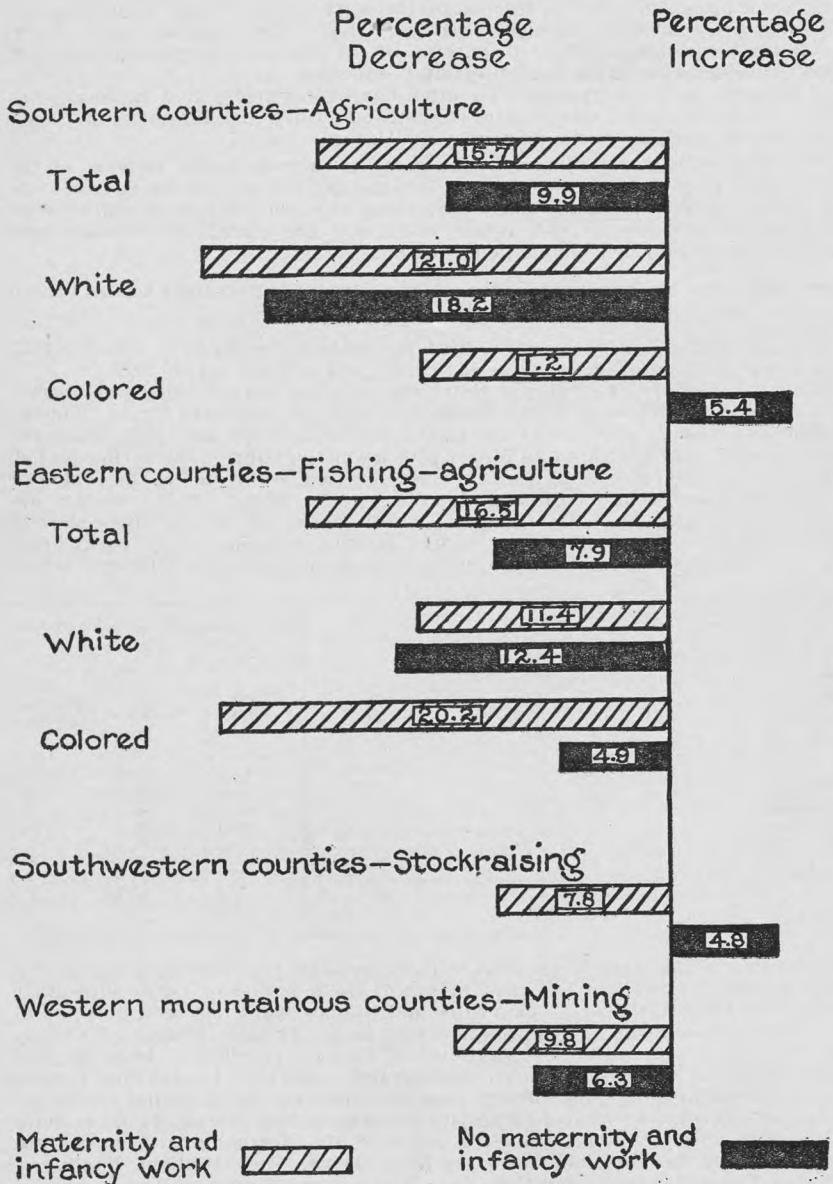
SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Virginia was admitted to the United States birth-registration area in 1917 and accepted the provisions of the maternity and infancy act in 1922.

The average infant mortality rate for the State as a whole during the period 1917 to 1921 (exclusive of 1918) was 87.4 deaths per 1,000 live births. During the period of cooperation under the maternity and infancy act (1922-1926) the average rate was 80.5; this was 7.9 per cent lower than during the earlier period. The average rate for white infants was 8.1 per cent lower during the period of cooperation; for colored infants it was 6.9 per cent lower. This reduction appears in the rates for both urban and rural areas; the urban areas show a greater decrease in the rates for colored infants, whereas in the rural areas the decrease was greater for white infants, as is shown in the following table:

Area	Infant mortality rate per 1,000 live births		
	1917-1921, excluding 1918	1922-1926	Percentage of decrease
State.....	87.4	80.5	7.9
White.....	74.2	68.2	8.1
Colored.....	116.5	108.5	6.9
Urban.....	108.1	97.0	10.3
White.....	78.2	72.4	7.4
Colored.....	169.3	146.8	13.3
Rural.....	82.1	76.0	7.4
White.....	73.2	67.1	8.3
Colored.....	102.0	96.8	5.1

The value of the work in the different communities is indicated by comparing certain counties that had intensive programs for a period of years with other counties in which little or no maternity and infancy work has been done, as in the accompanying graph. Changes in infant mortality rates in Halifax County are compared with those of Pittsylvania County (excluding Danville and Schoolfield). These are southern agricultural counties. In Halifax County an intensive maternity and infancy program was carried on during the entire period of cooperation, whereas Pittsylvania County had practically no activity of the sort. The combined rates for Accomac and Northampton Counties are compared with the combined rates for King George, King William, Lancaster, Richmond, and Westmoreland Counties. These are eastern counties on or near the bay; the principal industries are agriculture and fishing. A maternity and infancy program was conducted in both Accomac and Northampton Counties from 1923 to 1926, but there was no work in the other group of counties. In Wythe and Roanoke Counties (excluding Roanoke City) a maternity and infancy program was carried on from 1922 to 1926. The combined rates for these two counties are compared with the rate in Washington County, which had no such program. These three counties are in the southwestern part of the State; stock raising is the principal industry. Wise County, which had maternity and infancy activities from 1922 to 1926, is compared with Scott and Lee Counties, which had no maternity and infancy work. These three



Based on figures supplied by State division of vital statistics

COMPARISON OF PERCENTAGE CHANGE IN INFANT MORTALITY RATES (DEATHS UNDER 1 YEAR PER 1,000 LIVE BIRTHS) DURING PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT AND SIMILAR PERIOD PRIOR TO COOPERATION; COUNTIES IN VIRGINIA HAVING MATERNITY AND INFANCY WORK AND COUNTIES HAVING LITTLE OR NO MATERNITY AND INFANCY WORK



counties are in the western part of the State, and mining is their principal industry.

In general, greater decreases in the rates have prevailed in the counties or groups of counties where intensive maternity and infancy work was done. Decreases in average infant mortality rates in counties having maternity and infancy work varied from 7.8 per cent to 16.5 per cent. In the groups having no intensive maternity and infancy program the changes varied from a decrease of 9.9 per cent in one group of counties to an increase of 4.8 per cent in another county. It is particularly noteworthy that in the southern agricultural counties where special maternity and infancy work was done the rate for colored infants showed a decrease of 11.2 per cent, whereas in the near-by counties that had no maternity and infancy work other than the general educational activities of the State there was an increase of 5.4 per cent in the average rate for colored infants. A decrease of 4.9 per cent prevailed in the group of eastern counties where no intensive work was done; in a group of counties similarly located where a maternity and infancy program was conducted the decrease amounted to 20.2 per cent. (See chart on p. 116.)

The average mortality rate among mothers from causes associated with pregnancy and childbirth for the period 1917 to 1921 (exclusive of 1918) was 80 for every 10,000 live births. For the period of cooperation under the maternity and infancy act (1922-1926) the rate was 72.1; this was 9.9 per cent lower. For urban areas the average rate was 9.6 per cent lower (117 in 1917-1921 and 105.8 in 1922-1926); for rural areas it was 10.9 per cent lower (70.5 compared with 62.8).

County public health nursing services have been assisted by maternity and infancy funds until at present there are 35 full-time county services, 10 city services, and 4 itinerant services. Each nurse gives one-fourth of her time to maternity and infancy work.

One county has assumed responsibility for and support of the maternity and infancy work begun with maternity and infancy funds.

The interest in the maternity and infancy program has generally increased throughout the State. This is evidenced by the increase in health centers established and the larger number of home visits by nurses.

The situation in regard to midwives has improved since the beginning of the maternity and infancy work. Although 4,328 midwives had permits to practice in 1926, only 125 attended 20 or more cases, and 376 attended 10 to 20 cases; 1,555 reported no cases. As the older midwives cease practicing, their places are taken by more intelligent women. At the close of the year 1927 it was noted that 15 of the midwives were graduate nurses, 22 had taken the "doctor's helpers" course given by the bureau, and 35 were taking the bureau's correspondence course for mothers; nearly 1,200 midwives had one or more lessons in the 83 classes organized for their instruction. In Halifax County the bureau of child welfare and the American Child Health Association cooperated in a midwife demonstration, but unfortunately no figures are available to express the results of this work in terms of maternal or neonatal death rates.

## WASHINGTON

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State department of health, division of child hygiene, Seattle.

#### Staff:

Director (nurse), 1 clerk (part time), 1 accountant (part time), and 1 stenographer. Pediatricians were employed by the day to conduct child-health conferences. Three county nurses were paid for some maternity and infancy work.

Volunteer assistants: Local physicians and dentists frequently assisted at child-health conferences.

#### Activities:

Child-health conferences conducted by pediatricians, usually assisted by local physicians, 69; infants and preschool children registered and examined, 3,992. Local dentists assisted at more than half of the conferences. Defects found, 5,368; children having defects, 1,891. It was estimated that parents had more than 50 per cent of the defects corrected.

Mother and baby health schools consisting of six lectures were conducted twice in one city, and a series of eight weekly lectures was given in another.

## Activities—Continued.

Home visits by nurses, many (number not recorded).

Group demonstrations, many, in connection with the child-health conferences and lectures, on layettes, preparation of food, making up of formulas, and other phases of maternal and infant care.

Talks and lectures, 82.

Literature distributed, 18,000 pieces.

Correspondence course: Mothers registered plus those carried over from previous year, 146; lessons in course, 15. Papers were corrected and returned to those taking the course. This work was done in cooperation with the State university.

Exhibits conducted, 7, on diphtheria prevention. Exhibit material was lent eight times.

A weekly news-letter on some health subject was syndicated to 200 rural newspapers.

Breast feeding was emphasized at the child-health conferences and in lectures.

Infants born in the State during the year, 23,999; infants under 2 years of age reached through conferences, 1,777; preschool children reached through conferences, 2,215. The number of children reached through other activities was not reported.

Counties in the State, 39; counties having maternity and infancy work during the year, 21; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 30.

The following organizations cooperated in the division's work: State university, State agricultural college, State medical association, State federation of women's clubs, and the parent-teacher association.

An outstanding achievement in the year's work was the securing of legislative appropriation for a public health nursing division. This assures the establishment of a permanent public health nursing division in the State department of health.

## SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

The State program for maternity and infancy work has been mainly one of education through the work of public-health nurses, distribution of literature, a correspondence course for mothers, and itinerant child-health conferences. The conferences, at which leading pediatricians of the State have made the examinations, have had an educational value not only for the parents of the children but also for the general practitioners of the State.

Three counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds, and a fourth county was expected to assume such responsibility at the close of the year under review.

Since 1923, when the State began cooperation under the maternity and infancy act, the average maternal mortality rates, both urban and rural, have been lower than the average rates for a similar period prior to cooperation, as the following table shows:

Area	Average maternal mortality rate per 10,000 live births		
	1919-1922	1923-1926	Percentage of decrease
State.....	83.7	68.1	18.6
Urban.....	92.7	78.6	15.2
Rural.....	74.6	57.0	23.6

Comparison of the average infant mortality rates for the same periods shows a difference of 8.4 per cent, the rate for the State as a whole being 61.6 during the period 1919 to 1922 and 56.4 during the period 1923 to 1926. The average rate for urban areas was 12.5 per cent lower and that for rural areas 4.2 per

cent lower during the period of cooperation than during the preceding period. The infant mortality rates for the State as a whole have been practically stationary since 1923 (varying from 56.5 to 56.2), but a decrease was shown in 1924 and 1926 in the rural rates, which were as follows: 62.2 for 1923, 60.8 for 1924, 63.7 for 1925, and 58.7 for 1926.

## WEST VIRGINIA

### STAFF AND ACTIVITIES DURING 1927

#### Administrative agency:

State department of health, division of child hygiene and public-health nursing, Charleston.

#### Staff:

Director (nurse, part time), 1 nurse, 1 midwife supervisor (nurse), 1 vital-statistics clerk, 1 vital-statistics field worker, 2 stenographers. Twenty county nurses and one city nurse were paid for some maternity and infancy work.

#### Activities:

Child-health conferences, 614, conducted by county health officers and physicians who volunteered their services; infants and preschool children registered and examined, 828; examinations made, 5,127; visits to conferences, 8,634; defects found, 4,242.

Prenatal conferences conducted by physicians, 44; expectant mothers registered and examined, 37; examinations made, 68; visits to conferences, 71. Conferences conducted by nurses, no physician present, 238; mothers instructed in prenatal care, 195; infants and preschool children inspected, 407; visits to conferences, 1,124 (by mothers, 195; by children, 929).

Dental conferences, 20, conducted by dentists who volunteered their services; expectant mothers receiving dental advice, 99; preschool children receiving dental advice, 373.

New permanent child-health centers, 17 established. They are supported by State, county, and community funds.

Little mothers' classes, 82; girls enrolled, 1,292; number completing course, 693; lessons in course, average of 12.

Mothers' classes, 42; mothers enrolled plus those carried over from previous year, 1,233; number completing course, 83; lessons in course, 12 (some classes are continuous).

