MATERNITY AND INFANCY

(Some emphasis on the Foreign-Born Mother)

VII

Mae Rivers

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INFANCY AND MATERNITY

(Some Emphasis on the Foreign-Born Mother.)

The subject of infancy and maternity is one of particular importance in the field of public health, since in this field in which everyone has more or less interest, so much can be taught through different types of educational channels, and so many deaths are preventable in this field if the proper education is available to the population as a whole. The instillation of education here lagged greatly behind that of other public health work, but in 1893, child hygiene was inaugerated, not through organized health departments but rather through the philanthropic or private organization of the times. These all directed their efforts in the field of sanitation chiefly, as a starting point.

It was not until 1908 that the first bureau of child hygiene was established in the New York City Health Department with Dr. Joseph S. Baker as director of same. Here, the policy was to make information available, particularly to mothers', to institute centers for instruction, both of mothers and young girls; and to aid, primarily, the foreign born mothers. Since this plan included education of the general public, it was a departure from other methods used in the health department, but, it clearly demonstrated that such an agency was of great value in the department.

Municipal health departments everywhere followed the lead of New York and established child hygiene divisions and in 1912, Louisiana created the first child hygiene bureau in a State health

department. Others were stimulated to greater activity in this field by the maternity and infancy act, and at the time of its cessation in June 1929, every state except Vermont had a division or bureau in the field of maternal and child hygiene. Even the latter, however, conducted an educational program in the field of maternal and child care. (1)

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(1) Blanche N. Haines, M. D., "The Maternal and Child Hygiene Program of the Future", Public Health, (Pamphlet) Michigan, vol. 19, No. 6, June 1931.

Maternal hygiene entered the field of public health much later than child hygiene. Again New York took the lead in establishing this field, by its effort to provide prenatal care through the channels of the Association for Improving the Conditions of the Poor. The Maternity Center Association was not formed until 1918. However, not one state included in its State health department any program for maternal hygiene until after the passage of the maternity and infancy act in 1921.

This short history shows that child hygiene work has been organized for a period of twenty four years, while maternal hygiene work has been organized for the past eleven years only. The object of this paper is to make a careful study of both maternity and infancy, bringing out the necessity for organized hygiene in both fields; showing what has been accomplished in lowering the mortality rates and in educating the general public; and also to offer some suggestions for future educational programs of the same variety in these fields.

In dealing with the subject of infant mortality, the first consideration is that of birth registration. Birth registration is defined as the record in public archives of the births of all children. Europe has had complete records for a long time, of all vital statistics, while in the United States, birth registration has made much less progress than has marriage and death registration. It was not until 1915 that registration of births was established in the United States, and still today, two states do not comply enough with the requirements to be included as birth registration areas.(2)

See chart at back for the years that the different states have been included as registration areas since 1915.

Birth registration is coming to be regarded as a prime requisite in eradicating the three evils which affect children; namely, the reduction of infant mortality, the preservation of the child's right to education, and the abolishing of child labor. Of course, in this paper, we are chiefly concerned with the former item.

The importance of birth registration can not be over-estimated as a starting point for any study in infant mortality. For instance, no statistics of any value can be compiled from inadequate birth registration. In 1910 in Oregon, the estimated number of births was 13,628 while only 9,176 of these were registered. This was approximately only 65%.(3)

Birth Registration - an aid in protecting the lives and rights of children, Childrens Bureau Publication, no. 2, 1914.

Any study which would be based upon these figures could not be of any great value in any field, but, needless to say, they would be of even less value in a study of infant mortality which required the number of births as well as the number of deaths to formulate the rate of infant mortality in a given locality, before any work concerned with lowering this rate can be successfully instituted.

A model law would require the birth certificate to contain the following information:

I. Place of birth of child, its name, sex and legitamcy, also whether it is a single or plural birth.

II. The full name, residence, color or race, birthplace, age and occupation of father.

III. The maiden name, residence, color or race, birthplace, age and occupation of the mother.

IV. Number of child of mother and number of children of mother living.

V. Whether or not child is born at full term.

Illegitimacy is one of the most important considerations after birth registration itself. It seems that the recording of illegitimacy was not considered a necessity until very recently and that, even now, some states do not record such information, even though they have registration. The importance of illegitimacy as a consideration in infant mortality can not be taken lightly when the amount of illegitimacy, as well as the death rate amongst same is considered.

