

## THE DEVELOPMENT OF PRENATAL CARE IN DETROIT

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**I**N 1920 the United States Census Report showed a maternal mortality rate of 8 per 1000, the result of childbearing. During the same period in Detroit there were 50.3 stillbirths per 1000 living births, and 43 infants out of 1000 born alive died during the first month of their lives. The maternal death rate from childbearing in Detroit has averaged 6.75 for a number of years. This appalling death rate intimately associated with childbearing is sufficient to demonstrate that childbearing is a public health problem.

Up to comparatively recent date, prenatal care has been considered a branch of obstetrics, and its objective was mainly to reduce maternal mortality and morbidity. In Detroit the infantile mortality associated with childbirth as stillbirths and neonatal deaths, is thirteen times as great as the maternal mortality resulting from childbirth. The pediatrician has come to realize that over one-half of the deaths occurring in the first year of life occur during the first month. Most of these deaths are the result of conditions which prevail before the birth of the child. So it has been accepted by pediatricians, as well as health workers, that in order to reduce infant mortality appreciably, the causes of the high neonatal mortality must be sought and controlled through prenatal care.

The City of Detroit, through its Department of Health, is making an effort to decrease maternal and infant mortality which results from neglected pregnancy and delivery. This department, by direct action, and not merely by supervisory function, is reducing maternal and infantile mortality and morbidity among the indigent of the city. This work is unique in that the municipality assumes the responsibility for bringing live, healthy babies into the world for its indigent classes which are usually neglected at that time. Detroit is pointing a way to municipal preventive medicine for those of the childbearing period who would otherwise be neglected or receive only incompetent care.

In 1911 the Department of Health of the City of Detroit started a prenatal clinic in an effort to reduce infant mortality. The usual prenatal clinic is an outgrowth from an obstetric service, and its objective is mainly a reduction of maternal mortality and morbidity resulting from childbirth. In Detroit, the City Municipal Prenatal Clinic was established to combat the high incidence of stillbirths and neonatal deaths which result from causes which are active during pregnancy, and before aid can be given by ordinary baby care. Prenatal care here is properly a division of infant welfare, instead of an obstetric department as in other places. The work is done by obstetricians. The obstetric part of the work is not lost sight of, but the more important side of this work, infant welfare, is stressed according to its importance.

Prenatal clinics have been established by the city in various poor sections of the city. Today there are seven such clinics. The major part of this work is done at Station I, the largest indigent section.

In 1918 the Department of Health of Detroit provided a maternity pavilion in the Herman Kiefer Hospital. Thus the city has provided care for the indigent pregnant women from the time of conception, through pregnancy, delivery, and the postnatal periods. Over 1300 patients are cared for in this pavilion annually.

In this prenatal work an effort is made to individualize every case. The preliminary routine of family, personal, and obstetric histories, physical examinations, laboratory findings, including a maternal blood Wassermann, as well as the social and economic status of the prospective mother, gives an insight into the probable outcome of pregnancy. In the subsequent biweekly consultations the outlook, especially from the fetal standpoint, is clarified, and the needs of both mother and child stand forth in more distinct outline as the entire ego and environment of the mother become known. All the routine examinations in these clinics are made by physicians, not by nurses. As this work has proceeded, the importance of fetal rights and demands has impressed itself on us to a greater degree. As the possibility of attaining better results for the newborn was appreciated, the major part of this work has shifted to infantile prophylaxis, that is, reduction of infantile mortality and morbidity.

#### REDUCTION OF MATERNAL MORTALITY

In order to demonstrate the benefit to the community of prenatal care in the reduction of maternal deaths, Table I has been compiled. The maternal deaths due to childbirth in the entire city are compared with deaths from the same causes among women who have attended the city's prenatal clinics during the years 1922, 1923, and 1924. It will be seen that the maternal death rate from all causes following confinement for the entire city was 6.75 per 1000 deliveries, while among the women who attended the clinics, the rate was only 3.5 per 1000, a reduction of about 50 per cent. The clinics care for 6 per cent of all pregnant women in the city.

There is a group of maternal deaths classed as accidents of pregnancy and labor which is almost irreducible, even with good care. This includes intercurrent disease, hemorrhages, and accidents of labor. For the past three years the maternal death rate for this class in the entire city has been 2.33 per 1000 deliveries. The rate of 0.79 per 1000 resulted after prenatal care. In this class there is a possibility of greater reduction.