Home visits by nurses, 12,733 (to prenatal cases, 1,653; obstetrical cases, 158; postnatal cases, 2,095; infants and preschool children, 8,827).

Group demonstrations, 546, on various phases of maternal, infant, and preschool-child care; 8 were before large groups of farm women from all parts of the State.

Surveys, 16: (1 to 15) Of health conditions, in 15 communities. Local groups conducted these surveys under the direction of staff nurses or county nurses, and the data obtained formed the basis for considerable effective program planning. (16) Of midwives, in 28 counties.

Campaigns, 4: (1) For state-wide examination of preschool children and correction of their defects before they should enter school. (2) For a clean milk supply, practically state-wide. (3) For safe milk and water supply and better sanitation, important in reducing infant mortality, in 15 communities. (4) For immunization against diphtheria, typhoid fever, and smallpox, in 13 counties.

Talks and lectures, 571.

Literature prepared: Special Care of the Preschool Child during Winter Months, May Day celebration program booklet, lesson outline on the hygiene of maternity and the preschool child, diet card (revised). The division also prepared for the department of education a course of study in hygiene for use in the elementary schools; this included the teaching of the care of infants and preschool children.

Literature distributed, 96,266 pieces.

New names registered for prenatal letters, 1,769; prenatal letters distributed, 1,422 sets.

Correspondence course: Mothers registered plus those carried over from previous year, 8,182; number completing course, 976.

## Activities—Continued.

Exhibits conducted, 29, including equipment for nursery, clothing for infants and expectant mothers, charts, posters, and pictures illustrating various phases of the division's work.

Statistical studies, 3: Of mothers registered in correspondence course, by counties; of maternal mortality, by causes, for 1926; of infant mortality, by age and cause, and by counties, for 1926.

Nutrition work was done through lectures to mothers' classes and other groups and through instruction to individual mothers. One county nurse conducted a nutrition class in a mining region where such instruction seemed especially needed.

Breast feeding was promoted through instruction to mothers at home visits, in group meetings, and in the correspondence course, also through wide distribution of literature on the subject.

The vital-statistics field worker interviewed registrars, physicians, midwives, undertakers, and county clerks in an effort to accomplish more accurate reporting of births and deaths.

Infants born in the State during the year, approximately 44,000; infants and preschool children reached by the work of the division, 27,128.

Counties in the State, 55; counties having maternity and infancy work during the year, 47; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 50.

As a result of the division's work local public-health nurses not paid from maternity and infancy funds included in their work many activities affecting maternal and infant hygiene. Among these were the following: Child-health conferences, 290; health-study classes 1,367 (for adults, 240; for high-school girls, 11; for elementary-school girls, 1,116); mothers' conferences, 11; group demonstrations, 258; home visits, 17,014; immunization campaigns; exhibits; and distribution of literature at county fairs and in the course of surveys of community health.

The division gave advisory service to many local organizations.

The following organizations cooperated in the division's work: State department of education, State university (extension division, including all farm women's clubs), State tuberculosis association, State public-health association, State league of women voters, State federation of women's clubs, American Red Cross, and the parent-teacher association.

The outstanding achievement of the year was the general increase in amount of maternity and infancy work done in the State.

#### SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT

Early in the period of cooperation under the maternity and infancy act the State department of health, assisted by the division of child-hygiene and public-health nursing, inaugurated a campaign for more complete registration of births. The State passed the test of the United States Bureau of the Census and was admitted to the registration area in 1925, thus completing the first step in a maternity and infancy program—that of knowing how many infants are born and die in the State.

Maternity and infancy work has been promoted by the services of county nurses to whose salary a contribution is made from maternity and infancy funds in return for some maternity and infancy work on their part. These services have increased. Although no counties have assumed entire financial responsibility for maternity and infancy work begun with maternity and infancy funds the division is gradually decreasing the amount contributed to counties in which the work was first organized and is beginning work in other counties.

The amount of maternity and infancy work accomplished has increased from year to year during the period of the State's cooperation under the act. More home visits by nurses, especially to newborn infants, are reported; a greater number of women are enrolled for the correspondence course for mothers; interest in the care and welfare of mothers and infants has grown; a larger number of expectant mothers employ physicians than formerly had the advantage of medical supervision and care; and in still other ways there has been development of the maternity and infancy work.

The situation in regard to midwives has improved since the beginning of the State's cooperation under the maternity and infancy act, and fewer unfit midwives are practicing.



## WISCONSIN

## STAFF AND ACTIVITIES IN 1927

## Administrative agency:

State board of health, bureau of child welfare and public-health nursing, Madison.

## Staff:

Director (physician), 4 physicians (1 for 1 month), 5 nurses (2 part year, part time), 1 organizer of infant-hygiene classes, 1 assistant organizer of infant-hygiene classes, 3 vital-statistics clerks (part year), 1 bookkeeper and filing clerk, 1 silver-nitrate clerk (part year), 1 general clerk (part year), 1 publicity editor (2 months, part time), 2 stenographers, 1 chauffeur (part year).

Volunteer assistants, 25 physicians (approximately), 343 nurses, 147 lay persons.

## Activities:

Combined prenatal and child-health conferences conducted by physicians, 457; expectant mothers registered and examined, 293; examinations made, 317; infants and preschool children registered and examined, 8,631; examinations made, 12,180; visits to conferences, 12,497 (by expectant mothers, 317; by children, 12,180); all mothers and children were examined at each visit. Defects found in children, 14,820; children having defects, 6,951. Parents had defects corrected in approximately 25 per cent of the children. By means of the child-welfare special a number of conferences were held in counties that had been visited in previous years. The child-welfare special (a motor truck equipped for conducting prenatal and child-health conferences) carries a staff of physicians, a nurse, and a chauffeur. Its work, begun in the rural districts of the State in 1921, was continued through the use of maternity and infancy funds after the State accepted the benefits of the maternity and infancy act. By 1926 all the 71 counties in the State had been visited, the plan being to spend at least two weeks in each county. About 75 per cent of the children examined the second time had improved through better habits of diet and personal hygiene and the correction of defects to which attention had been called.

New permanent combined prenatal and child-health centers, 14 established. They are supported by Federal and State funds.

The organizer and assistant organizer of infant-hygiene classes devoted their time to work related to the training of teachers to conduct classes in infant hygiene in the schools of the State. Through the cooperation of the State department of public instruction, the State board of vocational education, and the State board of normal regents the course had been introduced in the public-school curriculum in the fall of 1923. In schools in which the full course is given as recommended by the bureau an examination is held at the completion of the required number of hours of study, and pupils receiving a grade of 75 or higher are entitled to certificates from the State board of health. During the year under review certificates were issued to 4,988 girls; this does not include all the girls who took the course, as the names of those completing the course in the large trade schools and the State normal schools were not sent in for certificates. (The course of study for the classes and a handbook of suggestions and helps for teachers were prepared by the bureau in 1925.)

Home visits by nurses, 1,811 (prenatal cases seen, 66; postnatal cases, 40; infants, 787; preschool children, 2,082).

Survey, 1, of the prevalence of goiter among children.

Talks and lectures, 503, including 335 by the organizer and assistant organizer of infant-hygiene classes to a total of 20,620 persons.

Literature prepared: Infant Hygiene Manual (revised), pamphlets on tonsils and adenoids, report on five years' work by the child-welfare special.

Literature distributed, 269,973 pieces.

New names registered for prenatal letters, 2,311; prenatal letters distributed, 2,881 sets.

Nutrition work was done through a nutrition institute in which the bureau cooperated.

## Activities—Continued.

- Exhibit conducted, 1, at the State fair. Exhibit material was lent 243 times.
- Statistical study, infant death rates in counties having maternity and infancy work and those having none (completed after the close of the year under review).
- Breast feeding was promoted through literature sent out with birth-registration cards and sent also to physicians, nurses, maternity centers, and maternity hospitals.
- Infants born in the State during the calendar year 1926, 56,621; infants under 1 year of age reached by the work of the bureau during the year under review, 58,899; preschool children reached, 2,412; expectant mothers reached, 3,030. The bureau sends literature on infant hygiene to parents of all infants whose births are registered in the State bureau of vital statistics.
- Counties in the State, 71; counties having maternity and infancy work during the year, 69; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 71.
- As a result of the work of the bureau many new health centers have been established, and there has been an increased interest in the immunization of preschool children against diphtheria and in the teaching of infant-hygiene classes in rural schools.
- The following organizations cooperated in the bureau's work: State league of women voters, State federation of women's clubs, American Legion, American Red Cross, Women's Christian Temperance Union, and fraternal organizations.

Among the outstanding features of the year's work were the increased interest in establishment of permanent health centers and the sending of literature on infant hygiene to the parents of all infants whose births were registered in the State bureau of vital statistics.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER THE MATERNITY AND INFANCY ACT**

Wisconsin was admitted to the United States birth-registration area in 1917 and accepted the provisions of the maternity and infancy act in December, 1921.

Three features are outstanding in the State's maternity and infancy program: The operation of a truck called the "child-welfare special" in the rural districts for the purpose of conducting itinerant conferences; the establishment of permanent centers through the use of State and local funds; and the promotion of knowledge of the care of the baby through classes in infant care for girls in grammar grades and high schools.

In 1921, prior to the State's cooperation under the maternity and infancy act, the infant mortality rate for the State was 72.1; in 1926 the rate was 69.1. For urban areas the rate was 79 in 1921 and 74.2 in 1926; for rural areas it declined from 67.9 in 1921 to 65 in 1926. Comparison of the average rate for the period 1917 to 1921 (exclusive of 1918) with the rate for the period of cooperation under the act (1922-1926) shows that the State rate was 10.6 per cent lower during the period of cooperation, the urban rate was 17.1 per cent lower, and the rural rate was 6.4 per cent lower.

One of the most important features of the program has been the operation of permanent child-health centers, to which children are brought at regular intervals for examination. Centers have been in operation since 1923 in certain counties in the central and southern parts of the State. The mortality among infants of these counties has been compared with that of groups of counties which had no permanent centers, having only the general educational work done by the bureau. The counties contrasted are similar in composition of population, in size, and in general in their industries. The figures on which the rates are based were supplied by the State and are for counties exclusive of cities of 10,000 population and over.

As a rule babies are not brought to the child-health centers during the first few days or weeks of life; and as a high percentage of infant deaths occurs during this period the deaths from the second to the twelfth month are used to demonstrate the results of care and advice given for children reached through the centers. In a group of four counties in the central part of the State the average death rate from the second to the twelfth month for the four-year period 1919 to 1922 was 26.9 per 1,000 babies surviving the first month of life;

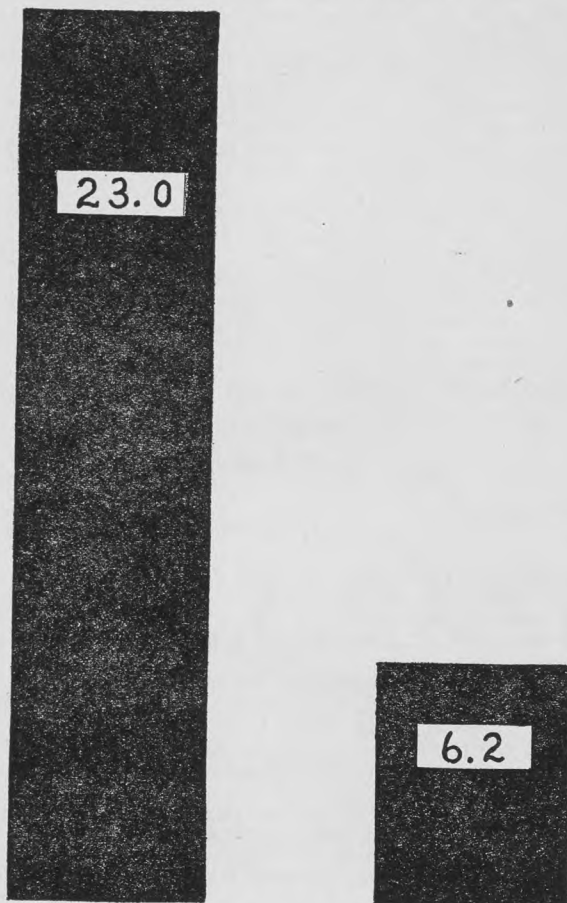


LITTLE MOTHERS' CLASSES IN WEST VIRGINIA

FRASER  
ST. LOUIS  
FEDERAL RESERVE BANK



in the period during which the centers were in operation (1923-1926) the rate was 23.0, a reduction of 7.1 per cent. In a comparable group of counties having no centers the reduction during the same period was only 2.6 per cent. In a similar group of two counties having permanent centers the reduction in the mortality rate for babies dying from the second to the twelfth month per 1,000



Infants 1 month and under 12 months of age in 3 counties

Infants under 12 months of age registered at health centers

COMPARISON OF MORTALITY RATES FOR INFANTS IN THE FIRST YEAR OF LIFE REGISTERED AT HEALTH CENTERS, WITH RATES FOR ALL INFANTS 1 MONTH AND UNDER 12 MONTHS OF AGE IN THREE COUNTIES IN WISCONSIN, 1925-1926

surviving the first month was 28.9 per cent, whereas in a similar group of counties having no centers the reduction was 9.8 per cent.