There is less illegitimacy in the United States than in the remainder of the world, but some of this lowered rate is due to the

scattered statistics on the subject. However, there are definite reasons fro the large amount of illegitimacy in Europe as compared with the United States. These are in Europe, briefly, the toleration of pre-marital sex relations, marriage laws which result in common law marriages, excess of marriagable females, difference in customs of the different races and peoples and the increase in age of marriage and decline in the proportion of marriage. It is interesting to note here that, contrary to the popular notion, the Northwestern Europeons furnish the greater number of illegitimate births.

In the United States the chief causes for illegitimacy fall into two main classes - ignorance and low ideals. These embrace such things as mental defectiveness, lack of home training, overcrowding, unwholesome recreation, drunkedness, etc. (4)

George B. Mangold, Ph D., Children Born Out of Wedlock, University of Missouri, Columbia, Missouri, 1921.

When the death rates for illegitimate births are examined, they simply "floor" one to use a slang expression. For example in 1915 when the rate for legitimate births was 100 per 1000 live births, the rate for illegitimates was 315 per 1000. A glance at these figures alone shows the tremendous importance of this phase of the subject when considering infant mortality.

Several causes contribute to this excessive mortality. First, the baby suffers before birth. The mother is worried, anxious, and unhappy. She has laced herself unduly to conceal her condition, or she has been improperly nourished, or she has made efforts to destroy the fetus.

Second, the mother may fall into the hands of improper people-unscrupulous or incompetent physicians, ignorant midwives, or inefficient nurses--and the baby suffers accordingly.

Third, the mother, turned out of the hospital with a ten-day-old baby in her arms, is unfit for work and is often unable to procure employment. She goes from place to place seeking it and becomes increasingly unfitted to nurse the baby on the breast or to care for it properly.

Fourth, the mother in many cases is mentally deficient and has not sufficient intelligence to care for the baby properly.

Fifth, the baby may be physically weak because of disease inherited from the father or the mother.

Sixth, many illegitimate babies are weaned nunecessarily, either in order that the mother may become a wet-nurse for some other baby or in order that she may engage in outside employment. In many such cases the baby is farmed out to some incompetent or unscrupulous woman, or the payment made is insufficient to enable her to feed the baby properly.

Seventh, many such babies are abandoned by the mothers, either left to be found by a passerby or by the police, or taken to a foundling asylum and given over to the authorities there.

As a result of these different causes, we find multitudes of illegitimate babies turned over to foundling asylums at the age of ten to twenty days in a dying condition, and norwithstanding the reduction of infant mortality in the general population, there are still numerous foundling asylums which have a mortality rate of from 25 to 60 per cent, instead of the normal rate of 12 to 14 per cent. (5)

Hastings H. Hart, Ll.D., The Registration of Illegitimate Births, (a paper on the prevention of infant mortality), Russell Sage Foundation, N.Y., 1916.

The following suggestions have been made for the prevention of such excessive mortality in this field.

1. The state should assume the responsibility for the safty of an illegitimate child.

2. Legislation should be secured whereby physicians hospitals, boarding house keepers, homes for young women, etc., be required to report all mothers with illegitimate babies.

3. Legislation should be passed which would make it compulsory for the mothers of illegitimate babies to care personally for the child for a period of one year and to breast feed the child for at least six months unless the physical condition of the mother is such that two doctors will sign certificates stating that she should not be allowed to do so on account of her own health being jeopardized by same.

4. In the case of the foundling infant abandoned by the mother, every effort should be made to find the mother and she should be held to her maternal obligations.

In considering the rates for infant mortality and the causes for such rates, it is interesting to note that Oregon has the lowest infant mortality in the United States, the rate being 45 in 1000, while the rate for the U.S. as a whole reaches 65 per 1000 live births. In 1915, the rate for the U.S. was 100 per

1000 , but although it has decreased to 69, it still is an amazingly high rate for a country which boasts of being so rich in medical skill as well as wealth.

