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# SAVE *the* YOUNGEST

## Seven charts on MATERNAL AND INFANT MORTALITY, *with* *explanatory comment*

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## WHEN WILL THE THERMOMETER FALL?

In our country in 1919, 17,800 mothers lost their lives from conditions caused by childbirth. The mercury in the thermometer on page 3 shows that the United States ranks seventeenth, respecting maternal mortality, in a list of 17 countries. The intelligence and the conscience of our people are challenged by this high rate.

The death rate from conditions connected with childbirth rose from 6.1 per 1,000 births in 1915, to 6.2 in 1916, 6.6 in 1917, and to 7.4 in 1919. In 1918 the rate rose to 9.2, and the number of deaths to 23,000, an increase due largely to the epidemic of influenza which was especially dangerous to expectant mothers.

The maternal mortality thermometer here shown indicates that the United States permits many thousands of mothers to die from preventable causes every year. Out of the 17,000 women who died in 1917 from childbirth about 7,000 died from childbed fever, a disease almost entirely preventable; the remaining 10,000 died from causes also to a great extent preventable.

In 1917 childbirth caused more deaths among women 15 to 44 years old than any other disease except tuberculosis; it caused in the same year among the same age group more than five times as many deaths as typhoid fever.

During the 17 years from 1900 to 1917 the typhoid rate has been reduced to one-third the former rate, the tuberculosis rate markedly reduced, the diphtheria rate reduced more than one-half. In other countries there has been a decrease in the death rate from childbirth, but in the United States no indication of a decrease in the maternal death rate has yet appeared.

And physicians remind us that the women who die in childbirth are few beside those who suffer preventable illness or a lifelong impairment of health.

The loss involved is immeasurable. It does not stop with the loss of vigor and efficiency to the mother. It extends, in general, to the well-being of her home and her children; and, in particular, to the motherless infant who faces a peculiarly hazardous existence. For example, in two of the cities included by the Children's Bureau in its study of infant mortality, the mortality rate among babies whose mothers died during the year following birth is compared with the rate for all the babies in the city. In Waterbury the rate among the motherless babies is three times the average for the city; in Baltimore, five times the average for the city.<sup>2</sup>

Our enemies are chiefly ignorance and poverty—from a community point of view perhaps mostly ignorance. "Public health is purchaseable," and a community can, to a large extent, determine its own death rate. Individuals should be educated to demand, and communities to supply, as a minimum protection, public health nurses; prenatal centers; clinics, such as dental and venereal clinics; maternity hospitals or wards in general hospitals; training, registration, and supervision of midwives; training, registration, and supervision of household attendants; education of the general public in the significance of and necessity for maternal and infant health.

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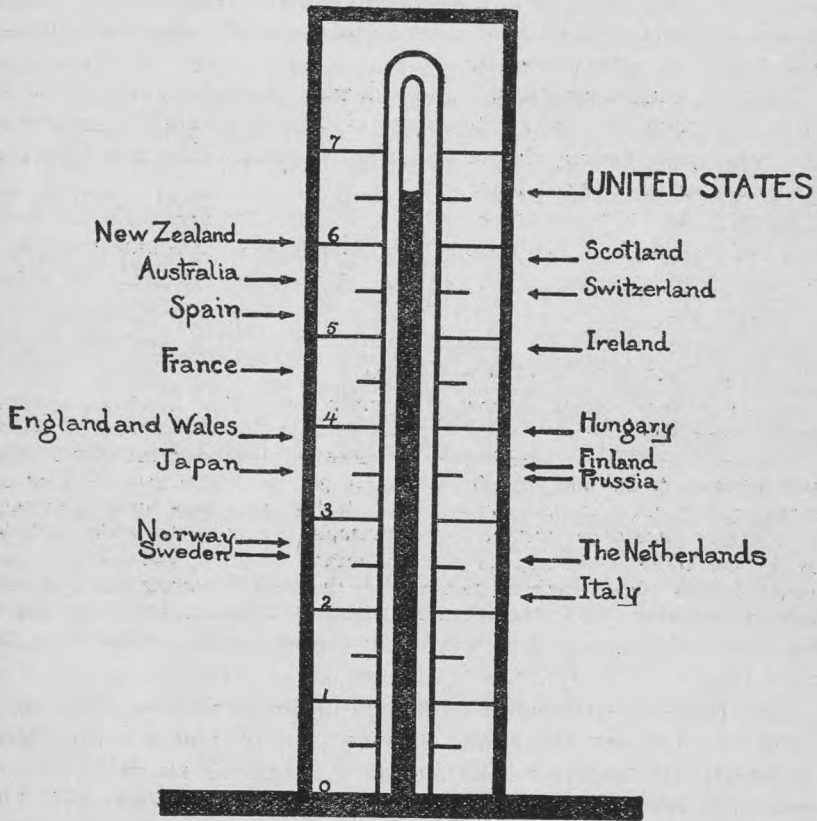
<sup>2</sup> Sixth Annual Report of the Chief, U. S. Children's Bureau, p. 12. Washington, 1918.