Deaths from gastrointestinal diseases, which are closely related to feeding care, show greater reductions in the counties having permanent centers than in

the counties not having such centers. In the central group of counties the average death rate from gastrointestinal diseases from the second to the twelfth month was 32.1 per cent lower during the period 1923 to 1926 than during the preceding four-year period (1919-1922). In the comparable group of counties having no centers the average rate was 11.6 per cent lower. In the southern group of counties the rate was 51 per cent lower during the period 1923 to 1926 than in the previous four-year period, whereas in the counties having no centers it was 34.2 per cent higher.

Comparison of the six counties having permanent centers with the State as a whole for the two four-year periods shows that the percentage of decrease in the death rate from diarrhea and enteritis in the second to the twelfth month per 1,000 infants surviving the first month of life was 31.7 in the six counties combined and 27.6 in the State. The rates in the counties varied from 8.9 per 1,000 survivors in 1921 to 2.8 in 1926. In the State as a whole the rates varied from 9.8 in 1921 to 5.5 in 1926.

The markedly lower rate for infants attending centers shows the value of supervision during the first year of life and the importance of providing facilities for child care. The death rate in the second to the twelfth month of life was 23 for all infants in the three counties during the years 1925 and 1926, whereas the rate for the infants who were under supervision at the child-health centers in these counties was 6.2. (See chart on p. 123.)

Since the beginning of the State's cooperation under the maternity and infancy act 20 counties have assumed the financial responsibility for maternity and infancy work begun with maternity and infancy funds.

## WYOMING

### STAFF AND ACTIVITIES IN 1927

#### Administrative agency:

State board of health, division of maternal and infant welfare, Cheyenne.

#### Staff:

Director (State health officer serving), 1 physician (part year), 1 vital-statistics clerk. Six county nurses were paid for some maternity and infancy work in 10 counties.

Volunteer assistants, 32 physicians, 32 dentists, 39 nurses, 133 lay persons.

#### Activities:

Child-health conferences conducted by physicians, 37; infants and preschool children registered, 782; number examined, 637; visits to conferences, 782; defects found, 255. A 3-day conference was held at the State fair, the physicians having the assistance of a dentist, who made oral examinations and recommendations; local nurses also assisted the staff nurses on duty.

Conferences conducted by nurses, no physician present, 59; mothers instructed in prenatal care, 450. Local dentists gave their services at a number of these conferences.

Home visits by nurses, 3,360 (to prenatal cases, 570; postnatal cases, 86; infants, 1,006; preschool children, 1,010; miscellaneous, 688).

Group demonstrations, 38, on the care of the baby, clothing for the baby and the expectant mother, and other phases of maternal and infant care.

Surveys, 2: (1) Of a hospital on an Indian reservation (by request). (2) Of birth registration, in part of 1 county.

Talks and lectures by staff, 93. The subjects stressed in many of these talks were breast feeding, immunization against diphtheria, importance of physical examination of the preschool child, the danger to the child of communicable diseases, and the importance of sunlight for babies.

Literature distributed, 6,750 pieces.

Exhibits conducted, 4, at the State fair and group conferences, of model layettes, maternity clothing, and equipment for care of the baby.

Breast feeding was emphasized in all talks to mothers and in literature distributed.

Infants born in the State during the year, 3,620; infants under 1 year of age reached by the work of the division, approximately 4,000; preschool children reached, approximately 2,000; expectant mothers reached, 1,020.

The division sent literature on infant hygiene to parents of all infants whose births were registered in the State bureau of vital statistics.

## Activities—Continued.

Counties in the State, 23; counties having maternity and infancy work during the year, 9; counties having maternity and infancy work since the acceptance of the maternity and infancy act, 23.

As a result of the division's work, a women's club in one community organized child-health conferences which were conducted by local physicians and nurses. In another community a women's club raised sufficient funds to employ a nurse under local auspices when the county nurse whom the division had paid for maternity and infancy work resigned.

Among the outstanding features of the year's work were the emphasis laid upon the importance of physical examination of the preschool child and the obtaining of more complete birth registration.

**SOME RESULTS OF THE WORK DURING THE PERIOD OF COOPERATION UNDER  
THE MATERNITY AND INFANCY ACT**

A changing personnel has interrupted the State work from time to time, but some permanent types of work show results. The full-time county health department in Natrona County was assisted by a nurse detailed to it for maternity and infancy work. In 1922 the infant mortality rate for Casper, in Natrona County, was 94.8 per 1,000 live births. In 1926 the rate had declined to 61.9. The infant mortality rate for the State declined from 78.6 in 1922 (the year of the State's admission to the United States birth-registration area and the year in which cooperation under the maternity and infancy act was begun) to 75.9 in 1926.

## FEDERAL ADMINISTRATION

### FEDERAL STAFF

#### ORGANIZATION

The maternity and infant-hygiene division of the United States Children's Bureau is one of the six major divisions of the bureau. It was created in 1922 to assist in the administration of the maternity and infancy act. The Children's Bureau has depended for the administration of the maternity and infancy act upon reports from the States, staff visits to the States, and the annual conference of State directors. All three sources have improved from year to year. Information on the maternity and infancy work in the States is obtained through the annual reports from the States made to the Children's Bureau, through special reports on the work of the county nurses employed under the maternity and infancy act, and through copies of monthly or other reports which directors of child-hygiene bureaus or divisions make to the respective State health officers.

The Federal staff and the expenses of Federal administration have been kept at a minimum. Only eight persons—three physicians, a public-health nurse, an auditor, and three clerical workers—were regularly employed in the maternity and infant-hygiene division during the entire year. The physicians on the staff included (1) the director, who was the executive officer of the division and also acted as consultant with the State directors in the field; (2) an associate physician whose duties included research, answering of special correspondence, and preparation of literature and a news-letter; and (3) a negro physician who gave instruction to negro midwives in regard to midwifery procedure and the reporting of births. Two part-time consultants in child hygiene and a part-time consultant in obstetrics were also on the staff. The consulting public-health nurse has been continually in the field advising and assisting in State programs and helping in birth-registration campaigns. The auditor has audited accounts of cooperating State agencies. The regular office staff consisted of a clerk, a stenographer-clerk, and a stenographer. From time to time additional persons are employed as needs arise. The medical staff, for example, was increased with the inauguration of the maternal-mortality investigation. (See p. 130.)

#### SPECIAL CONSULTANT SERVICE

State agencies administering the maternity and infancy act frequently request special consulting service from the members of the Federal staff. One of the consultants in child hygiene rendered such services for short periods in Colorado, Delaware, and Utah, and special service was given by a physician for a short period in Oregon, Montana, and South Carolina. The director of the mater-



nity and infant-hygiene division spent a few days in an advisory or consulting capacity in Iowa, Maryland, Michigan, Minnesota, New Hampshire, New York, North Carolina, North Dakota, Ohio, South Dakota, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin. The part-time consultant in obstetrics conducted a graduate course in obstetrics in Kentucky and assisted in negro health week at Tuskegee, Ala. A physician was detailed for part of the year to a field study in Kentucky and Virginia. The staff public-health nurse gave consulting services on public health nursing problems in the New England States, assisted with the Children's Bureau exhibit at the Sesquicentennial Exposition in Philadelphia, and gave advisory or consulting service in Arizona, Colorado, Idaho, Michigan, Missouri, Nebraska, New Mexico, New York, North Carolina, Ohio, Vermont, Washington, West Virginia, and Wyoming. Another staff nurse was assigned to special field service for a few weeks in Nebraska, then in Louisiana, and started late in the year in South Dakota a series of mothers' classes.

#### CONFERENCE OF STATE DIRECTORS

The fourth annual conference of directors of State bureaus administering the Federal maternity and infancy act was held at the Children's Bureau in Washington, January 11, 12, and 13, 1927. It was attended by representatives from 37 of the cooperating States and the Territory of Hawaii and from three noncooperating States. State supervising nurses were invited to the conference, and many came. A total of 63 representatives from 40 States and the Territory of Hawaii were in attendance. State health officers were present from Mississippi, Ohio, South Carolina, West Virginia, and Wyoming.

The subjects discussed at the conference were: Developing a permanent rural program in prenatal and natal care; Making maternity and infancy work permanent; Breast-feeding demonstrations; Cost of maternity and infancy work; Evaluating maternity and infancy work in county units; and Maternity and infancy nursing problems. Prominent obstetricians, leaders in public health, health officers, and nurses appeared on the program and led in the discussions of papers. The papers read have been printed in various journals and form part of the conference proceedings which have been published by the Children's Bureau. A limited number of copies are available for distribution, as are reprints of several of the papers read. (See pp. 132, 148.)

Through the courtesy of Dr. J. H. Mason Knox, jr., State director for Maryland, and the medical school of Johns Hopkins University the members of the conference spent a day in observation of maternity and infancy activities in Baltimore, Md., on January 14, 1927, the day following the conference. The arrangements included a visit to the bureau of child hygiene in the State department of health, attendance at pediatric clinics and at the lectures at Harriet Lane Home and Johns Hopkins Hospital by Dr. Paul G. Shipley and Dr. Wilburt C. Davison; a lecture on prenatal care by Dr. J. Whitridge Williams of Johns Hopkins Medical School, and a visit to the nutrition laboratories in the university's school of hygiene, with demonstrations by Dr. E. V. McCollom and Dr. Nina Simmonds.

The courtesy of the State director for Maryland in making the arrangements and extending hospitality to the members of the conference was thoroughly appreciated by the conference.

### BIRTH REGISTRATION

To aid promotion of birth registration in States which had registration campaigns within the year the Children's Bureau cooperated with the National Committee to Aid Completion of the Registration Areas before 1930. The director of the maternity and infant-hygiene division served as a member of this committee, and at the request of the United States Bureau of the Census and the State departments of health members of the Children's Bureau staff were detailed for varying periods to several of the States. One staff physician assisted in field work in South Carolina, another assisted in promoting the registration of births attended by negro midwives in the State of Georgia. A field nurse was detailed to Louisiana to assist in the birth-registration campaign. A field agent of the statistical division of the Children's Bureau staff was lent to Louisiana for field work and also assisted in promoting better registration in Mississippi. The consulting public-health nurse gave assistance in Colorado in organization for that State's registration campaign. Assistance to Arkansas begun in the previous fiscal year through the matching of State and Federal funds for birth-registration work was continued.

All members of the field staff of the maternity and infant-hygiene division of the bureau reported on the status of birth registration in the States they visited that were not in the area and assisted with plans and suggestions for future campaigns.

### SPECIAL ASSISTANCE TO STATES

From time to time States have requested assistance from the Children's Bureau for special pieces of work within the States. Such service has been rendered when possible by detailing members of the maternity and infant-hygiene division staff to assist for given periods in definite pieces of work. A statistician from the Children's Bureau also gave assistance in analysis of maternal and infant mortality data in Delaware, Indiana, Maryland, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, and Wisconsin.<sup>33</sup>

A Children's Bureau staff physician was detailed to the State of Oregon during the latter part of the fiscal year 1926 and early part of the fiscal year 1927 to assist in examining infants and preschool children at conferences. She spent five weeks in the State, conducted 23 conferences, and examined 726 infants and preschool children.

During a few weeks in 1927 a staff nurse assisted in organizing and conducting child-health conferences in Nebraska, continuing this work from the previous fiscal year. Local physicians examined the children, and local organizations of lay persons sponsored the conferences. The number of conferences held in the months immediately preceding the close of the fiscal year previous to the year under review was 54, in 34 counties. Late in the summer the staff nurse

<sup>33</sup> Assistance on such analyses for use in reporting the work of the fiscal year 1927 was given shortly after June 30, 1927, in Kentucky, North Carolina, and Virginia.

assisted in working out plans for continuing the conferences for preschool children through the services of the State itinerant nurses, local physicians, and organizations of women, and also in organizing classes in maternal and infant hygiene, these classes to be carried on by the State workers. This type of work has met with appreciative response from the physicians of the State as well as from the general public.

The city health department of Charleston, S. C., requested assistance with prenatal conferences. A staff physician gave some days to stimulating interest in the prenatal conferences in the department.

Kentucky requested the services of the consultant in obstetrics for a series of lectures on prenatal and obstetrical care before county medical societies. The consultant spent approximately six weeks in the State. When possible, two lectures were given before each medical group—one lecture on prenatal care and one on operative or other obstetrical procedures. Fourteen lectures were given before county medical societies; two were given before district medical societies each of which included 11 counties; and one was given before an obstetrical society. At these 17 lectures there was an attendance of more than 200 physicians. Two lectures were given to midwives with an attendance of 28 midwives. The consultant was invited to outline the plan of work before the State medical association, which passed a formal vote of approval. The lecturer had equipment to demonstrate some phases of delivery, and a bony pelvis and fetal doll were used in the demonstrations. The addresses covered different phases of obstetrics. At one meeting eclampsia was discussed; obstetrical deliveries was the subject of another lecture; and the use of pituitary extract was considered. The value of the lectures was enhanced by the excellent discussions that followed. In one meeting of physicians the establishment of a county hospital to assist in caring for maternity cases was suggested. The consultant gave a talk on phases of maternal care to an institute for public-health nurses, addressed a group of negro physicians in Tuskegee, Ala., gave a talk before the students of one college, and conferred with individual physicians and State officials.