In order to use preventative measures in any field to the best advantage, causal factors must first be understood and thoroughly known so that prevention can be intelligently planned and carried out.

Of course, the pathological causes of infant deaths can be easily studied from such things as the required death certificates stating the specific condition which caused the death. These are therefore a primary step since prevention can be installed for such causes and future death certificates will act as indices of results from such programs.

But in analizing the total causal factors, the antecedent and predisposing factors should be known. Inborn vigor and vitality may cause a difference in the rates, racial customs are apt to be an important factor; for example, the Portuguese custom of feeding "sopa", a milk and cracker mixture to the infant a few hours after birth leads the rate in this group to be very high, while the Italien mothers wrap their infants in swaddling clothes. The interesting thing to note here is that the Jews have the lowest rate of infant mortality no matter what phase of the causal factors are being considered. There ~~seems to be~~ apparently is no satisfactory explanation for this other than the racial consideration.

Seasonal conditions cause a variation in rates, the rates being , in the case of gastro-intestinal diseases, a gfeat deal higher in summer reaching the peak xxx in August when it is thirteen times as high as in the month of January which is the minimum month. For respiratory diseases, the rate reaches its maximum in the month of February with a rate seven times as high as the rate for August which is the minimum. The month of birth affects the rate, it being found that the infants born in August have the lowest rate while those born in June have the highest rate. Of course, the gastro-intestinal have a very definite relationship here.

The sex affects the mortality rate, that of the males being at least one fourth higher than that for females, both in full term babies as well as pre-matures. The male child does not possess the same amt. of vitality xx as the female.

The physical condition of the mother bears a direct relationship on the mortality rate, the rate being four times as high from all causes for the infants, if the mother has died within one year after the birth of the child.

Housing conditions greatly affect the rate. The number of persons per room, the sanitary conditions, the ventilation, etc., all affect the mortality. Edith Elmer Wood made a study in 1926 of housing conditions and compiled the following from her study. The mortality rates in clean

houses was 113 as compared with rate for dirty houses which was 186. The rate in the homes which had bath-tubs was 72 as compared with those that did not have them having a rate of 164. In the matter of ventilation, she found the rates to be 28 in well ventilated houses, 91 in fairly well ventilated houses and 169 in poorly ventilated houses. Personally, in Los Angeles , I have seen a family of ten Mexicans living in one room- that is, six children, a pair of new-born twins and the parents.

The order of birth affects the mortality rate, the first born having a higher rate than the second born, but after that, the rate climbs with the number of the birth.

The age of the mother accounts for a variation also. It is found that the rate for infants born to mothers of twenty or under and to mothers of forty or over have a high rate of mortality. The physical immaturity of the former and the deterioration of the reproduction system of the latter after forty account for these rates.

The type of birth when considering them as single, plural or premature births was found to have been twenty-five times higher for the prematures than the single births when considering early infancy, while the rate for the plural births was six times as high. The rate for instrumental deliveries was eight per 1000 higher than for other deliveries.

Type of feeding causes a great difference in the mortality rates; those for artificially fed infants being four times as great as those for breast fed babies. These rates were found to exist when the twins, triplets, and premature births were all excluded from the calculation. In other words, if the latter were included in the figures, the rate would be a great deal higher even than the four times which it was found to be without them.

When the employment of the mother was considered, it was found that rate of infant mortality varied as the mother worked out of her home in a gainful type of employment, or in her home in a gainful type of work, or just simply in her home about her daily work. The rates for these were 176 for the first mentioned, 114 for the second, and only 98 for the latter.[6]

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[6] Causal Factors in Infant Mortality, Robert Morse Woodbury, Ph.D., U.S. Children's Bureau, publication no. 142, 1925.

The earnings of the father have a direct bearing on the rate of infant mortality. For example, if the per capita income of the family is considered, it is found that the death rate was highest in families in which the income was but $$450.00 per year, while as the economic status was improved, the rate decreased; a very direct ratio existing between the two factors.