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# MATERNAL MORTALITY RATES

per 1000 births

Latest available figures up to 1917



CHILDREN'S BUREAU, U.S. DEPARTMENT OF LABOR.

## THE FIRST YEAR OF LIFE IS THE DANGEROUS AGE.

On the thermometer of infant mortality the United States has a better relative position than on the thermometer showing maternal mortality, but, even so, six countries have better rates than ours.

It is true of this thermometer, as it is also of the one on page 3, that its level is not fixed but is constantly changing, falling with the increase of prenatal work carried on by various agencies of infant-welfare work, improvement of living conditions, and the like; or rising when unfavorable conditions are not controlled.

The war emphasized the fact that the annual loss of young life from preventable causes is an important world-wide problem, and even under the strain of war European countries made special efforts to safeguard children. In England these efforts resulted in reducing the infant mortality rate to the lowest point in her history. The essentials of the methods employed in England were as follows:

1. Compulsory notification of births within 36 hours.
2. Government aid for approved local maternity and infant welfare work, amounting to not more than 50 per cent of approved expenditure.
3. Publication of a Government plan for such work, including the details of antenatal, natal, and post-natal work.
4. Great increase of health visitors, the number of whom was 600 in 1914 and 1,607<sup>3</sup> in 1920. The board recommends that there should be at least one to every 400 births.

In 1917 there were 850 welfare centers in England and Wales; in April, 1920, they had increased to 1,754, of which 1,061 were municipal or county and 693 voluntary.

The classic example of how a young and vigorous country can reduce its infant death rate in New Zealand. Since about 1905 its infant mortality rate from gastric and intestinal diseases has been cut to one-fifth; the rate from respiratory diseases has been cut in half, and it has made a beginning in the reduction of the mortality from diseases of early infancy. It now has an infant death rate of 45.