During the year under review the Federal staff's work with midwives was limited to the State of Georgia. At the request of the State the negro woman physician on the staff was detailed to instruct Georgia negro midwives and to promote their registration of births. Her work covered six counties; 510 midwives were located; 298 received certificates following her courses of instruction, and Wassermann tests were made for nearly all of them. Following is a summary of the work done in each county:

Counties in Georgia	Midwives located	Midwives receiving certificates	Wassermann tests made	Positive reactions obtained	Average number of lessons in course	Sections having classes
Total.....	510	298	293	28	.....	29
Troupe.....	139	85	79	6	12	6
Coweta.....	89	47	51	5	7	5
Cobb.....	78	31	28	2	6	5
Ware.....	52	32	33	3	8	3
Lowndes.....	86	60	63	6	6	5
Glynn.....	56	40	39	6	7	5

Following the course a strong midwives' club was organized in each county, and the county health officer or county nurse assisted in maintaining the standards of midwifery the midwives had been taught in the courses given. Those who can not read nor write are given help in filling in birth certificates by the officers of the club or the county health department staff.

## FIELD SURVEYS AND STUDIES

### MATERNITY-HOME SURVEY

The division of child welfare in the Montana State Board of Health requested assistance in a survey of maternity homes in the State. A staff physician spent two weeks in Montana, making a survey and investigating small maternity homes, of which she visited 18. The majority were private homes with no equipment for maternity work.

### MATERNAL-MORTALITY STUDY AND SURVEY

At the conference of directors of State bureaus or divisions of child hygiene held in Washington in January, 1926, Dr. Robert L. De Normandie, chairman of the consulting obstetrical committee for the United States Children's Bureau, presented a plan for state-wide studies of maternal mortality. As a result of the discussion the Children's Bureau requested the consulting obstetrical committee to formulate schedules, instructions, and a plan of work.

The committee recommended that the study be made in States in which the State medical society would undertake to sponsor it and the State health department requested it, and schedules were prepared for collecting data on current maternal deaths. The plan adopted thus omitted mothers who do not die but who suffer unnecessary invalidism. Facts were to be taken from birth and death certificates filed in the State bureau of vital statistics, and further information was to be obtained from the physician or midwife attending the woman who died, the interviewer to be a competent and tactful physician. The information was to be collected on the schedules soon after the death of the mother, while the details were still fresh in the memory of the physician or midwife who had attended the case. The study was to be carried on for a period of two or three years at least.

During the year under review the State medical society of Kentucky requested that the study be made in that State, and the State medical societies of Virginia and Maryland indorsed the study. The public-health departments of these States asked the Children's Bureau to detail interviewers to them. Special personnel was secured, and a physician began work in Kentucky in February, 1927. In June work was started in Virginia, and a medical interviewer was secured to begin work in Maryland at the close of the fiscal year under review.<sup>34</sup>

<sup>34</sup> Since June 30, 1927, this study has been extended to Alabama, Maryland, Michigan, Minnesota, Nebraska, New Hampshire, Rhode Island, Oregon, Washington, and Wisconsin.



## RESEARCH AND PUBLICATIONS

## REFERENCES ON THE PHYSICAL GROWTH AND DEVELOPMENT OF THE NORMAL CHILD

An annotated bibliography entitled "References on the Physical Growth and Development of the Normal Child" was in press at the end of the year under review and was issued in October, 1927. Approximately 10,000 books and articles were examined with care, and the contents of about 2,500 giving the results of original research (up to July 1, 1926) were abstracted so that investigators can ascertain from the bibliography what material in the work of their predecessors will be of assistance to them. The following subjects are included: General growth in weight and height, growth and development of special parts of the body, adolescence and puberty, standards and methods of judging physical fitness in children.

## PROGRESS OF RICKETS STUDY

The three-year demonstration of the community control of rickets at New Haven conducted by the Children's Bureau in cooperation with the pediatric department of Yale University School of Medicine and the New Haven Department of Health was closed September 30, 1926.<sup>35</sup> The roentgenograms made have been reviewed carefully to insure that uniform methods of interpretation were used, and the records of physical examinations of the group of children given antirachitic treatment from infancy through 1 to 3 years of age have been made ready for statistical analysis in the Children's Bureau. Because of lack of standards as to what can be considered normal and because of uncertainty whether some characteristics in the bones of very young infants included in the study really were due to rickets or simply were evidences of normal rapid growth, it seemed advisable to attempt to establish a standard of normality. Therefore a two-month study was undertaken in Porto Rico to obtain a series of roentgenograms of infants born in a tropical country and known to live much of the time out of doors and in houses whose windows are unglazed. It was assumed that infants living under such conditions were receiving antirachitic treatment in a natural manner and that they would show bone growth as nearly normal as it would be possible to find. This study was completed in February, 1927, examinations having been made of approximately 600 Porto Rican infants 2 weeks to 2½ years old. The roentgenograms made will be valuable in the further interpretation of those taken in New Haven.

## PRENATAL LETTERS

A series of nine prenatal letters prepared by the medical members of the maternity and infant-hygiene division staff were submitted to the bureau's consulting obstetrical committee for revision and criticism, then mimeographed and sent to the States to be distributed by the State bureaus or divisions if they desired to use them. Several

<sup>35</sup> See A Demonstration of the Community Control of Rickets (Separate No. 4 from Proceedings of the Third Annual Conference of State Directors in Charge of the Local Administration of the Maternity and Infancy Act, 1926, U. S. Children's Bureau Publication No. 157, Washington, 1926).

States are now sending the letters to expectant mothers, and one State has issued them in pamphlet form. The letters emphasize the value of early consultation of a physician by the expectant mother and the importance of regular medical supervision during pregnancy. The diet and hygiene of pregnancy with special reference to elimination, and the preparation for the baby and for delivery are given attention in these letters.

#### LESSON OUTLINES

A series of outline lessons on the care of the preschool child for the use of self-directed study groups were prepared by one of the staff physicians and were sent later to the States in mimeographed form for use in class work. The demand for study material concerning maternity and infancy is continually increasing, and many States not having the personnel to prepare this welcomed the Children's Bureau material for study groups.

#### NEWS-LETTERS

News-letters were prepared in mimeographed form and sent at intervals to the State bureaus. The subjects included in the letters were scientific advancement, new publications, news from State bureaus, miscellaneous news, Federal maternity and infancy items, and foreign news.

#### OTHER PUBLICATIONS

A folder entitled "Keeping the Well Baby Well" was prepared for the bureau during the year. This presents in more attractive form and in sufficient detail to make it much more useful, the material contained in the dodger, *The Care of the Baby*, previously distributed by the bureau. The folder was issued in September, 1927. The bureau's bulletin *What Is Malnutrition?* was revised during the year and was issued in April, 1927. Dr. D. A. Thom, the author of the bureau's bulletin *Child Management*, wrote a new section (on enuresis) for that publication during the year, and a revised edition of the bulletin containing the new material was issued in November, 1927. Two of the bureau's dodgers were issued in revised form during the year: *Books and Pamphlets on Child Care* (revised September 1, 1926) and *Is Your Child's Birth Recorded?* (revised December 1, 1926).

The Proceedings of the fourth annual conference of directors of State bureaus administering the maternity and infancy act were issued, and six of the papers published in this bulletin were also made available separately as follows: The problem of compulsory notification of puerperal septicemia; The county health organization in relation to maternity and infancy work and its permanency; Evaluation of maternity and infancy work in a generalized program; Breast-feeding demonstrations; Foundation for permanent child-hygiene programs in New Hampshire; and Standards for training public-health nurses.

#### DISTRIBUTION OF PUBLICATIONS

Publications of the Children's Bureau relating to the care and hygiene of mothers, infants, and preschool children are distributed

free to persons requesting single copies, and limited numbers are supplied to the States for free distribution. Definite monthly allotments of Prenatal Care, Infant Care, and Child Care are sent to the States, and many States buy additional quantities from the Government Printing Office. The number of copies of the more widely used publications distributed from the bureau in the fiscal year ended June 30, 1927, was as follows:

*Bulletins.*—Prenatal Care, 166,399; Infant Care, 335,235; Child Care, 60,520<sup>36</sup>; Child Management, 63,912.<sup>37</sup>

*Folders.*—Minimum Standards of Prenatal Care (revised), 37,179; Why Drink Milk? 29,052; What Builds Babies? 41,542; Sunlight for Babies, 78,060; Breast Feeding, 53,965.

*Dodgers.*—Is Your Child's Birth Recorded? 18,371; Feeding the Child, 43,022; What Do Growing Children Need? 43,862.

*Small charts.*—Baby's Daily Time Cards, 22,000 sets.

For a list of the Children's Bureau publications bearing upon maternal, infant, and child hygiene and welfare see Appendix D, pages 148 to 150.

#### MOTION PICTURES AND EXHIBIT MATERIAL

The films and exhibit material of the Children's Bureau may be purchased or borrowed. (See p. 150.)

The fifth of the bureau's films was in preparation during the year under review. This is a one-reel film entitled "The Best-Fed Baby," which shows the importance of breast feeding. The one-reel film, "Sun Babies," shows how sun baths will cure and also prevent rickets. "Our Children" and "Well Born" are two-reel films; the former (made about 10 years ago) deals with child-health conferences, the latter (made about 5 years ago) shows the need for prenatal care and the essentials of such care. "Posture" is a two-reel film, either of the two reels being suitable for use alone also; the first is a general introduction suitable for parents and children, the second deals more directly with the purpose and method of the exercises that promote good posture.

The Children's Bureau is producing a series of film slides on child welfare. During the year under review a film slide entitled "The Preschool Days of Betty Jones" was in preparation. This shows the care of the preschool child. "The Healthy Baby" shows the care of the baby to 2 years of age. "Trails That Lead to Mothers and Babies" illustrates the work done under the maternity and infancy act. "Rickets" shows the effects of this disease and how it is prevented and cured. The negatives are deposited with the producing laboratories, from which they may be purchased.

Lantern slides on "The Care of the Baby" and on "Infant and Child Welfare" are included among the bureau's exhibit material.

A new model dealing with proper posture for children at play and in school was added to the models available for loan (of the method

<sup>36</sup> As the special printing fund available for popular bulletins in 1926 was not included in the 1927 appropriation, the curtailment necessary was made by restricting the distribution of Child Care, as this bulletin was being revised.

<sup>37</sup> In the fiscal year ended June 30, 1927, the orders for sale by the Government Printing Office were as follows: Prenatal Care, 51,000; Infant Care, 113,500; Child Care, 65,000; Child Management, 50,500.

of giving sun baths, of a children's nursery, and of a maternity and child-health center).

About 75 new wall panels were added to the supply of panels and posters, in colors and in black and white, that are available for loan.

Exhibits have been sent on request to National, State, and local agencies, including the American Medical Association and other medical societies, boards of health, public-health organizations, social-service organizations, child-welfare societies, educational institutions, fraternal societies, fairs and expositions, women's clubs, religious organizations, the American Red Cross, Young Men's and Young Women's Christian Associations, Boy Scout troops, and Camp Fire Girls. A total of 472 exhibit shipments were made during the year, including 503 reels of motion pictures, 50 strips of film slides and 21 projectors, 1,556 lantern slides, 24 models, and 2,985 wall panels. At the close of the year under review 31 requests for future loans were on file, some of the material being scheduled for exhibits in November and December, 1927.



## APPENDIXES

### APPENDIX A.—TEXT OF THE ACT FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY AND OF SUPPLEMENTARY LEGISLATION

[S. 1039—Sheppard-Towner Act; Public 97—67th Congress; 42 Stat. 224]

An Act For the promotion of the welfare and hygiene of maternity and infancy, and for other purposes

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That there is hereby authorized to be appropriated annually, out of any money in the Treasury not otherwise appropriated, the sums specified in section 2 of this Act, to be paid to the several States for the purpose of cooperating with them in promoting the welfare and hygiene of maternity and infancy as hereinafter provided.

SEC. 2. For the purpose of carrying out the provisions of this Act, there is authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, for the current fiscal year \$480,000, to be equally apportioned among the several States, and for each subsequent year, for the period of five years, \$240,000, to be equally apportioned among the several States in the manner hereinafter provided: *Provided,* That there is hereby authorized to be appropriated for the use of the States, subject to the provisions of this Act, for the fiscal year ending June 30, 1922, an additional sum of \$1,000,000, and annually thereafter, for the period of five years, an additional sum not to exceed \$1,000,000: *Provided further,* That the additional appropriations herein authorized shall be apportioned \$5,000 to each State and the balance among the States in the proportion which their population bears to the total population of the States of the United States, according to the last preceding United States census: *And provided further,* That no payment out of the additional appropriation herein authorized shall be made in any year to any State until an equal sum has been appropriated for that year by the legislature of such State for the maintenance of the services and facilities provided for in this act.

So much of the amount apportioned to any State for any fiscal year as remains unpaid to such State at the close thereof shall be available for expenditures in that State until the close of the succeeding fiscal year.

SEC. 3. There is hereby created a Board of Maternity and Infant Hygiene, which shall consist of the Chief of the Children's Bureau, the Surgeon General of the United States Public Health Service, and the United States Commissioner of Education, and which is hereafter designated in this Act as the Board. The Board shall elect its own chairman and perform the duties provided for in this Act.

The Children's Bureau of the Department of Labor shall be charged with the administration of this Act, except as herein otherwise provided, and the Chief of the Children's Bureau shall be the executive officer. It shall be the duty of the Children's Bureau to make or cause to be made such studies, investigations, and reports as will promote the efficient administration of this Act.