Syphilis is a specific cause of death in the infant. This is very definitely demonstated by Dr. McCord's work with fetal autopsies. He did some two hundred necropsies, of which fifty were born alive, and one hundred and eighty-nine were born dead. The latter figure represents 77%. Of this 77%, he found maceration present in 45%, with a showing of positive syphilis in the total of this 77% that amounted to 45%, and another probable lues found in 12%. This makes the tatal 57% that were in all probability due to syphilis. His suggestion is that there should be made some kind of compulsion by medical authority by which all pregnant ~~xxxxx~~ women be forced to take treatment for syphilis if found present.

Dr. J.R. McCord, Fetal Autopsies, Journal of the American Medical Association, volume 88, no.4, page 437, 1927.

In connection with the above paragraph, it is interesting to note that protein as an adjunct in the treatment of resistant lues has been found to be very effective. Dr. Herrold of Chicago has gathered data that shows that lues of years of standing which has had any number of different types of treatment has even responded to this treatment, since even a xxxx (four plus) has responded within from two

to seven ~~four~~ months to a negative test.

Dr. Yandell Henderson of New Haven, Connecticut, has given some interesting views on infant mortality. He quotes infant mortality rates for still births and neo-natal deaths as eighty or nearly ninety per one-hundrend thousand, with prematurity given as the chief cause of death. He insists, and rightly, it seems to me, that prematurity should not be given as the cause of death, because it is only when the infant fails to function in some organ that it dies. He has assumed that a number of these deaths are due to primary and secondary respiratory failure. He bases his statements on a study of eight hundred autopsies by Cruickshank in which there was found to be asphyxia neonatorum in 68%. Another man who has done some work along these lines, Wasson, has found that some infants' lungs are yet atelectic at two weeks of age. Dr. Henderson believes that the simple treatment of inhalations of carbon dioxide and oxygen three or four times a day for the first few days after birth as a prophylactic would eliminate some of these deaths. He thinks it should be required by law just as the silver nitrate is required as a prevenative for blindness. The carbon dioxide would clear up the atelectasis , since the deep breathing would result from the treatment. Of course, the CO_2 must be only 10%, because it has been found by earlier

experimentation that when more than that amount was used, it acted as a depressant rather than a stimulant.[8]

Dr. Yandell Henderson, Ph.D., "Incomplete Dilatation of the Lungs as a factor in Neo-natal Mortality", Journal of the American Medical Asso., vol. 96, no. 7, page 495, 1931.

Dr. Nicholas Eastman has written an article that more or less refutes the suggestion of Dr. McCord in regard to the use of CO2 with O2 for the induction of breathing in atelectasis. He maintains that the onset of respiration at birth is conditioned by chemical, rather than physical factors, since Preyer's early theory that reflex stimulation of the respiratory center by trauma of labor is not in keeping with clinical experience, because palpitation, attempts at versions, and application of forceps fails to initiate breathing as long as the fetus is in uterus.

The view that skin irritation, due to exposure to air and change of temperature causes the infant to breath, was refuted by Ahlfeld who delivered several in warm saline water baths and found that respiration began as usual.

If the first breath were due to reflex action,

The onset should always begin simultaneously with delivery, instead of being delayed thirty seconds or more at intervals. Since the physical stimulation theories have failed to furnish a ratonal explanation, attention nas gone to the bio-chemical interpretation.

In the chemical nature of asphyxia neonatorum, it has been held till now that it was a condition of oxygen deficiency and excess of CO2 but without enough CO2 to excite normal breathing. This accounts for Dr. McCord's suggestion for the use of CO2 as well as O2. But till now, there have been no direct studies on the blood of asphyxiated children. Kane and Kreiselman have made such a study and make the clinical observation that inhalations of oxygen alone are efficacious in resusitating asphyxiated babies and even conclude that the use of CO2 is contraindicated. They explain their finds on actual blood tests, showing the consistently high amount of CO2 in the blood of the newborn (having used the blood of the umbilical cord with some type of oil method for the test) The primary blood chemical change in asphyxia neonatorum is reduction of oxygen content. Therefore, the chief theraupeutic indication is for oxygen. Physical stimulation should never be used unless the baby is pink when the treatment is initiated.