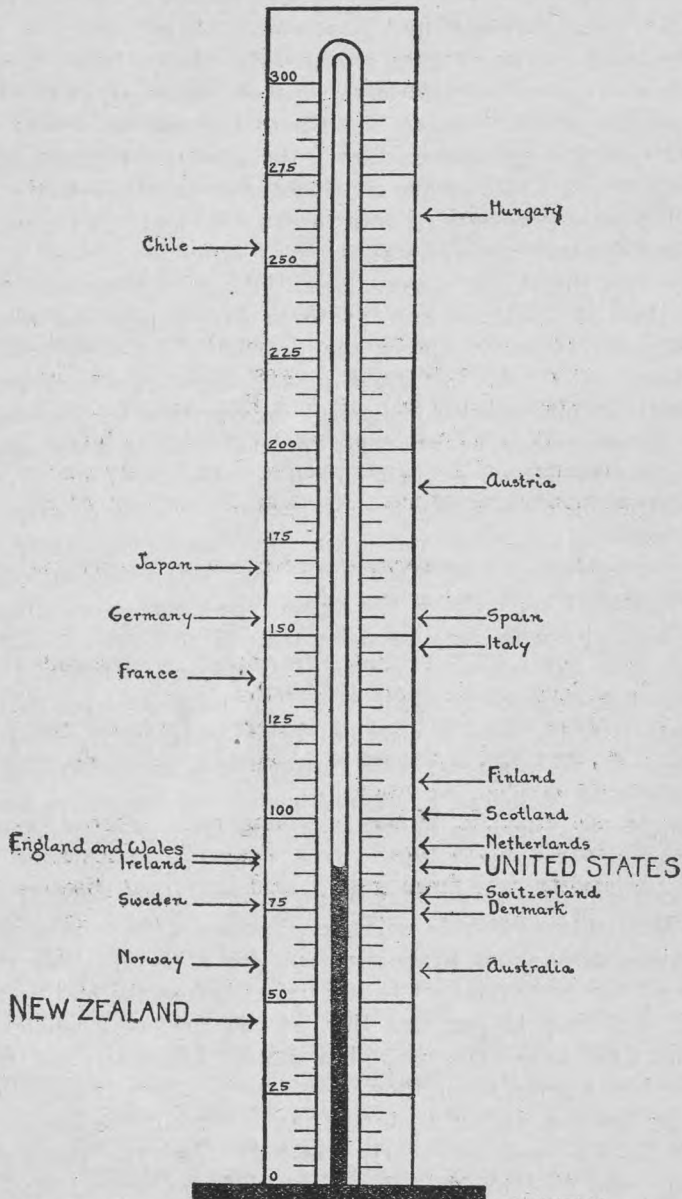
The United States could reduce its too high rate by establishing certain minimum standards, such as prompt and accurate birth registration; children's health centers, including nutrition clinics; provision for public health nurses; special clinics; children's hospitals or beds in general hospitals; State registration and supervision of all child-caring institutions; general educational work, including a compulsory course in child hygiene in public schools.

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<sup>3</sup>The total number of health visitors in 1920 was 3,359, but many had duties in addition to maternity and infancy work. The total service for this work was computed as equivalent to the whole time of 1,607 visitors.

# INFANT MORTALITY THERMOMETER

DEATHS UNDER 1 YEAR OF AGE PER 1,000 BIRTHS



CHILDREN'S BUREAU, U.S. DEPARTMENT OF LABOR

## SAVE THE YOUNGEST.

In 1918 more than 100,000 babies in the United States died before they had completed their first month of life.<sup>4</sup>

Why do five times as many babies die in the first month of life as in the second and nearly twelve times as many as in the twelfth? Because the parents were not healthy or the mothers were not given proper care and protection during the months of pregnancy. We pile up this tall black monument because we allow mothers to be underfed, or overworked, or both; because we let them struggle along without necessary medical and nursing care.

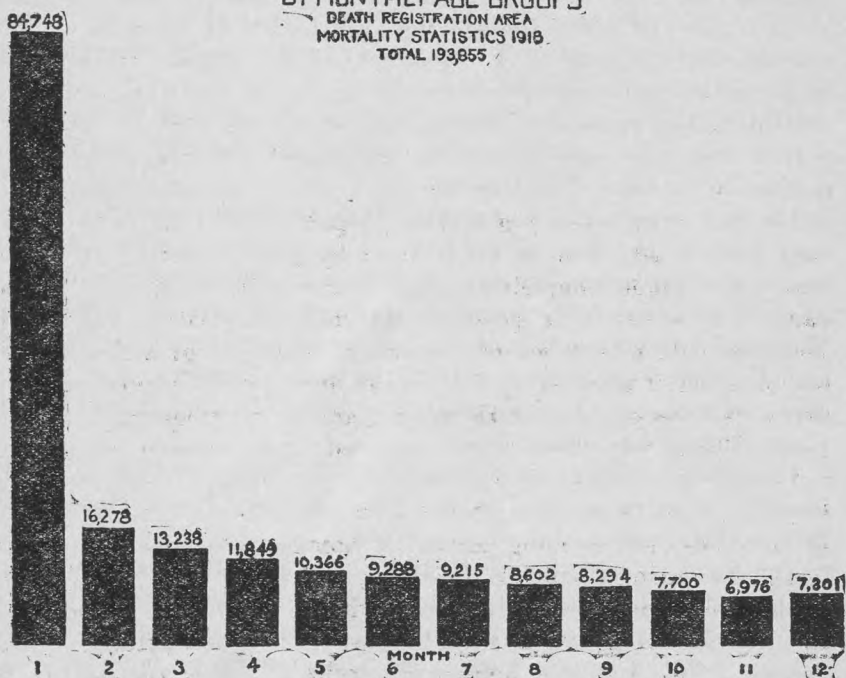
How can this high column be cut down? According to many authorities at least one-half of these babies perished needlessly; others put very much higher the proportion of those who might have been saved. We can cut it down by good prenatal care. This care will include complete physical examination by a physician as early in pregnancy as possible; internal examination and pelvic measurements before seventh month in the case of a first child; examination of urine every four weeks during early months, at least every two weeks after sixth month, and more frequently if indicated; Wassermann test, when indicated; instruction in hygiene of maternity and supervision throughout pregnancy; confinement at home by a physician or a properly trained and qualified attendant, or in a hospital; nursing service at home at the time of confinement and during the lying-in period, or hospital care; daily visits through fifth day, and at least two other visits during second week by physician or nurse; at least 10 days' rest in bed after a normal delivery, with sufficient household service to allow the mother to recuperate; examination by physician not later than six weeks after delivery.