SEC. 4. In order to secure the benefits of the appropriations authorized in section 2 of this Act, any State shall, through the legislative authority thereof, accept the provisions of this Act and designate or authorize the creation of a State agency with which the Children's Bureau shall have all necessary powers to cooperate as herein provided in the administration of the provisions of this Act: *Provided,* That in any State having a child-welfare or child-hygiene division in its State agency of health, the said State agency of health shall administer the provisions of this Act through such divisions. If the legislature of any State has not made provision for accepting the provisions of this Act the

governor of such State may in so far as he is authorized to do so by the laws of such State accept the provisions of this Act and designate or create a State agency to cooperate with the Children's Bureau until six months after the adjournment of the first regular session of the legislature in such State following the passage of this Act.

SEC. 5. So much, not to exceed 5 per centum, of the additional appropriations authorized for any fiscal year under section 2 of this act, as the Children's Bureau may estimate to be necessary for administering the provisions of this act, as herein provided, shall be deducted for that purpose, to be available until expended.

SEC. 6. Out of the amounts authorized under section 5 of this act the Children's Bureau is authorized to employ such assistants, clerks, and other persons in the District of Columbia and elsewhere, to be taken from the eligible lists of the Civil Service Commission, and to purchase such supplies, material, equipment, office fixtures, and apparatus, and to incur such travel and other expenses as it may deem necessary for carrying out the purposes of this act.

SEC. 7. Within 60 days after any appropriation authorized by this act has been made, the Children's Bureau shall make the apportionment herein provided for and shall certify to the Secretary of the Treasury the amount estimated by the bureau to be necessary for administering the provisions of this act, and shall certify to the Secretary of the Treasury and to the treasurers of the various States the amount which has been apportioned to each State for the fiscal year for which such appropriation has been made.

SEC. 8. Any State desiring to receive the benefits of this act shall, by its agency described in section 4, submit to the Children's Bureau detailed plans for carrying out the provisions of this act within such State, which plans shall be subject to the approval of the board: *Provided*, That the plans of the States under this act shall provide that no official, or agent, or representative in carrying out the provisions of this act shall enter any home or take charge of any child over the objection of the parents, or either of them, or the person standing in loco parentis or having custody of such child. If these plans shall be in conformity with the provisions of this act and reasonably appropriate and adequate to carry out its purposes they shall be approved by the board and due notice of such approval shall be sent to the State agency by the chief of the Children's Bureau.

SEC. 9. No official, agent, or representative of the Children's Bureau shall by virtue of this act have any right to enter any home over the objection of the owner thereof, or to take charge of any child over the objection of the parents, or either of them, or of the person standing in loco parentis or having custody of such child. Nothing in this act shall be construed as limiting the power of a parent or guardian or person standing in loco parentis to determine what treatment or correction shall be provided for a child or the agency or agencies to be employed for such purpose.

SEC. 10. Within 60 days after any appropriation authorized by this act has been made, and as often thereafter while such appropriation remains unexpended as changed conditions may warrant, the Children's Bureau shall ascertain the amounts that have been appropriated by the legislatures of the several States accepting the provisions of this act and shall certify to the Secretary of the Treasury the amount to which each State is entitled under the provisions of this act. Such certificate shall state (1) that the State has, through its legislative authority, accepted the provisions of this act and designated or authorized the creation of an agency to cooperate with the Children's Bureau, or that the State has otherwise accepted this act, as provided in section 4 hereof; (2) the fact that the proper agency of the State has submitted to the Children's Bureau detailed plans for carrying out the provisions of this act, and that such plans have been approved by the board; (3) the amount, if any, that has been appropriated by the legislature of the State for the maintenance of the services and facilities of this act, as provided in section 2 hereof; and (4) the amount to which the State is entitled under the provisions of this act. Such certificate, when in conformity with the provisions hereof, shall, until revoked as provided in section 12 hereof, be sufficient authority to the Secretary of the Treasury to make payment to the State in accordance therewith.

SEC. 11. Each State agency cooperating with the Children's Bureau under this act shall make such reports concerning its operations and expenditures as shall be prescribed or requested by the bureau. The Children's Bureau may, with the approval of the board, and shall, upon request of a majority of

the board, withhold any further certificate provided for in section 10 hereof whenever it shall be determined as to any State that the agency thereof has not properly expended the money paid to it or the moneys herein required to be appropriated by such State for the purposes and in accordance with the provisions of this act. Such certificate may be withheld until such time or upon such conditions as the Children's Bureau, with the approval of the board, may determine; when so withheld the State agency may appeal to the President of the United States who may either affirm or reverse the action of the bureau with such directions as he shall consider proper: *Provided*, That before any such certificate shall be withheld from any State, the chairman of the board shall give notice in writing to the authority designated to represent the State, stating specifically wherein said State has failed to comply with the provisions of this act.

SEC. 12. No portion of any moneys apportioned under this act for the benefit of the States shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building or buildings or equipment, or for the purchase or rental of any buildings or lands, nor shall any such moneys or moneys required to be appropriated by any State for the purposes and in accordance with the provisions of this act be used for the payment of any maternity or infancy pension, stipend, or gratuity.

SEC. 13. The Children's Bureau shall perform the duties assigned to it by this act under the supervision of the Secretary of Labor, and he shall include in his annual report to Congress a full account of the administration of this act and expenditures of the moneys herein authorized.

SEC. 14. This act shall be construed as intending to secure to the various States control of the administration of this act within their respective States, subject only to the provisions and purposes of this act.

Approved, November 23, 1921.

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[Public 35—68th Congress; 43 Stat. 17]

An Act To extend the provisions of certain laws to the Territory of Hawaii.

\* \* \* \* \*

SEC. 3. The Territory of Hawaii shall be entitled to share in the benefits of the act entitled "An act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, and any act amendatory thereof or supplementary thereto, upon the same terms and conditions as any of the several States. For the fiscal year ending June 30, 1925, there is authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$13,000 to be available for apportionment under such act to the Territory, and annually thereafter such sum as would be apportioned to the Territory if such act had originally included the Territory.

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Approved, March 10, 1924.

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[Public 566—69th Congress; 44 Stat. 1024]

An Act To authorize for the fiscal years ending June 30, 1928, and June 30, 1929, appropriations for carrying out the provisions of the Act entitled "An Act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That section 2 of the act entitled "An act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, is amended by striking out the words "for the period of five years" wherever such words appear in such section and inserting in lieu thereof the words "for the period of seven years."

SEC. 2. That said act entitled "An act for the promotion of the welfare and hygiene of maternity and infancy, and for other purposes," approved November 23, 1921, shall, after June 30, 1929, be of no force and effect.

Approved, January 22, 1927.

## APPENDIX B.—ADMINISTRATIVE AGENCIES AND OFFICERS

*State administrative agencies and names of the executive officers for the administration of the act for the welfare and hygiene of maternity and infancy (as of June 30, 1927)*

State (and Territory)	Administrative agency and department	Director
Alabama.....	Bureau of child hygiene and public-health nursing, State board of health (Montgomery).	Jessie L. Marriner, R. N.
Arizona.....	Child-hygiene division, State board of health (Phoenix)	Mrs. Charles R. Howe.
Arkansas.....	Bureau of child hygiene, State board of health (Little Rock).	Dr. C. W. Garrison. <sup>1</sup>
California.....	Bureau of child hygiene, State board of health (San Francisco).	Dr. Ellen S. Stadtmuller.
Colorado.....	Child-welfare bureau, State department of public instruction (Denver).	Mrs. E. N. Mathews. <sup>2</sup>
Connecticut <sup>3</sup> .....	Bureau of child hygiene, State department of health (Hartford).	Dr. A. Elizabeth Ingraham.
Delaware.....	Division of child hygiene, State board of health (Dover)	Dr. Cleland A. Sargent.
Florida.....	Bureau of child hygiene and public-health nursing, State board of health (Jacksonville).	Mrs. Laurie Jean Reid, R. N.
Georgia.....	Division of child hygiene, State board of health (Atlanta)	Dr. Joe P. Bowdoin.
Hawaii.....	Division of maternity and infancy, Territorial board of health (Honolulu).	Dr. V. B. Appleton.
Idaho.....	Bureau of child hygiene, State department of public welfare (Boise).	Dr. Ralph M. Fouch.
Illinois <sup>3</sup> .....	Division of child hygiene and public-health nursing, State department of public health (Springfield).	Dr. Grace S. Wightman.
Indiana.....	Division of infant and child hygiene, State board of health (Indianapolis).	Dr. Ada E. Schweitzer.
Iowa.....	Division of maternity and infant hygiene, State University of Iowa (Iowa City).	Edward H. Lauer, Ph. D.
Kansas.....	Division of child hygiene, State board of health (Topeka)	Dr. J. C. Montgomery.
Kentucky.....	Bureau of maternal and child health, State board of health (Louisville).	Dr. Annie S. Veech.
Louisiana.....	Bureau of child hygiene, State department of health (New Orleans).	Agnes Morris.
Maine.....	Division of public-health nursing and child hygiene, State department of health (Augusta).	Edith Soule, R. N.
Maryland.....	Bureau of child hygiene, State department of health (Baltimore).	Dr. J. H. Mason Knox, jr. <sup>4</sup>
Massachusetts <sup>3</sup> .....	Division of hygiene, State department of public health (Boston).	Dr. Merrill E. Champion.
Michigan.....	Bureau of child hygiene and public-health nursing, State department of health (Lansing).	Dr. Lillian R. Smith.
Minnesota.....	Division of child hygiene, State department of health (Minneapolis).	Dr. Ruth E. Boynton.
Mississippi.....	Bureau of child hygiene and public-health nursing, State board of health (Jackson).	Dr. F. J. Underwood. <sup>1</sup>
Missouri.....	Division of child hygiene, State board of health (Jefferson City).	Dr. Irl Brown Krause.
Montana.....	Division of child welfare, State board of health (Helena)	Dr. Hazel Dell Bonness.
Nebraska.....	Division of child hygiene, bureau of health, State department of public welfare (Lincoln).	Louise M. Murphy, R. N.
Nevada.....	Child-welfare division, State board of health (Reno)	Mrs. S. H. Wheeler. <sup>2</sup>
New Hampshire.....	Division of maternity, infancy, and child hygiene, State board of health (Concord).	Elena M. Crough, R. N.
New Jersey.....	Bureau of child hygiene, State department of health (Trenton).	Dr. Julius Levy. <sup>5</sup>
New Mexico.....	Division of child hygiene and public-health nursing, bureau of public health, State department of public welfare (Santa Fe).	Dorothy R. Anderson, R. N. <sup>4</sup>
New York.....	Division of maternity, infancy, and child hygiene, State department of health (Albany).	Dr. Elizabeth M. Gardiner.
North Carolina.....	Bureau of maternity and infancy, State board of health (Raleigh).	Dr. H. A. Taylor.
North Dakota.....	Division of child hygiene and public-health nursing, State department of public health (Bismarck).	Dr. Maysil M. Williams.
Ohio.....	Division of child hygiene, State department of health (Columbus).	Dr. H. E. Kleinschmidt. <sup>6</sup>

<sup>1</sup> State health officer serving.

<sup>2</sup> Executive secretary.

<sup>3</sup> State not cooperating.

<sup>4</sup> Chief.

<sup>5</sup> Consultant.

<sup>6</sup> Resigned Jan. 1, 1927.



*State administrative agencies, etc.*—Continued

State (and Territory)	Administrative agency and department	Director
Oklahoma.....	Bureau of maternity and infancy, State department of public health (Oklahoma City).	Dr. Lucile S. Blachly.
Oregon.....	Bureau of child hygiene, State board of health (Portland).	Glendora M. Blakely, R. N. <sup>7</sup>
Pennsylvania.....	Preschool division, bureau of child health, State department of health (Harrisburg).	Dr. Mary Riggs Noble. <sup>4</sup>
Rhode Island.....	Division of child welfare, State board of health (Providence).	Dr. Marion A. Gleason.
South Carolina.....	Bureau of child hygiene and public-health nursing, State board of health (Columbia).	Ada Taylor Graham, R. N.
South Dakota.....	Division of child hygiene, State board of health (Waubay).	Florence E. Walker, R. N.
Tennessee.....	Division of child hygiene and public-health nursing, State department of public health (Nashville).	Dr. W. J. Breeding.
Texas.....	Bureau of child hygiene, State department of health, (Austin).	Dr. H. N. Barnett.
Utah.....	Bureau of child hygiene, State board of health (Salt Lake City).	Dr. H. Y. Richards.
Vermont.....	State department of public health (Burlington)	Dr. Charles F. Dalton. <sup>1</sup>
Virginia.....	Bureau of child welfare, State board of health (Richmond).	Dr. Mary E. Brydon.
Washington.....	Division of child hygiene, State department of health (Seattle).	Ella Erikson, R. N.
West Virginia.....	Division of child hygiene and public-health nursing, State department of health (Charleston).	Mrs. Jean T. Dillon, R. N.
Wisconsin.....	Bureau of child welfare and public-health nursing, State board of health (Madison).	Dr. Cora S. Allen.
Wyoming.....	Division of maternal and infant welfare and child hygiene, State department of public health (Cheyenne).	Dr. G. M. Anderson. <sup>1</sup>

<sup>1</sup> State health officer serving.<sup>4</sup> Chief.<sup>7</sup> State advisory nurse.