In the three year period there were four deaths from eclampsia among 5032 mothers cared for in the clinics. Prenatal care reduced this cause of death from 1.06 per thousand for the entire city to 0.79 per 1000 for clinic cases. Death from eclampsia was reduced 24 per cent, even though some of the clinic cases are not in complete control.

The greatest danger to the mother from childbearing is sepsis. Table I shows that 50 per cent of the maternal deaths from childbirth were due to sepsis. In the entire city the rate of maternal deaths from sepsis alone for these years has been 3.24 per 1000 births. Among the mothers who attended prenatal clinics, the rate was 0.79 per 1000 births. This reduction of 75 per cent in maternal deaths due to puerperal sepsis has been accomplished mostly through adequate provision for delivery for all clinic patients, and hospitalization for all abnormal cases. The reduction of the maternal death rate (almost 50 per cent) as the result of prenatal care is remarkable when the character of the patients is considered. These come from the poorest class and include over 12 per cent of mothers who have syphilis. Over 30 per cent of all mothers suffer from some marked physical abnormality, such as syphilis, tuberculosis, gonorrhoea, cardiac lesions, toxemias, and pelvic contractions.

TABLE I

## MATERNAL MORTALITY FOR ENTIRE CITY AND FOR PRENATAL CLINICS

	1922		1923		1924		TOTAL		DEATH RATE PER 1,000 CONFINEMENTS	
	CITY	PRENATAL CLINICS	CITY	PRENATAL CLINICS	CITY	PRENATAL CLINICS	CITY	PRENATAL CLINICS	CITY	PRENATAL CLINICS
Total deaths	186	5	196	5	207	8	589	18		
Puerperal sepsis	81	2	104	0	103	2	288	4	3.24	0.79
Puerperal eclampsia	34	0	26	0	34	4	94	4	1.06	0.79
Other puerperal causes	71	3	66	5	70	2	207	10	2.33	1.98
Rates per 1,000 confinements	6.8	3.1	6.7	3.1	6.8	4.2	6.75	3.5		

TABLE III

## INFANT MORTALITY RATES FOR WHITE AND COLORED FOR THE ENTIRE CITY AND STATION I, 1923-1924

	1923					1924					1923-1924				
	TOTAL CITY	STATION I		CITY AT LARGE EXCLUDING STATION I		TOTAL CITY	STATION I		CITY AT LARGE EXCLUDING STATION I		TOTAL CITY	STATION I		CITY AT LARGE EXCLUDING STATION I	
		White	Colored	White	Colored		White	Colored	White	Colored		White	Colored	White	Colored
Living births	28,180	331	772	26,267	810	30,500	389	848	28,131	1,132	68,680	720	1,620	54,398	1,942
Stillbirths	1,486	9	34	1,331	112	1,510	10	34	1,349	117	2,996	19	68	2,680	229
Total	29,666	340	806	27,598	922	32,010	399	882	29,480	1,244	71,676	739	1,688	57,078	2,171
Stillbirth rate	52.8	26.5	42.2	48.2	121.5	49.7	25.7	46.0	48.0	103.0	51.2	26.1	44.1	48.1	112.2
Neonatal deaths*	1,224	9	34	1,126	55	1,303	9	17	1,194	83	2,527	18	51	2,320	138.0
Death rate*	43.5	27.2	44	42.9	67.9	42.7	23.1	20.1	42.5	73.2	43.1	25.1	32	42.7	70.5

\*Under one month of age.

REDUCTION OF MATERNAL MORBIDITY

It is impossible to state the exact rate of maternal morbidity following childbirth. It is estimated that morbidity sufficient to affect the health of the mother is five or six times as great as the number of maternal deaths. The morbidity results mostly from sepsis, laceration, and hemorrhage. As prenatal care provides adequately for delivery, lacerations are properly cared for, and seldom cause subsequent illness. As the death rate from puerperal sepsis can be reduced 75 per cent

TABLE II

INFANTILE DEATH RATES FOR ENTIRE CITY	AND STATION I FOR THREE YEARS			
	1922	1923	1924	TOTAL
Living births in city at large.....	25,910	28,114	30,500	84,524
Stillbirths in city at large.....	1,367	1,477	1,510	4,354
Stillbirth rate per living births in city at large .....	53	52.8	49.7	51.8 Av.
Living births of patients attended at Station I .....	1,037	1,060	1,237	3,334
Stillbirths of patients attended at Station I .....	33	43	44	120
Stillbirth rate per living births of patients attended at Station I.....	32	39	35.8	35.6 Av.
Neonatal deaths before one month of age in city at large.....	1,177	1,223	1,303	3,703
Rate of neonatal deaths before one month of age in city at large.....	45.4	43.5	42.7	43.9 Av.
Neonatal deaths before one month of age in cases attended at Station I.....	18	43	26	87
Rate of neonatal deaths before one month of age in cases attended at Station I.....	17	40.6	21	26.2 Av.
Deaths under one year in total city.....	2,276	2,466	2,380	7,122
Infant mortality rate per 1,000 living births total city (infants under one year of age)	87.7	87.7	78.2	84.5 Av.