A pertinent illustration may be given from the figures of the New York Maternity Center Association. Among 4,496 women who were supervised throughout pregnancy and for a month after the baby was born the proportion of babies dying before the end of the first month was only 42 per cent that of the city as a whole. These mothers lived under the usual low-income handicap; yet, with the help and care given them, they were able in a large number of cases to bring healthy babies to birth. In addition, the proportion of stillbirths was reduced nearly one-half; and the proportion of mothers who died was less than one-third the general rate for the United States.

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<sup>4</sup>This figure is an estimate based on the number who died in the death registration area which included 78 per cent of the population.

DEATHS UNDER ONE YEAR OF AGE,  
 BY MONTHLY AGE GROUPS,  
 DEATH REGISTRATION AREA  
 MORTALITY STATISTICS 1918.  
 TOTAL 193,855.



Two fifths of all the infants dying the first year of life die during the first three weeks after birth.

Chief Causes:

- Income insufficient for family needs.
- Veneral disease of the parents.
- Health condition of mother during pregnancy.
- Unskilled assistance during confinement.
- Lack of care during the lying-in period.

CHILDREN'S BUREAU, U.S. DEPARTMENT OF LABOR.

## TAKE CARE OF THE MOTHERS.

The chart on page 9 should be read in connection with the chart on page 7. As explained on that chart, deaths in the first month of life are due chiefly to the unfavorable conditions surrounding the mother during pregnancy—conditions which include poverty, ignorance, venereal disease, and lack of medical and nursing care.

This chart indicates plainly that the prenatal and natal causes claim the highest number of victims—a number closely corresponding to the deaths in the first month of life. If infant mortality is to be controlled the work for that purpose must begin in the prenatal period, and must include proper medical and nursing care for the mother at the time of childbirth.

The second column is the monument to the babies who die, for the most part, in the heat of summer. The death rate from digestive troubles is decreasing, but there is still need for widespread education of mothers in the feeding and general hygienic care of their babies. Many babies whose deaths are classed under gastrointestinal diseases actually died from neglect or from the mother's ignorance of proper care and feeding. The importance of breast feeding should be impressed upon the mother.

The public health nurse offers the solution of this problem. "More money for more nurses" is the plea of every board engaged in infant-welfare work the country over.

The third column should be studied in connection with the chart on page 15. The diseases of the respiratory tract, bronchitis and pneumonia, reap their grim harvest largely in the poor, ill-ventilated, crowded homes, where good food, cleanliness, and fresh air are almost unknown, and where even the rudiments of decent living are too often beyond the reach of the family's resources.

The fourth column shows what number die from the various epidemic diseases, such as measles and whooping cough. The idea, still too prevalent, that a child might just as well have these diseases and "get them over with" should be destroyed, and in its place should be established the habits of cleanliness and health which would protect the child from the danger of these epidemics.<sup>5</sup>

The remaining column includes a wide variety of causes, such as accidents and other external conditions.