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## APPENDIX C.—MATERNAL AND INFANT MORTALITY RATES

TABLE I.—*Trend of maternal mortality in urban and rural districts of the United States birth-registration area, by States, 1915-1926*<sup>1</sup>

State	Maternal mortality rates per 10,000 live births <sup>2</sup>											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Area.....	60.8	62.2	66.2	91.6	73.7	79.9	68.2	66.4	66.5	65.6	64.7	65.6
Urban.....	64.1	65.1	70.0	96.0	78.8	85.6	77.1	73.2	73.8	73.5	73.5	73.9
Rural.....	55.3	57.3	62.3	87.2	68.8	74.1	59.4	59.5	58.7	57.6	55.5	56.7
Arizona.....												102.5
Urban.....												107.6
Rural.....												100.6
California.....					79.8	76.9	68.3	71.9	67.5	59.2	60.1	56.4
Urban.....					88.1	85.5	78.1	77.1	70.9	62.8	64.9	58.7
Rural.....					68.7	65.1	55.1	64.9	62.6	54.0	53.1	53.0
Connecticut.....	56.1	48.9	51.0	74.9	62.2	68.0	52.8	57.0	57.3	57.1	49.1	57.6
Urban.....	63.0	51.1	55.2	73.5	68.8	74.7	57.7	61.6	61.6	60.3	54.9	59.5
Rural.....	36.0	42.1	36.9	79.5	41.6	37.6	31.5	37.3	38.5	42.9	21.5	47.9
Delaware.....							63.2	65.8	83.7	76.9	77.0	92.9
Urban.....							101.5	60.5	90.0	82.6	102.3	109.4
Rural.....							20.8	71.7	77.1	70.8	51.5	76.3
Florida.....										121.4	121.4	106.9
Urban.....										108.8	130.9	101.4
Rural.....										126.2	117.2	109.7
Idaho.....												56.9
Urban.....												75.1
Rural.....												54.5
Illinois.....								63.2	64.1	61.6	58.3	65.0
Urban.....								66.9	71.0	69.7	64.8	69.8
Rural.....								57.3	53.2	48.1	46.9	56.1
Indiana.....			72.5	103.9	84.2	87.5	68.6	66.0	64.9	58.1	60.5	64.8
Urban.....			87.1	124.3	102.5	104.8	85.7	84.1	77.4	66.0	80.2	81.1
Rural.....			64.1	91.9	73.0	75.2	56.5	53.2	55.2	51.5	43.9	50.8
Iowa.....										59.8	55.9	60.4
Urban.....										79.1	81.3	87.8
Rural.....										52.2	45.3	48.8
Kansas.....			75.9	114.3	82.5	84.3	64.3	75.9	68.4	62.7	65.4	69.7
Urban.....			92.0	151.7	107.5	101.9	85.1	107.7	104.8	82.6	83.2	93.1
Rural.....			72.4	105.8	76.4	78.6	57.6	64.8	55.0	54.9	58.4	60.7
Kentucky.....			60.1	80.0	63.2	64.4	62.7	60.7	59.6	61.8	59.5	58.4
Urban.....			98.4	119.0	91.8	93.9	93.4	96.6	80.4	88.4	82.6	74.8
Rural.....			54.6	74.3	59.0	59.4	57.5	54.3	55.5	56.5	54.5	54.6
Maine.....	67.9	78.0	67.3	85.7	85.8	84.8	74.0	75.8	87.0	82.3	72.2	66.9
Urban.....	82.4	81.1	94.0	97.4	91.7	103.6	100.9	102.4	9.78	125.6	102.5	106.6
Rural.....	63.2	76.9	58.7	81.8	83.8	77.2	62.9	64.4	82.1	63.2	58.8	49.7
Maryland.....		63.9	58.0	95.3	83.6	75.7	66.5	59.4	60.0	65.5	58.2	57.8
Urban.....		75.7	72.4	94.1	89.7	77.5	69.7	60.0	63.0	71.5	74.2	69.4
Rural.....		52.9	63.7	96.4	75.7	73.2	62.5	58.6	56.0	57.8	37.0	42.4
Massachusetts.....	57.2	59.8	65.0	92.2	70.6	74.6	65.2	67.8	62.9	64.7	63.3	64.2
Urban.....	59.6	63.7	70.4	96.0	74.8	78.1	68.2	73.0	67.6	69.1	66.3	66.8
Rural.....	46.8	41.8	40.2	74.5	50.5	54.4	47.6	37.3	33.7	38.1	44.9	47.4
Michigan.....	66.8	68.2	74.2	85.9	77.2	93.2	68.5	68.5	70.3	65.3	63.7	67.2
Urban.....	72.9	72.8	76.3	96.6	83.2	97.7	71.1	73.0	82.2	72.8	71.7	77.4
Rural.....	61.8	64.0	72.3	75.5	71.0	87.5	65.5	63.2	54.5	55.2	52.6	51.6

<sup>1</sup> Source: U. S. Bureau of the Census.

<sup>2</sup> Deaths of women from causes associated with pregnancy and childbirth.

TABLE I.—Trend of maternal mortality in urban and rural districts, etc.—Contd.

State	Maternal mortality rates per 10,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Minnesota	51.9	54.6	55.7	78.3	67.4	78.5	57.2	49.5	60.2	49.7	52.8	57.4
Urban	54.3	62.2	59.7	87.6	64.4	90.2	80.8	54.1	77.2	57.7	59.7	75.9
Rural	50.8	51.0	53.7	73.9	68.8	72.2	44.2	46.8	49.8	44.6	48.4	45.5
Mississippi							95.3	83.2	88.1	95.1	98.3	78.7
Urban							179.8	202.1	161.9	149.4	163.1	129.7
Rural							88.3	72.7	81.6	89.6	92.1	73.6
Montana								79.1	75.5	65.6	81.1	80.2
Urban								85.9	85.2	94.5	79.6	113.9
Rural								76.9	71.9	55.5	81.6	68.5
Nebraska						71.5	65.8	58.0	57.9	63.2	57.1	66.5
Urban						101.4	105.4	89.9	101.1	89.5	89.2	104.8
Rural						63.1	54.6	49.1	44.4	54.6	46.7	54.2
New Hampshire	61.0	72.4	70.0	77.8	79.7	71.4	62.2	64.5	74.1	61.3	71.2	75.7
Urban	69.3	75.9	67.5	74.5	87.2	76.4	62.8	70.3	63.5	51.9	82.9	80.1
Rural	53.0	69.1	72.7	81.5	71.6	66.1	61.6	58.5	85.9	71.4	58.9	70.9
New Jersey							58.5	64.1	57.0	62.3	64.3	57.6
Urban							68.3	70.9	64.5	73.1	74.9	64.9
Rural							34.7	48.3	39.5	37.3	39.8	41.1
New York	58.6	54.3	57.4	79.7	62.4	68.7	62.7	60.2	57.3	58.6	59.6	56.5
Urban	58.8	54.1	56.0	79.1	63.9	68.2	65.1	62.2	59.0	62.0	62.9	59.1
Rural	57.9	54.8	63.9	82.6	55.9	71.0	52.7	51.7	50.2	43.5	45.1	44.9
North Carolina			82.4	107.9	92.6	100.0	73.5	79.5	79.6	77.5	86.6	88.3
Urban			117.6	186.7	167.6	168.0	119.8	128.5	114.1	124.2	131.5	153.8
Rural			80.2	103.0	87.5	91.7	67.8	73.1	74.6	70.0	78.9	76.8
North Dakota											56.9	61.5
Urban											99.9	62.0
Rural											51.5	39.4
Ohio			71.3	96.8	73.8	79.5	72.2	66.2	71.5	64.1	67.6	67.1
Urban			80.9	104.5	83.3	91.3	84.9	78.0	83.7	76.2	81.6	80.7
Rural			59.4	87.3	62.0	63.0	55.3	50.7	54.1	46.7	47.1	46.6
Oregon						101.2	94.4	74.3	82.8	68.7	64.9	72.3
Urban						123.9	82.4	73.1	91.6	79.2	71.7	66.2
Rural						87.2	102.8	75.2	76.8	61.9	59.6	54.0
Pennsylvania	64.3	70.1	64.9	104.6	68.2	77.6	68.3	62.2	65.9	63.3	64.2	63.7
Urban	74.1	82.4	75.4	111.1	81.9	88.9	84.4	75.8	82.0	82.1	81.8	80.4
Rural	55.2	58.6	54.6	98.3	54.6	65.5	52.2	48.7	49.6	44.2	46.5	46.7
Rhode Island	66.2	58.1	63.5	98.1	( <sup>3</sup> )	( <sup>3</sup> )	71.0	55.2	63.0	63.4	52.1	59.6
Urban	72.8	63.2	69.7	104.1			76.3	57.8	70.4	66.9	58.3	62.0
Rural	36.0	36.1	35.7	69.8			39.0	41.2	19.1	42.3	14.6	43.9
South Carolina						111.6	122.0	98.1	106.8	97.1	107.8	( <sup>3</sup> )
Urban						170.3	163.0	177.7	141.4	140.3	177.9	( <sup>3</sup> )
Rural						106.4	117.3	88.4	102.4	91.8	99.5	( <sup>3</sup> )
Utah			59.4	86.3	83.6	79.1	72.6	55.5	49.8	45.1	51.7	48.6
Urban			67.8	106.4	114.2	112.7	92.7	65.6	71.5	59.4	76.9	69.8
Rural			56.1	78.0	69.9	62.4	62.7	50.3	38.2	37.0	37.5	36.8
Vermont	61.2	78.5	63.6	79.9	79.6	70.2	73.1	74.5	69.6	81.0	67.9	67.2
Urban	51.9	72.2	51.3	50.7	83.2	82.7	97.6	84.5	133.9	90.4	137.9	65.1
Rural	62.8	79.7	65.8	85.4	79.0	67.7	68.7	74.6	57.0	78.9	53.2	67.6
Virginia			81.8	107.0	82.6	86.5	70.0	71.8	74.4	65.2	70.1	79.8
Urban			130.3	161.1	92.1	133.0	113.3	111.9	99.5	100.4	95.2	122.8
Rural			70.9	94.5	80.0	73.8	58.7	61.2	67.4	55.5	63.2	67.3
Washington			73.7	98.5	86.0	92.0	77.7	78.8	66.5	70.9	60.2	75.0
Urban			86.2	103.6	100.6	99.0	86.7	84.4	70.2	85.9	69.3	89.2
Rural			63.4	93.8	71.7	84.6	69.0	73.3	62.7	55.1	50.1	59.7
West Virginia											63.3	70.6
Urban											117.7	129.5
Rural											50.8	57.4

<sup>3</sup> Dropped from the birth-registration area.

TABLE I.—Trend of maternal mortality in urban and rural districts, etc.—Contd.

State	Maternal mortality rates per 10,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Wisconsin			57.3	59.6	48.0	67.3	58.1	55.8	58.1	60.5	52.3	59.6
Urban			58.1	68.8	62.1	82.3	73.9	66.8	69.5	66.9	63.0	71.1
Rural			56.9	54.4	39.8	57.8	48.2	48.9	50.3	55.8	44.1	50.3
Wyoming								71.3	72.7	97.6	95.2	93.4
Urban								110.6	113.5	126.2	139.3	58.5
Rural								62.0	61.6	89.9	83.6	101.9
District of Columbia	69.7	101.4	85.5	90.7	85.6	88.4	101.3	70.5	101.0	121.8	86.7	77.4

TABLE II.—Trend of maternal mortality, by color, in the United States birth-registration area and in States having 2,000 or more colored births annually during the period 1921 to 1925; 1915-1926<sup>1</sup>