through prenatal care, we may assume that there is at least as great a reduction in maternal morbidity resulting from sepsis. In each case postnatal examination at the termination of involution discloses any abnormal condition of the mother. We find that over 3 per cent of all patients have damaged kidneys, and these patients are given suitable advice and care. Provision is always made for adequate care of any morbid condition after delivery, thus lessening the number of mothers invalidated as the result of childbirth.

REDUCTION OF STILLBIRTHS

To show the effect of prenatal care on infant mortality, Tables II and III have been devised.

During the years 1922, 1923, and 1924 there were 84,524 living births recorded in the city, and 4,354 infants were born dead. During the same period there were 3,334 living and 120 stillborn babies from mothers who attended Station I of the Department of Health. The incidence of stillbirths for the entire city during that period was 51.8 per 1000 living births, and 35.6 per 1000 for infants whose mothers had prenatal care. This was a reduction of 16 stillbirths per 1000 living births, the result of prenatal care.

There is a great difference between the rates of stillbirths and neonatal deaths among the colored and white infants. As 70 per cent of the attendance at prenatal clinic Station I is colored, it is necessary to separate the records of the two races to show the real decrease in infant mortality in each race as the result of prenatal care. Table III indicates the decrease of deaths among infants after prenatal care for each race for the years 1923 and 1924. This shows a reduction from

48.1 stillbirths per 1000 births for unattended white patients to 26.1 per 1000 births among those born after prenatal care. This is a reduction of 22 stillbirths per 1000 births among white infants, attributable to prenatal care. The incidence of stillbirths among colored infants in Detroit whose mothers had received no prenatal care was 112.2 per 1000 births. Among the colored infants whose mothers had received prenatal care there was an incidence of 44.1 stillbirths per 1000.

#### REDUCTION OF NEONATAL DEATHS

In the United States 50 per cent of the deaths of infants under one year of age occur during the first month of their lives. This important first month of infantile life is known as the neonatal period. Table II shows a reduction of 17 neonatal deaths per 1000 births as the result of prenatal care.

In order to understand the real benefit of prenatal care in the reduction of neonatal deaths, it is necessary to separate the white from the colored race.

Table III shows an incidence of 42.7 neonatal deaths per 1000 births among the white infants whose mothers had no prenatal care. For the same class who had prenatal care the neonatal death rate was 25.1 per 1000 births. This shows an actual reduction of 17 neonatal deaths per 1000 among white infants.

Among the colored infants whose mothers had no prenatal care, there was an incidence of 70.5 neonatal deaths per 1000 births. Those colored infants whose mothers had prenatal care had an incidence of 32 neonatal death per 1000 births. This shows a reduction of neonatal deaths among colored infants of 38 per 1000 births.

The high incidence of death among colored infants corresponds with that shown by the birth statistics of the Bureau of Census of the United States. The causes of the high rate in this race are the high incidence of lues and prematurity, as well as ignorance in the care of the newborn. The decrease in infant mortality among colored infants in this clinic points the way to a general reduction in infant mortality in the United States by means of prenatal care.

#### CONTROL OF INTERCURRENT DISEASES IN PREGNANCY

Over 30 per cent of all women attending these clinics have some intercurrent disease or abnormality which might affect mother or child or both adversely, so all maternal diseases are diagnosed prenatally and cared for as soon as possible. Renal, heart, and lung diseases, syphilis, gonorrhea, and the various infections are treated as early as possible because of their effect on pregnancy, as well as their influence in producing premature or stillborn infants. Patients with appendicitis, cholecystitis, pelvic infections, syphilis, and pulmonary infections are hospitalized at once because of the adverse influence of these diseases on pregnancy. Not infrequently are scabies or pediculosis found, and the field nurse discovers several members of the family suffering from the same condition, for which the entire group is treated.