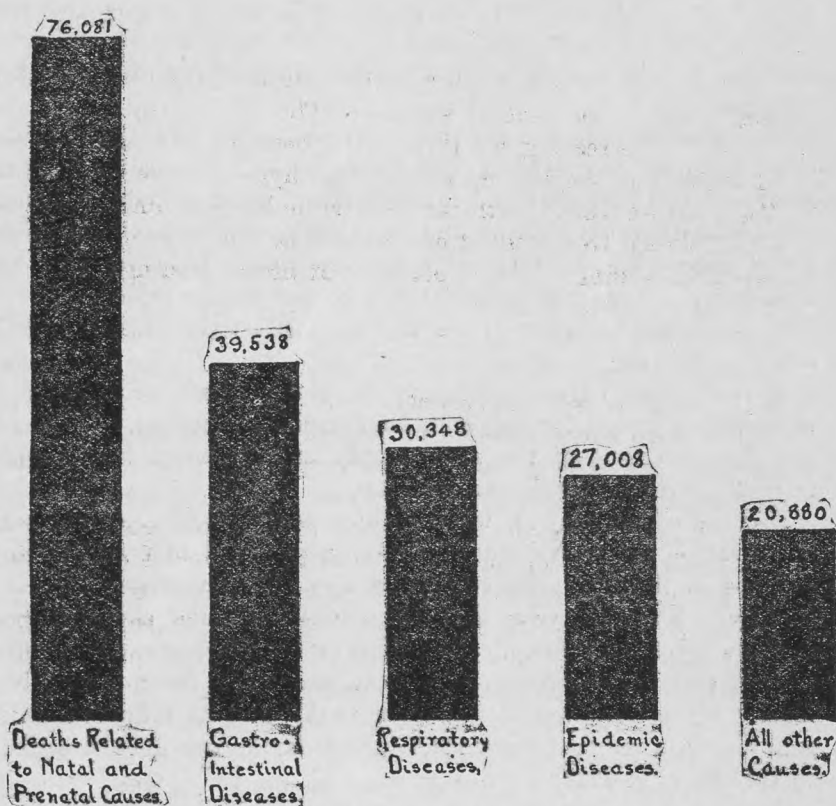
Work now being done in the United States, England, and other countries demonstrates that each of these formidable columns, particularly the first two, can be greatly reduced. Any community, in the light of present-day knowledge of health and preventive methods, can practically determine its own infant mortality rate.

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<sup>5</sup>In 1918, influenza accounted for nearly half the deaths from epidemic diseases.



DEATHS UNDER ONE YEAR OF AGE  
 GROUPED BY CAUSES  
 U.S. REGISTRATION AREA,  
 1918.



CHILDREN'S BUREAU, U. S. DEPARTMENT OF LABOR

## THIS HIGH PEAK IS UNNECESSARY.

Excessive heat is a grave menace to the health and life of babies. They must battle not only with the immediate weakening brought about by heat, but also with a possibly infected milk supply. In hot weather the public milk supply is easily infected with disease germs, which multiply with tremendous rapidity. If the milk supply is poor, the dangers are enormously increased by the heat. Even if the milk is clean when it reaches the home, it can be kept so only by great care. Unfortunately, the public milk supply is often not adequately protected from dirt; many families have no ice; and many mothers lack knowledge of how to take proper care of the milk in the home.