State	Maternal mortality rates per 10,000 live births <sup>2</sup>											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Area	60.8	62.2	66.2	91.6	73.7	79.9	68.2	66.4	66.5	65.6	64.7	65.6
White	60.1	60.8	63.2	88.9	69.6	76.0	64.4	62.8	62.6	60.7	60.3	61.9
Colored	105.6	117.9	117.7	139.3	124.4	128.1	107.7	106.8	109.5	117.9	116.2	107.1
California					79.8	76.9	68.3	71.9	67.5	59.2	60.1	56.4
White					82.4	78.2	70.7	72.8	68.8	56.7	59.6	56.4
Colored					56.7	65.0	45.1	63.1	53.6	88.5	65.8	56.1
Florida									121.4	121.4	106.9	
White									90.0	102.2	90.4	
Colored									186.9	163.4	148.5	
Illinois								63.2	64.1	61.6	58.3	65.0
White								61.8	61.6	59.5	56.4	63.2
Colored								111.6	137.5	108.8	100.3	104.9
Kentucky			60.1	80.0	63.2	64.4	62.7	60.7	59.6	61.8	59.5	58.4
White			56.4	75.0	58.5	59.7	56.7	53.9	54.2	57.0	53.6	54.9
Colored			108.2	153.8	125.0	130.4	147.7	185.0	153.5	130.7	138.0	106.2
Maryland		63.9	68.0	95.3	83.6	75.7	66.5	59.4	60.0	65.5	58.2	57.8
White		56.0	61.0	85.8	76.1	65.9	59.5	53.5	54.3	56.6	50.5	47.4
Colored		98.0	97.8	138.1	115.0	118.3	96.1	84.3	83.0	101.5	89.0	98.3
Mississippi								83.2	88.1	95.1	98.3	78.7
White								64.8	65.5	65.1	66.6	65.2
Colored								100.5	109.5	125.5	128.7	91.6
New Jersey								64.1	57.0	62.3	64.3	57.6
White								61.6	55.0	59.2	62.7	55.8
Colored								119.3	96.6	117.1	90.9	84.0
New York	58.6	54.3	57.4	79.7	62.4	68.7	62.7	60.2	57.3	58.6	59.6	56.5
White	58.1	53.6	56.5	79.1	60.9	67.1	60.9	59.3	56.5	57.5	58.1	54.3
Colored	97.2	96.3	118.3	114.0	140.7	142.1	139.4	97.2	85.2	93.1	101.6	116.9
North Carolina			82.4	107.9	92.6	100.0	73.5	79.5	79.6	77.5	86.6	88.3
White			68.1	94.0	82.0	86.2	61.0	70.5	67.3	65.5	68.0	71.4
Colored			114.8	139.0	117.6	132.2	101.8	99.4	107.0	103.8	127.9	125.7
Ohio			71.3	96.8	73.8	79.5	72.2	66.2	71.5	64.1	67.6	67.1
White			69.8	95.7	72.1	78.2	70.6	63.8	68.0	62.2	64.5	64.4
Colored			136.0	138.2	126.4	120.3	116.0	132.9	158.2	101.8	129.6	115.8
Pennsylvania	64.3	70.1	64.9	104.6	68.2	77.6	68.3	62.2	65.9	63.3	64.2	63.7
White	63.3	69.1	63.6	102.9	65.5	76.0	67.4	61.2	64.6	61.0	62.7	61.5
Colored	112.2	118.7	118.6	174.7	157.9	130.6	97.7	94.0	100.9	114.7	97.9	109.2
South Carolina					111.6	122.0	98.1	106.8	97.1	107.8	(3)	(9)
White					78.1	89.9	77.9	85.5	74.1	75.9		
Colored					144.2	154.0	118.1	128.0	121.8	140.8		

<sup>1</sup> Source: U. S. Bureau of the Census.<sup>2</sup> Deaths of mothers from causes associated with pregnancy and childbirth.<sup>3</sup> Dropped from the birth-registration area.



TABLE II.—*Trend of maternal mortality, by color, etc.—Continued.*

State	Maternal mortality rates per 10,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Virginia.....			81.8	107.0	82.6	86.5	70.0	71.8	74.4	65.2	70.1	79.8
White.....			64.4	96.0	66.0	75.4	56.9	58.3	59.7	50.1	52.6	71.2
Colored.....			120.6	131.8	118.7	110.9	99.4	101.7	107.8	99.6	109.7	99.6
West Virginia.....											63.3	70.6
White.....											59.6	66.1
Colored.....											125.3	139.9
District of Columbia.....	69.7	101.4	85.5	90.7	85.6	88.4	101.3	70.5	101.0	121.8	86.7	77.4
White.....	56.1	76.3	59.0	78.1	67.8	66.5	98.6	56.1	89.3	91.7	60.8	64.4
Colored.....	99.4	157.5	147.7	126.1	131.6	143.8	107.7	105.7	129.5	189.6	143.3	104.9

TABLE III.—*Trend of infant mortality in urban and rural districts of the United States birth-registration area, by States; 1915-1926*<sup>1</sup>

State	Deaths of infants under 1 year of age per 1,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Area.....	100	101	94	101	87	86	76	76	77	71	72	73
Urban.....	103	104	100	108	89	91	78	80	78	72	73	74
Rural.....	94	97	88	94	84	81	74	72	76	69	70	72
Arizona.....												121
Urban.....												111
Rural.....												125
California.....					70	74	66	71	73	67	69	63
Urban.....					64	68	60	64	66	62	62	56
Rural.....					79	83	75	81	83	74	79	72
Connecticut.....	107	101	94	107	86	92	73	77	77	69	73	72
Urban.....	103	101	93	106	86	93	72	77	77	67	70	70
Rural.....	119	101	96	112	87	88	79	77	75	77	88	82
Delaware.....							98	100	104	95	91	93
Urban.....							93	100	99	91	87	87
Rural.....							103	101	110	100	94	100
Florida.....										82	74	75
Urban.....										88	87	85
Rural.....										80	68	70
Idaho.....												63
Urban.....												59
Rural.....												63
Illinois.....								76	82	71	73	69
Urban.....								81	85	75	74	68
Rural.....								68	77	65	70	72
Indiana.....			86	87	79	82	71	67	71	65	68	72
Urban.....			100	104	88	96	79	76	78	73	75	78
Rural.....			78	77	74	72	66	61	65	59	62	68
Iowa.....										55	56	59
Urban.....										66	70	72
Rural.....										50	50	53
Kansas.....			77	80	70	73	63	65	63	59	62	65
Urban.....			98	106	88	92	73	79	78	70	72	76
Rural.....			73	73	65	67	59	60	57	54	58	61
Kentucky.....			87	93	82	73	62	69	72	65	71	75
Urban.....			103	119	105	90	72	83	89	79	85	92
Rural.....			85	90	78	70	60	67	68	62	67	72
Maine.....	105	108	93	101	91	102	88	86	89	81	76	80
Urban.....	109	128	107	109	89	110	79	97	89	88	79	86
Rural.....	104	102	89	98	91	98	92	82	88	78	75	77

<sup>1</sup> Source: U. S. Bureau of the Census.

TABLE III.—Trend of infant mortality in urban and rural districts, etc.—Contd.

State	Deaths of infants under 1 year of age per 1,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Maryland.....		121	120	140	105	104	94	94	95	86	90	87
Urban.....		120	116	146	98	105	87	93	87	84	82	83
Rural.....		122	123	135	115	103	102	96	104	88	101	92
Massachusetts.....	101	100	98	113	88	91	76	81	78	68	73	73
Urban.....	103	103	99	115	90	92	76	82	78	68	73	73
Rural.....	92	87	91	104	82	83	77	76	75	66	74	72
Michigan.....	86	96	88	89	90	92	79	75	80	72	75	77
Urban.....	96	106	97	97	97	100	81	81	85	75	79	82
Rural.....	78	87	80	81	82	82	75	67	74	68	71	70
Minnesota.....	70	70	67	71	67	66	59	58	62	57	60	58
Urban.....	77	78	75	79	68	71	59	60	62	56	61	57
Rural.....	67	66	64	67	66	64	59	56	62	57	60	58
Mississippi.....							68	68	68	71	68	70
Urban.....							95	87	86	94	87	77
Rural.....							66	66	67	69	67	69
Montana.....								70	71	67	71	77
Urban.....								78	72	72	73	77
Rural.....								68	71	65	70	77
Nebraska.....						64	59	57	57	55	58	59
Urban.....						86	74	71	71	68	69	68
Rural.....						58	54	53	53	51	54	56
New Hampshire.....	110	115	110	113	93	88	87	80	93	80	76	79
Urban.....	131	133	132	124	101	97	95	90	102	81	87	82
Rural.....	89	97	86	102	85	78	78	69	84	78	65	75
New Jersey.....							74	79	72	70	69	70
Urban.....							74	79	71	70	68	69
Rural.....							74	77	74	69	70	72
New York.....	99	94	91	97	84	86	75	77	72	69	68	71
Urban.....	102	97	93	98	85	88	76	78	71	70	68	70
Rural.....	89	83	85	93	77	78	74	72	76	67	66	71
North Carolina.....			100	102	84	85	75	80	81	82	79	82
Urban.....			159	168	124	113	97	96	109	100	104	106
Rural.....			96	98	82	81	72	77	77	79	74	78
North Dakota.....										67	72	69
Urban.....										68	49	72
Rural.....										67	74	69
Ohio.....			92	94	90	83	75	72	75	67	70	76
Urban.....			103	100	94	89	76	76	75	70	71	78
Rural.....			79	87	85	74	73	65	75	62	67	72
Oregon.....					63	62	51	58	57	54	51	5
Urban.....					69	60	50	59	53	51	48	39
Rural.....					59	63	52	58	60	55	53	62
Pennsylvania.....	110	114	111	129	100	97	88	88	90	79	82	82
Urban.....	110	114	113	130	99	99	86	89	87	80	81	81
Rural.....	110	114	109	128	101	95	89	87	94	77	83	83
Rhode Island.....	120	111	108	126	(?)	(?)	93	85	94	80	73	82
Urban.....	118	116	109	127			94	86	94	81	74	82
Rural.....	129	93	101	118			86	79	94	73	69	82
South Carolina.....					113	116	96	93	96	102	(?)	(?)
Urban.....					139	150	127	105	117	121		
Rural.....					111	112	92	91	94	99		
Utah.....			69	64	71	71	73	69	59	64	56	75
Urban.....			66	66	74	69	69	70	61	59	49	70
Rural.....			71	63	69	72	75	68	58	67	60	78
Vermont.....	85	93	85	93	85	96	78	73	76	70	72	72
Urban.....	116	128	108	119	121	117	102	98	92	78	66	72
Rural.....	80	86	81	88	79	92	73	68	73	68	74	72

<sup>a</sup> Dropped from the birth-registration area.

TABLE III.—*Trend of infant mortality in urban and rural districts, etc.*—Contd.

State	Deaths of infants under 1 year of age per 1,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Virginia.....			98	103	91	84	79	77	84	78	81	84
Urban.....			129	145	106	107	95	94	98	93	97	103
Rural.....			91	93	87	77	74	72	80	73	76	78
Washington.....			69	69	63	66	55	62	57	56	56	56
Urban.....			62	67	59	64	55	58	51	52	50	54
Rural.....			75	71	67	69	56	65	62	61	64	59
West Virginia.....											80	82
Urban.....											93	93
Rural.....											77	79
Wisconsin.....			78	79	80	77	72	71	70	65	67	69
Urban.....			92	99	94	90	79	78	77	67	71	74
Rural.....			69	67	71	68	68	67	65	63	64	65
Wyoming.....								79	80	64	64	76
Urban.....								104	102	73	51	78
Rural.....								73	73	62	67	75
District of Columbia.....	111	106	97	112	85	91	83	85	92	76	87	85

TABLE IV.—Trend of infant mortality, by color, in the United States birth-registration area and in States having 2,000 or more colored births annually during the period 1921 to 1925; 1915-1926<sup>1</sup>

State	Deaths of infants under 1 year of age per 1,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Area.....	100	101	94	101	87	86	76	76	77	71	72	73
White.....	99	99	91	97	83	82	72	73	73	67	68	70
Colored.....	181	185	151	161	131	132	108	110	117	113	111	112
California.....					70	74	66	71	73	67	69	63
White.....					70	74	66	71	73	67	69	63
Colored.....					73	77	69	77	72	70	65	65
Florida.....										82	74	75
White.....										70	60	62
Colored.....										107	105	107
Illinois.....								76	82	71	73	69
White.....								75	79	68	70	68
Colored.....								125	157	141	122	109
Kentucky.....			87	93	82	73	62	69	72	65	71	75
White.....			82	87	77	69	58	64	67	61	67	71
Colored.....			152	191	147	138	110	157	157	119	119	134
Maryland.....		121	120	140	105	104	94	94	95	86	90	87
White.....		101	101	125	92	90	81	81	80	76	76	74
Colored.....		209	201	215	160	164	147	147	155	128	146	137
Mississippi.....							68	68	68	71	68	70
White.....							53	56	53	55	53	59
Colored.....							85	79	82	88	83	81
New Jersey.....							74	79	72	70	69	70
White.....							71	76	69	67	65	67
Colored.....							139	129	124	125	125	122
New York.....	99	94	91	97	84	86	75	77	72	69	68	71
White.....	98	93	90	95	82	85	74	76	71	68	66	68
Colored.....	191	169	176	175	151	159	138	124	121	114	119	132
North Carolina.....			100	102	84	85	75	80	81	82	79	82
White.....			85	85	74	73	66	70	70	70	67	71
Colored.....			133	140	109	113	95	101	106	110	105	107
Ohio.....			92	94	90	83	75	72	75	67	70	76
White.....			91	92	88	81	73	70	72	64	67	73
Colored.....			158	178	157	153	122	111	139	113	127	128
Pennsylvania.....	110	114	111	129	100	97	88	88	90	79	82	82
White.....	108	113	109	126	98	95	86	86	88	76	80	80
Colored.....	184	180	194	226	151	167	134	142	151	138	131	139
South Carolina.....					113	116	96	93	96	102	(?)	(?)
White.....					76	83	69	67	70	77		
Colored.....					149	148	123	119	125	127		
Virginia.....			98	103	91	84	79	77	84	78	81	84
White.....			80	86	78	72	68	65	71	66	67	72
Colored.....			137	141	120	110	103	102	115	104	111	111
West Virginia.....											80	82
White.....											78	79
Colored.....											110	124
District of Columbia.....	111	106	97	112	85	91	83	85	92	76	87	85
White.....	83	83	71	85	67	72	68	64	71	62	67	67
Colored.....	173	158	160	188	132	139	122	134	143	108	132	123

<sup>1</sup> Source: U. S. Bureau of the Census.<sup>2</sup> Dropped from the birth-registration area.