Dr. Nicholas Eastman, "Chemical Nature of Asphyxia Neonatorum", Bulletin of John Hopkins Hospital, volume 50, number 1, 1932.

Spina bifida, although a rare occurence in the general run of things, has been found to have a mortality rate of some 64% when the statistics for the cases which have had surgery are looked into. Dr. Coughlin of St. Louis has conducted some examinations on pathological embryos which have led him to say that there is only one case in a thousand which reaches term while there are at least five that are aborted before term. There seems to be no explanation for the origin of the condition--- some men claim trauma, temperature, position, or chemical composition as probable causes. Some doctors have held against operation, because of the very high mortality rate, but Dr. Coughlin advocates early operation, the earlier the better. He has found by personal experience that the operative deaths have been nil when he has operated within the first four days after birth. Of course, he advocates a particular surgical technical and a post-operative position that should be maintained for at least the first six days following surgery. The difficult thing is to convince the parents that such early

surgery is a prime requisite in the treatment of the condition. Any delay merely lessens the chance of the child to survive the operation.[10]

Dr. William Coughlin, " Spina Bifida ", Annals of Surgery, volume 44, number 6, 1931.

The specific causes for the deaths of infants are classified as follows;

1. Early infancy---31%
2. Diarrhea and enteritis---25%
3. Pneumonia and bronchitis---14%
4. All other causes---29%

The first day has a total of 10% of the mortality, and the first week accounts for the 25% of the deaths, the first month brings forth the 42%, and by the third month, the per cent has reached 60. Some people have estimated that there is a preventability of some 47%.

There is no doubt that the work of the various pre-natal clinics have done a great deal to reduce the rate of mortality. A specific example is given by the work at maternity center. A control group has been kept, and it was found that there was a reduction of 32% of the deaths in the first month. The lowering in the still-birth rate was even greater, being 42% lower; that is, the rate was 26 per 1,000 when pre-natal care was given, and the rate when there was no such care was 46 per 1,000.

Dr. Richard Bolt says, " An interesting phenomenon in regard to infant mortality manifests itself in times of depression--- the rate falls ". Of course, this may be caused by the continued wid espread popular education, but probably the much greater cause is that mothers stay at home due to the lack of jobs and thereby, breast feeding is much more prevalent at such times.

Dr. Bolt offers a community program which shall include the following;

1. Education in junior and senior high schools.

2. Mothrecraft classes in the public schools with demonstrations in the infant welfare centers and nursery schools.

3. Pre-natal education by monthly letters, pamphlets, and carefully edited press articles.

4. Individual instruction from nurse and doctor in homes and at pre-natal centers.

5. Encouragement of mothers to go early to physicians and to have regular followup work later through clinics, doctors, etc.

Such a program should prove of benifit in lowering the rate of infant mortality as well as the rate of maternal mortality.[11]

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[11] Dr. Richard Arthur Bolt, " The Infant Before, During, And After Birth", Amer. Jour. Public Health, Aug. '31.

It can readily be concluded from all the data given that a great deal is being done at the present time to reduce the rate of infant mortality, and it can also be seen that a great deal more can be accomplished by the establishment of more clinics, more programs for the community to take part in the lowering af the rates, and by more formal education, and state and county instruction, as well as further federal instruction. There could also be more work done by the different foundations that are already doing some important pieces of work.

I will now take up the matter of maternal mortality. The definition of maternal mortality is any death which is directly due to the child-bearing condition. For example, a woman might die of influenza before or after delivery, but her death would not be classified with the deaths of maternity.

Here, as in the case of infant mortality, the United States stands very high on the list, having a maternal mortality rate that far surpasses the rate for foreign countries. Again, it is a shame that a that is so rich in resources should have such a high rate. For example, to compare a few of the rates, it is found that the U. S. has a rate of six deaths per 1'000 while the rate for England and Wales is but 3.94, while Norway's rate is but 2.9 and Italy's rate is 2.4.