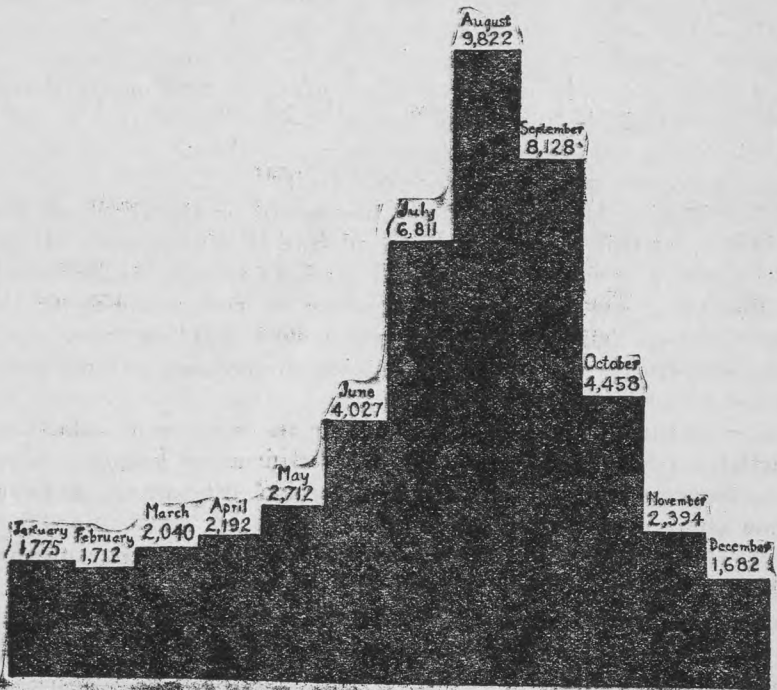
Hot weather is thus a time of great hazard to infant life, as this chart testifies. However, it is in the decrease of the deaths from the summer diarrheas that the most striking work for the reduction of infant mortality in this and in other countries has been and is being done. The methods of reduction in this field are now well understood. They consist essentially in such things as—

1. Insistence upon breast feeding for at least the first six months of the baby's life.
2. Instruction of the mother in the best methods of infant care, particularly breast feeding and, later, artificial feeding.
3. Improvement of the milk supply and the spread of popular knowledge regarding its care and use.

Because of the way in which babies went down before the summer heat, a rich merchant of Brooklyn was led to establish milk stations in that city about 26 years ago. Infant deaths decreased rapidly with each year that these milk stations supplied poor mothers. By the multiplication of infant-welfare stations, visiting nurses, and various forms of educational work for mothers, New York City has lowered its "summer peak," and its infant mortality rate has been reduced from 111.6 infant deaths per 1,000 live births in 1911 to 82 in 1919.

The work necessary to cut down the "summer peak" is being done by a large number of children's health centers throughout the country by means of an increasing number of public-health nurses and by the distribution of free educational literature on these subjects. The result is shown in the reduction in the infant death rate after the first month or two of life, as illustrated in the decrease in the number of infant deaths in the chart on page 13, comparing the year 1918 with 1910.

**SUMMER PEAK OF INFANT DEATHS**  
**FROM DIARRHEA AND ENTERITIS IN U.S. DEATH REGISTRATION AREA - 1918**



**ONE-FIFTH OF ALL THE DEATHS OF CHILDREN UNDER 2 YEARS OF AGE  
 ARE CAUSED BY DIGESTIVE DISORDERS WHICH ARE LARGELY PREVENTABLE.**

**CHILDREN'S BUREAU, U.S. DEPARTMENT OF LABOR**

## THE YOUNGEST MOST NEED OUR CARE.

The chart on page 13 furnishes a none too encouraging answer to the question, "Are the bad conditions shown by these charts growing better as the years go on?"

The solid line shows the number of infant deaths in 1910 in the various months of the first year of life. The dotted line shows the same for 1918, and the line of dots and dashes shows the death in 1918 less the deaths due to influenza. The actual number of infants that died in the first month of life was greater in 1918 than in 1910. However, our population was greater in 1918 and the total number of births sufficiently larger to make the death rate per 1,000 births in the first month of life probably slightly better in 1918 than in 1910. This chart shows strikingly what can not be too strongly emphasized, that the first month of life is the most hazardous.

The distance between the two lines after the first month shows by the perceptible decline in the deaths of older babies that the efforts made during the past 10 years to "save the babies," to "cut down the summer peak," etc., have borne good fruit.