TABLE V.—*Maternal mortality rates for the United States and certain foreign countries*<sup>1</sup>

Country	Maternal mortality rates per 10,000 live births <sup>2</sup>											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	
Australia	43	53	56	47	47	50	47	45	51	55	56	
Belgium	---	---	---	---	---	72	60	57	53	56	58	
Canada (birth-registration area)	---	---	---	---	---	---	---	51	55	54	60	
Chile	66	73	72	82	88	75	79	80	74	61	61	
Denmark	---	---	---	---	---	24	20	20	26	24	---	
England and Wales	42	41	39	38	44	43	39	38	38	37	41	
Finland	34	36	38	44	40	36	---	---	---	---	---	
Germany	40	45	45	49	51	49	49	50	52	53	---	
Irish Free State	---	---	---	---	---	---	---	57	48	48	47	
Italy	22	27	30	37	29	28	26	25	27	---	---	
Japan	36	35	35	38	33	35	36	33	34	31	30	
The Netherlands <sup>3</sup>	25	26	25	30	34	24	23	25	23	24	26	
New Zealand	47	59	60	52	51	65	51	51	51	50	47	
Northern Ireland	---	---	---	---	---	---	---	47	49	45	44	
Norway	27	28	30	30	35	26	22	25	28	---	---	
Scotland	61	57	59	70	62	62	64	66	64	58	62	
Spain	52	52	51	64	53	50	51	49	46	---	---	
Sweden	29	27	25	26	32	27	27	---	---	---	---	
Union of South Africa	40	35	43	41	39	41	41	42	45	43	---	
United States (birth-registration area)	61	62	66	92	74	80	68	66	67	66	65	
Uruguay	22	29	32	30	23	34	33	27	27	25	25	

<sup>1</sup> Figures from official sources.<sup>2</sup> Deaths of women from causes associated with pregnancy and childbirth.<sup>3</sup> Omitting from calculation of rates prior to 1924 the live-born infants who died before registration of birth (within three days of birth).TABLE VI.—*Infant mortality rates for the United States and certain foreign countries*<sup>1</sup>

Country	Deaths of infants under 1 year of age per 1,000 live births											
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
Australia	68	70	56	59	69	69	66	53	61	57	53	54
Austria	218	192	186	193	156	157	154	156	141	127	119	---
Belgium	---	---	---	---	109	110	122	114	100	95	100	---
Bulgaria	---	---	---	---	110	146	158	155	165	150	---	---
Canada (registration area)	---	---	---	---	---	---	88	87	88	79	79	---
Chile	254	241	269	255	306	263	278	240	283	266	258	251
Czechoslovakia	---	---	---	---	---	---	---	---	148	148	146	154
Denmark	95	100	100	74	92	91	77	85	83	84	80	84
Egypt	---	---	---	---	---	---	133	140	143	150	155	146
England and Wales	110	91	96	97	89	80	83	77	69	75	75	70
Finland	110	110	118	115	135	97	95	99	92	107	85	---
France <sup>2</sup>	142	122	123	138	119	99	115	85	96	85	89	---
Germany	168	149	155	154	121	131	134	130	132	109	105	---
Guatemala	---	---	---	---	---	---	76	92	79	81	99	---
Hungary	264	219	215	217	158	193	193	198	184	193	168	167
Irish Free State	---	---	---	---	---	---	---	69	66	72	68	---
Italy	147	147	139	192	129	127	129	126	128	128	119	---
Japan	160	170	173	189	170	166	168	166	163	156	142	---
Lithuania	---	---	---	---	---	---	---	---	170	179	146	---
The Netherlands <sup>3</sup>	87	85	87	93	84	73	76	67	57	61	58	---
New Zealand	50	51	48	48	45	51	48	42	44	40	40	40
Northern Ireland	---	---	---	---	---	---	---	77	76	85	86	---
Norway	68	64	64	63	62	58	54	55	50	50	---	---
Salvador	---	---	---	---	---	---	141	124	118	150	139	---
Scotland	126	97	107	100	102	92	90	101	79	98	91	83
Spain	152	147	155	183	156	165	147	145	148	140	---	---
Sweden	76	70	65	65	70	63	64	62	56	60	55	---
Switzerland	90	78	79	88	82	84	74	70	61	62	58	57
United States (birth-registration area)	100	101	94	101	87	86	76	76	77	71	72	73
Uruguay	111	124	107	110	101	117	107	94	104	108	115	---

<sup>1</sup> Figures from official sources: Rates are for territories as constituted at date shown.<sup>2</sup> Omitting from calculation the deaths of infants occurring before registration (within three days of birth).<sup>3</sup> Omitting from calculation prior to 1924 the deaths of infants occurring before registration (within three days of birth).

**APPENDIX D.—PUBLICATIONS AND EXHIBITS OF THE CHILDREN'S BUREAU BEARING UPON MATERNAL, INFANT, AND CHILD WELFARE AND HYGIENE**

**BULLETINS**

- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for the period March 20, 1922, to June 30, 1923. No. 137. 42 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1924. No. 146. 56 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1925. No. 156. 81 pp.
- The Promotion of the Welfare and Hygiene of Maternity and Infancy—Report of the administration of the act of Congress of November 23, 1921, for fiscal year ended June 30, 1926. No. 178. 95 pp.
- Proceedings of the Third Annual Conference of State Directors in Charge of the Local Administration of the Maternity and Infancy Act (act of Congress of November 23, 1921), Held in Washington, D. C., January 11–13, 1926. No. 157. 209 pp.
- The Physician's Part in a Practical State Program of Prenatal Care, by Fred L. Adair, M. D. Standards of Prenatal Care, by Robert L. De Normandie, M. D. Separate No. 1. 20 pp.
- The Nurse's Part in a State Program of Prenatal Care, by Carolyn Conant Van Blarcom, R. N. Separate No. 2. 8 pp.
- How to Make a Study of Maternal Mortality, by Robert L. De Normandie, M. D. Separate No. 3. 11 pp.
- A Demonstration of the Community Control of Rickets, by Martha M. Eliot, M. D. Separate No. 4. 5 pp.
- Stimulation of Birth Registration, by William H. Davis, M. D. Separate No. 5. 5 pp.
- The Practical Application of Mental Hygiene to the Welfare of the Child, by D. A. Thom, M. D. Separate No. 6. 9 pp.
- Nutrition in Relation to Reproduction and Vitality of the Offspring, by Nina Simmonds, Sc. D. Separate No. 7. 11 pp.
- Proceedings of the Fourth Annual Conference of State Directors in Charge of the Local Administration of the Maternity and Infancy Act (act of Congress of November 23, 1921), Held in Washington, D. C., January 11–13, 1927. No. 181. 167 pp.
- The Problem of Compulsory Notification of Puerperal Septicemia, by George Clark Mosher, M. D. Separate No. 1. 13 pp.
- The County Health Organization in Relation to Maternity and Infancy Work and Its Permanency, by John A. Ferrell, M. D. Separate No. 2. 12 pp.
- Evaluation of Maternity and Infancy Work in a Generalized Program, by Jessie L. Marriner. Separate No. 3. 4 pp.
- Breast-Feeding Demonstrations, by Frank Howard Richardson, M. D. Separate No. 4. 8 pp.
- Foundation for Permanent Child-Hygiene Program in New Hampshire, by Elena M. Crough. Separate No. 5. 4 pp.
- Standards for Training of Public-Health Nurses, by Elizabeth Fox. Separate No. 6. 7 pp.
- Prenatal Care, by Mrs. Max West. No. 4. 41 pp.
- Infant Care (revised). No. 8. 118 pp.
- Child Care—The Preschool Age, by Mrs. Max West. No. 30. 82 pp.

- Child Management (revised September, 1927), by D. A. Thom, M. D. No. 143. 47 pp.
- Standards of Prenatal Care; an outline for the use of physicians. No. 153. 4 pp. (Also sample form for pregnancy record.)
- Breast Feeding. No. 83. 13 pp.
- Standards for Physicians Conducting Conferences at Child-Health Centers. No. 154. 11 pp. (Also sample forms for conference record.)
- How to Conduct a Children's Health Conference. No. 23. 24 pp.
- Children's Health Centers. No. 45. 7 pp.
- The Public-Health Nurse; how she helps to keep the babies well. No. 47. 7 pp.
- Milk, the Indispensable Food for Children, by Dorothy Reed Mendenhall, M. D. No. 163. 43 pp.
- What is Malnutrition? (revised), by Lydia J. Roberts. No. 59. 19 pp.
- Nutrition Work for Preschool Children, by Agnes K. Hanna. No. 138. 25 pp.
- Maternal Mortality; the risk of death in childbirth and from all diseases caused by pregnancy and confinement, by Robert Morse Woodbury, Ph. D. No. 158. 163 pp.
- References on the Physical Growth and Development of the Normal Child. No. 179. 353 pp.
- The Hygiene of Maternity and Childhood—Outlines for Study. Separate No. 1 from Child Care and Child Welfare, prepared in cooperation with the Federal Board for Vocational Education. No. 90. 327 pp.
- Causal Factors in Infant Mortality; a statistical study based on investigations in eight cities, by Robert Morse Woodbury, Ph. D. A consolidated report of the Children's Bureau studies in this field. No. 142. 245 pp.
- Habit Clinics for the Child of Preschool Age; their organization and practical value, by D. A. Thom, M. D. No. 135. 71 pp.
- Posture Clinics; organization and exercises, by Armin Klein, M. D. No. 164. 32 pp.
- Posture Exercises; a handbook for schools and for teachers of physical education, by Armin Klein, M. D., and Leah C. Thomas. No. 165. 33 pp.
- A Study of Maternity Homes in Minnesota and Pennsylvania. No. 167. 92 pp.
- Recreation for Blind Children, by Martha Travilla Speakman. No. 172. 74 pp.
- A Tabular Summary of State Laws Relating to Public Aid to Children in Their Own Homes in Effect January 1, 1925, and the text of the laws of certain States. Revised edition. Chart No. 3. 37 pp.
- Minimum Standards for Child Welfare Adopted by the Washington and Regional Conferences on Child Welfare, 1919. No. 62. 15 pp.

## LEAFLETS

- Economic Factors in Infant Mortality, by Robert Morse Woodbury, Ph. D. (Reprinted from the Quarterly Publication of the American Statistical Association, June, 1924.) 19 pp.
- Federal Aid for the Protection of Maternity and Infancy, by Grace Abbott. (Revised reprint from the American Journal of Public Health, September, 1924.) 8 pp.
- The Trend of Maternal Mortality Rates in the United States Death-Registration Area, 1900-1921, by Robert Morse Woodbury, Ph. D. (Reprinted from the American Journal of Public Health, September, 1924.) 7 pp.
- Westergaard's Method of Expected Deaths as Applied to the Study of Infant Mortality, by Robert Morse Woodbury, Ph. D. (Reprinted from the Quarterly Publication of the American Statistical Association, September, 1922.) 12 pp.
- What Is the Future of the Day Nursery? By Grace Abbott. (Reprinted from Child Health Bulletin, vol. 3, no. 2, February, 1927.)

## FOLDERS

- Minimum Standards of Prenatal Care (revised). No. 1.
- Backyard Playgrounds. No. 2.
- Why Drink Milk? No. 3.
- What Builds Babies? No. 4.
- Sunlight for Babies. No. 5.
- Breast Feeding. No. 8.
- Keeping the Well Baby Well. No. 9.

## DODGERS

Books and Pamphlets on Child Care (revised). No. 1.  
 Is Your Child's Birth Recorded? (revised). No. 3.  
 Feeding the Child. No. 8.  
 What Do Growing Children Need? No. 10.

## SMALL CHARTS

Baby's Daily Time Cards (a series of six cards, 5 by 8 inches, a different color for each age period). Chart No. 14.

EXHIBIT MATERIAL<sup>1</sup>

The Health of the Child Is the Power of the Nation (poster in colors, 18 by 24 inches).  
 Posture Standards (6 charts, 18 by 38 inches). To be purchased directly from the Government Printing Office at 50 cents for the set of 6 or 25 cents for the three girls' charts or for the three boys' charts.  
 Well Born. (Two-reel film, showing time 30 minutes. Titles in English or Spanish.)  
 Our Children. (Two-reel film, showing time 35 minutes. Titles in English or Spanish.)  
 Posture. (Two-reel film, showing time 20 minutes. Either reel may be used alone, the first being a general introduction suitable for parents and children.)  
 Sun Babies. (One-reel film, showing time 15 minutes. This shows how to give sun baths in order to prevent and cure rickets.)  
 The Best-Fed Baby. (One-reel film, showing time 15 minutes. This shows the importance of breast feeding.)  
 Trails That Lead to Mothers and Babies. (Film slide illustrating the work done under the maternity and infancy act.)  
 The Healthy Baby. (Film slide showing the care of the baby to 2 years of age.)  
 Rickets. (Film slide showing the effects of the disease and how it is prevented and cured.)  
 The Preschool Days of Betty Jones. (Film slide showing the care of the preschool child.)  
 The Care of the Baby (50 lantern slides).  
 Infant and Child Welfare (54 lantern slides).  
 Maternity and Child-Health Center (model; weight, 109 pounds).  
 Children's Nursery (model; weight, 245 pounds).  
 City Playground for Children (model; weight, 109 pounds).  
 Demonstration of Posture Exercises (model; weight, 90 pounds).  
 Sun Baths for Babies (model; weight, 95 pounds).

<sup>1</sup> Detailed descriptions of the exhibit material available from the Children's Bureau and of the conditions and procedure of loan and purchase can be had on application to the bureau.