The chief causes for maternal mortality are puerperal septicimia and albumin-urea, two conditions which are known to be preventable with the proper care during the pre-natal period and during the delivery itself. Most of the other maternal deaths are due to accidents of pregnancy, which include such things as ruptured uteri and bladder, hemorrhage, etc. It is interesting to note that rate of deaths is lower when a mid-wife rather than a physician has done the delivery; the rates being 1.5 for the mid-wifes as compared with 4.3 for the total of both mid-wife and physician combined. The latter rate would be a great deal higher if the rate for the physicians was considered separately, because of the unusually low rate of the mid-wifes. It is thought that this great difference in rate is due to the fact that the mid-wives are not supposed to hasten the delivery in any way, nor are they supposed to handle any birth that is not perfectly normal.

The maternity center at New York again offers ample proof of what may be accomplished by good pre-natal care, this time applying to the mother. Some 4,726 women were considered and it was found that: 28% came for care before the fifth month,

32% were under care during the fifth and sixth months,

38% came in the remaining months before

the ninth month, and that

2% came in the ninth month.

The maternity center has as its two objects, first, to teach the public the vital importance of adequate maternity care, and secondly, to secure, in cooperation with all existing agencies, such care for all expectant mothers. I believe that their results show how marvelously they are attaining their ambitions. Out of the 4,726 patients, they had no mother die before delivery, only eleven deaths in the month following delivery, 4,596 live births, 123 still-births, 132 live births which died in the first month after delivery, 274 premature deliveries, and 61 miscarriages.

Of the original number of 4,726 patients, some 1,600 or a third had symptoms of abnormality. Of this number, fifteen per cent had albumin-urea, thirteen per cent had bleeding, edema, etc., five per cent had a high or increased blood pressure, and the rest fell into toxic conditions of all kinds. Again there was a control group, and it was found that mortality rate was much greater for the group that had not received the pre-natal care. In fact, the rate for the group which was control was very nearly some fifty per cent higher than for the other group; 2.4 per 1,000

who received the care and 6.2 per 1,000 for those that did not get the care.[12]

Taken from a pamphlet that has been put out by the maternity center in conjunction with Louis I. Dublin, statistician for the Metropolitan Life Insurance Company.

With all that can be done with the proper pre-natal care, it seems a shame that the extent of pre-natal care is not greater. For instance, the following chart shows that there is a great lack of pre-natal care;

% of each group having had no pre-natal care

Native white--------41%

Jewish--------46%

Polish--------86%

Italian--------77%

Other foreign born--63%

It is also interesting to note the number that have had the care of a physician, the care of a mid-wife or no care.

	Phy.	M.W.	No care
Native born	81%	17%	.4%
Foreign born	61%	36%	2.7%

[12]

Grace L. Meigs, "Maternal Mortality from All Conditions Connected with Child-Birth in the U.S. and Certain Other Countries," pub. no. 19, 1917.

Drs. Peckham and Stout have made a study of the late efects of the toxemias of pregnancy, excluding those of vomiting and eclampsia. Their object was to reduce the number of pregnancies complicated by nephritis. Of a series of 545 consecutive deliveries of toxemic patients, 66% were reexamined within four months to four years later, and some 40% were found to have a chronic nephritis. The differential diagnosis, nephritic and non-nephritic, can not be determined during the pregnancy or the puerperal period, although from the study, it was found that nephritis was found in the older groups, while two thirds of the non-nephritics were found in the women under twenty-five. Toxemic patients were found to have shorter labors, but the nephritic toxemias have a higher fetal mortality rate. Only 3% of the non-nephritic showed hypertension or albuminurea before the seventh month, while over one half of the nephritics showed abnormality. From all this, it was concluded that final diagnosis should be deferred till the fourth month at least after delivery.[13]

Drs. Peckham and Stout, " A Study of the Late Effects of the Toxemias of Pregnancy"(excluding those of vomiting and eclampsia) Bulletin of the John Hopkins Hospital, vol.49, number 4, 1931.