But looking at the high black monument on the chart on page 7 and then at this chart, we can see plainly that we are not attacking the problem at the root. England has long recognized that the provision of prenatal care is fundamental to really intelligent child-welfare work; and her program published in 1914 included prenatal and obstetrical care, hospital and lying-in accommodations, and systematic instruction of women in the hygiene of pregnancy. Especially in rural areas was the need felt for more and better accommodations for child-bearing women. Government grants were made to relieve the situation, to maintain more small hospitals, and to provide physicians. Assistance was also given by furnishing domestic help and by providing for the care of the older children during the mother's absence. Prematernity and convalescent homes were also established in some places. In 1918 the maternity and child-welfare act establishing many measures for the protection of child-bearing women was passed.

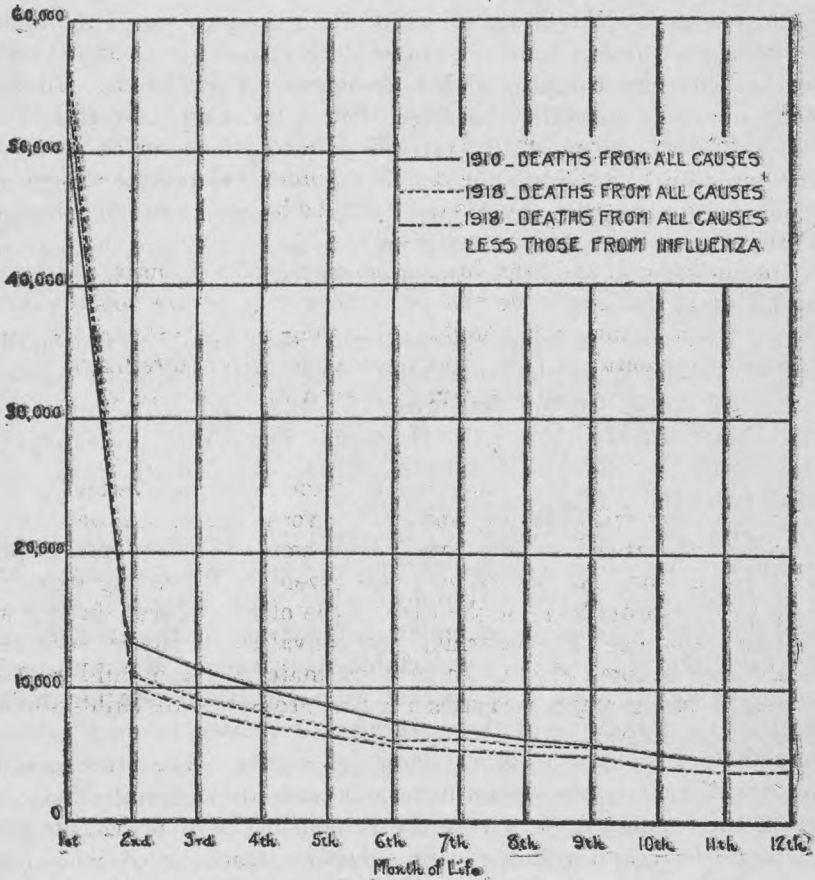
Such legislation is advantageous in that it brings Government assistance to large rural areas where isolation and modest tax returns make it impossible for local authorities to provide public-health nurses, adequate hospital accommodation, consultation welfare centers, or other needed facilities. It can bring to these areas stimulus and aid for infant-welfare work similar to that which we have given our own country districts for scientific farming, home economics, the health of domestic animals, and good roads.

Work for infant welfare is coming to be regarded as more than a philanthropy or an expression of good will. It is a profoundly important public concern which tests the public spirit and the democracy of a community. There is, perhaps, no better sign of the modernness of a city's administration than the proportion of its income which is assigned to the protection of infancy and childhood.<sup>9</sup>

<sup>9</sup> Second Annual Report of the Chief, U. S. Children's Bureau, p. 8. Washington, 1914.

## COMPARISON OF INFANT DEATHS IN 1910 AND 1918

IN DEATH REGISTRATION STATES OF 1910 (EXCLUSIVE OF NORTH CAROLINA)



The number of infant deaths during the first month of life has increased while the deaths among older babies have decreased. The prenatal and natal periods have been neglected.

**CHILDREN'S BUREAU, U. S. DEPARTMENT OF LABOR,**

## POVERTY IS THE BABY'S GREATEST ENEMY.

The greatest proportion of baby deaths occurs in families with the smallest income. Most of the child-bearing women in the homes recorded in this chart have undoubtedly been denied, in very large measure, the care necessary to insure healthy babies and healthy mothers. The poorer the family, the greater the hardship of the mother and the greater the menace to the child.

Income plays a chief part in determining the location of the home as well as the kind of home. Unfavorable location and overcrowding are bad housing conditions that accompany low income. In the study of infant mortality made in Waterbury, Conn., by the Children's Bureau, the mortality rate for children born in rear houses or houses on alleys was 172, while the rate for children born in houses located on the street was 120.6. The study in Manchester, N. H., showed the infant mortality rate to be 123.3 where the persons in a room averaged less than one, and 261.7 where they averaged two but less than three.

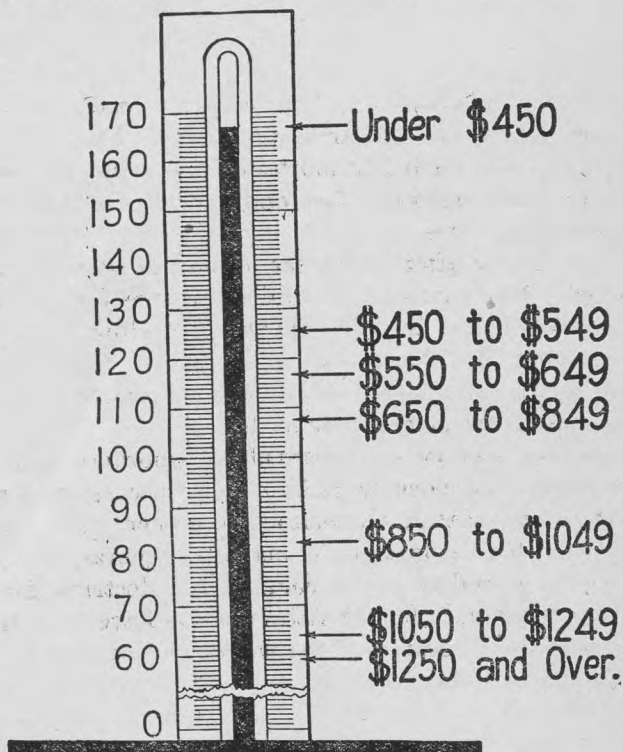
Low income often drives the mother to work to add to the family budget. Many times this entails less care for the baby, the substitution of bottle feeding for breast feeding, and other untoward conditions. In Manchester, N. H., it was found that the mortality rate for babies whose mothers were employed outside the home was about twice the average rate in the city.

Poverty may be accompanied by ignorance. It is important to remember that poverty lacks the defense against ignorance which is at the disposal of the well-to-do mother. Sir Arthur Newsholme says that the designation of maternal ignorance as the chief factor in child mortality is "a comfortable doctrine for the well-to-do person to adopt"; but he states that we have little reason for thinking that the ignorance of the working-class mother is much greater than that of mothers in other classes of society. The ignorance of the working-class mother is a menace because she is socially helpless unless the community will take the responsibility of providing adequate medical and nursing care, adequate teaching of maternity and infant hygiene, adequate provision for decent housing and sanitation, and adequate income for the father.

The fathers of 88 per cent of the babies included in the Children's Bureau studies made before the war earned less than \$1,250 a year; 27 per cent earned less than \$550. As the income doubled the mortality rate was halved.

# INFANT MORTALITY RATES, ACCORDING TO FATHERS' EARNINGS

COMBINED FIGURES FROM SEVEN CITIES STUDIED BY U.S. CHILDREN'S BUREAU



The baby death rate rises  
as the fathers' earnings fall.

UNITED STATES DEPARTMENT OF THE TREASURY  
BUREAU OF MONETARY AFFAIRS



The following table shows the results of the survey of the Federal Reserve Bank of St. Louis as to the effect of the change in the Federal Reserve Bank of New York on the Federal Reserve Bank of St. Louis.