According to Dr. Haggard at Yale, 16,000 mothers die annually while 10,000 of these deaths are unnecessary, because the means of preventing deaths are not available in a country where there is such a world of material from which skilled obstetricians may be educated. He maintains that faulty shape and inclination of the pelvis is the main reason for difficult births. Dr. Vaughn supports this view by her study of purdah women and nomadic tribes as well as her study of primitive women.

The Ministry Of Health in England issued a statement that in England and Wales, during the last twenty year period in spite of better antepartum care and better mid-wifery, there has been little if any improvement in the maternal mortality rate. Dr. Vaughn therefore made a study of conditions and she concludes from her study that civilization itself is responsi ble for this condition; that is, that it creates conditions of life that so deform the pelvis that both mother and child are jeopardized by child-birth.

She began her study in Kashmir, where the Caesarean section is very common. She found that the women of the better and more civilized classes had the greater number of contracted pelvises and the greater number of complications. These women, owing to social custom, are kept almost imprisoned and do not get

proper exercise and diet, etc. The poorer classes in the same town, the fisherwomen who worked quite hard in the open air, who had sufficient diet, etc. never came to the hospital because of any complications in labor.

All over India, the upper class women were the only ones to have any complications from pregnancy, since there they are also living in seclusion.

In China, the Caesarean section is very very prevalent among the class that has its feet bound being, of course, the upper class of women.

Travelers in Africa reportthat negresses have their children and continue their work the same day. A negress in New York for instance simply couldn't do such a thing. There seem to be a very great number of negresses with contracted pelvises in New York-- that is, more than are reported in any one other city. The Carnegie Trust Report in 1917 gave examples from the islands of Shetland and Sky where women raised families of eight and ten with no difficulities ever in the deliveries, while in the crowded towns and areas, the women have every possible complication of pregnancy with the contracted pelvis as the great source of the origin of these complications.

Dr. Vaughn has gathered examples from all over the world as well as having studied the pelvises themselves and has reached the following conclusions from

her study; that, in the present day civilization, there should be a very careful watch of the diet from birth through childhood(to prevent rickets, which is one of the main causes of a deformed or contracted pelvis) In girls, the most rapid growth of the pelvis takes place from birth to five years, and then again from the eleventh to the fifteenth year. During this latter period, Dr. Vaughn advocates a very great deal of exercise as a means of preventing the wrong tilt of the pelvis and deformities due to no change in posture day in and day out. She has found that deformed and contracted pelvises have actually diminished the space for the fecal head by as much as a half and a third.[14]

Kathleen Vaughn, M.D., "Maternal Mortality in Relation to the Female Pelvis", Mind and Body , 1932 (a reprint from "Royal Society of Medicine)

Dr. Leventhal offers some additional notes to the usual ones concerning the diet in pregnancy. He has found in his practice that women who come to him to inquire why they are not able to become pregnant, that is, they have no pathological condition that would result in their infertility, he has discovered that the patient is not getting enough protein in the diet, the lack of which causes the lowering of the threshold of pregnancy. He has found that very strict vegeterians

if meat is added to the diet, will very soon increase the chances for pregnancy.

It has been found recently that vitamine B. has a particular value in that it stimulates the glandular tissue of the breasts. Many obstetricians these days give a patient yeast during the pregnancy in order to insure the future adequate supply of milk for the child.[15.]

Dr. Leventhal, " Diet and Pregnancy ", Journal of the American Dietetic Association, June, 1931

One often hears that women who suffer with diabetes should not have a family. This idea has deprived a great number of women who have been very anxious for a small family even of a great deal of happiness. Dr. Peckham advocates that under careful supervision, there seems to be no reason why the average diabetic woman should not pass through a restricted child-bearing career with a reasonable degree of safety.

He bases his conclusions on a study of some seventeen pregnancies of twelve diabetic women and has found that the diabetic condition may be somewhat aggravated inthe first third of the pregnancy but will show definite improvement as the term approaches. In these twelve women, there has only been one death due to the diabetes. He has also found that during the latter stages of the pregnancy, there is ordinarily such an improvement in the condition that

the dosage of insulin may be lowered. This improvement may persist for many months following the delivery and, in some cases, the insulin may even be dispensed with during the latter months and not have to be used again till after the period of lactation ceases.[16.]

Dr. Peckham, " Diabetes Mellitus and Pregnancy ", Bulletin of the John Hopkins Hospital, volume49, number 3, 1931.

Although a great deal is being done at present to prevent maternal mortality as well as to reduce the rate of the mortality, there is a crying need for a great deal more education in this field, both education of a formal nature and the informal type of education that can be given through clinics and demonstrations in various places. The necessary thing is to first get the interest of the people whom such programs would most vitally affect and then get the interest of the community at large. If there is not an interest in the program that is to be presented, it will be a great deal less successful than one which has gotten this element. The community as a whole must work together and only in this way will the education be brought home to the largest number of people who really need the knowledge.

It can readily be seen that if the proper care were available for all pregnant women that the mortality rate for infants as well as mothers could be very greatly reduced. The object of all programs should be to make the people realize the need for such care, and then to make it available for them. Dr. Emmons, at the seventh annual meeting of the American Association for the Study and Prevention of Infant Mortality, at Milwaukee gave the following suggestions for a program:

1. The confidential notice to the health authorities of a pregnancy so the proper care could be attainable at the earliest time.
2. The seeking of health insurance with some maternity benifits.
3. The improvement of the teaching in medical schools and in the district.
4. The development of methods and opportunities for teaching the fathers.
5. The teaching of the older children in the junior and senior high schools.

I think that all the suggestions of Dr. Emmons are very good ones and that if all programs were very similar to the above, some wonderful results could be obtained.

BIRTH REGISTRATION AREAS. (To 1928)

	1915	-16	-17	-18	-19	-20	-21	-22	-23	-24	-25	-26	-27	-28
Alabama													—	—
Arizona												—	—	—
Arkansas													—	—
California					—	—	—	—	—	—	—	—	—	—
Colorado														—
Connecticut	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Delaware							—	—	—	—	—	—	—	—
Florida										—	—	—	—	—
Georgia														—
Idaho												—	—	—
Illinois								—	—	—	—	—	—	—
Indianan			—	—	—	—	—	—	—	—	—	—	—	—
Iowa										—	—	—	—	—
Kansas			—	—	—	—	—	—	—	—	—	—	—	—
Kentucky			—	—	—	—	—	—	—	—	—	—	—	—
Louisiana													—	—
Maine	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Maryland		—	—	—	—	—	—	—	—	—	—	—	—	—
Massachusetts	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Michigan	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Minnesota	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Missippi							—	—	—	—	—	—	—	—
Missouri													—	—
Montana														
Nebraska						—	—	—	—	—	—	—	—	—
Nevada														
New Hampshire	—	—	—	—	—	—	—	—	—	—	—	—	—	—
New Jersey							—	—	—	—	—	—	—	—
New Mexico														

	1915	16	17	18	19	20	21	22	23	24	25	26	27
New York	—	—	—	—	—	—	—	—	—	—	—	—	—
North Carolina			—	—	—	—	—	—	—	—	—	—	—
North Dakota										—	—	—	—
Ohio			—	—	—	—	—	—	—	—	—	—	—
Oklahoma													
Oregon					—	—	—	—	—	—	—	—	—
Pennsylvania	—	—	—	—	—	—	—	—	—	—	—	—	—
Rhode Island	—	—	—	—			—	—	—	—	—	—	—
South Carolina					—	—	—	—	—	—			
South Dakota													
Tennessee													—
Texas													
Utah			—	—	—	—	—	—	—	—	—	—	—
Vermont	—	—	—	—	—	—	—	—	—	—	—	—	—
Virginia			—	—	—	—	—	—	—	—	—	—	—
Washington			—	—	—	—	—	—	—	—	—	—	—
West Virginia											—	—	—
Wisconsin			—	—	—	—	—	—	—	—	—	—	—
Wyoming								—	—	—	—	—	—