Both clinic and field nurses are constantly on the lookout for contagion in order to control it before it can spread or endanger the expectant mother. In the recent smallpox epidemic in Detroit every patient in the prenatal clinics was vaccinated. It was discovered that 50 per cent of the colored women, who had recently come from the south, had never been vaccinated. Because of this neglect in public health service, vaccination has been made a routine for all new patients who have not been successfully vaccinated within five years.

#### CONTROL OF SYPHILIS

During the past four years 5,440 pregnant women were cared for at Station I of the Department of Health. Seven hundred seventy-eight (14 per cent) of these were syphilitic. The high incidence of this disease is due to the fact that the

majority of the clinic cases are colored women. It was possible to follow 670 (86 per cent) of the entire number of luetic mothers through pregnancy, labor, and postnatal periods to six weeks after delivery when the final postnatal examination of mother and infant was made.

Almost all of these luetic mothers came to the clinic with no subjective symptoms, and did not know they were luetic. History, taken carefully, has shown that the syphilitic mother has averaged more than two stillbirths or miscarriages because of her infection before her condition had been diagnosed. Fifty-six per cent of all luetic mothers give positive luetic histories. Even with negative blood Wassermann report, 14 per cent of these syphilitic mothers were diagnosed by means of history and physical findings. Blood Wassermann tests are made on all women on admission to the clinic. In suspicious cases with a negative blood Wassermann test, provocative blood Wassermann, spinal fluid Wassermann, and luetin tests are made. Recently the Kahn precipitation test is used as an adjunct to the blood Wassermann test to verify doubtful cases.

As soon as a positive diagnosis of syphilis is made, the expectant mother is sent to the Venereal Clinic of the Department of Health for intensive treatment with arsphenamine. This is done regardless of the period of pregnancy. It is desirable to diagnose and treat syphilis in the pregnant woman within the first sixteen weeks of pregnancy, as it is believed that transmission occurs only through the placenta and a minimum of three months is required for that transmission.

TABLE IV

BABIES BORN FROM SYPHILITIC MOTHERS 1921-1924 IN STATION I,  
5,440 DELIVERIES,—778 LUETIC (14%)

	NO TREAT- MENT	AT LEAST ONE COURSE OF TREATMENT	TOTAL
Living births _____	311	244	555
Stillbirths or miscarriages_____	93	22	115
Total _____	404	266	670
Infantile death rate per 1,000 births_____	230	82	Reduction 148

Table IV shows the results of the attempt to control syphilis through maternal transmission during the years 1921-1924, inclusive. Of the 670 syphilitic mothers whose records were complete during these four years, 404 had either no treatment or inadequate treatment because of delinquency or late admission to the clinic. These gave birth to 311 living infants, and there were 93 miscarriages or stillbirths. This is a primary infant mortality of 230 per 1000 births. Two hundred and sixty-six pregnant women had at least one course of antiluetic treatment, consisting of a minimum of three neosalvarsan and eight or more mercury injections. These gave birth to 244 living babies at or near term, and 22 miscarriages or stillbirths occurred,—a primary infant mortality of 82 per 1000 births. It must be explained that many of these mothers did not have as complete treatment as they should, but as complete as possible, following late clinical admission or delinquency in treatment. In spite of this, there was a definite reduction of 148 infantile deaths per 1000 births among syphilitic patients as a result of treatment during pregnancy.

In fifty-one stillbirths which occurred in the third period of pregnancy (twenty-eight to forty weeks' development), only three of the mothers had had treatment. There were only seven miscarriages (sixteen to twenty-eight weeks' development) among those who had had a complete course of treatment, consisting of a minimum of six arsphenamine treatments.

Cord Wassermann tests are obtained as far as possible as a check on primary

infantile infection. Seventy-three per cent of babies of syphilitic mothers gave a positive cord Wassermann test because of inadequate, or no maternal treatment.

Among the colored mothers who have attended the clinic there has been a reduction in the incidence rate of syphilis. This reduction is attributed to cures among mothers who have returned for care subsequent to being treated in previous pregnancies.

From clinical experience it can be stated that the transmission of syphilis from mother to fetus can be prevented by early and adequate maternal treatment, started in the first period of pregnancy (under sixteen weeks). This points the way to the eradication of hereditary syphilis.

But adequate prenatal care does not end with the attempt to prevent transmission of syphilis to the newborn. It teaches the mother the dangers of syphilis, the possibility of transmission, and the need of treatment to produce a cure. The other members of the family, especially the husband and children, are referred to clinics for diagnosis and care. Always the mother is given an explanation of the disease as far as she can understand, and the danger of transmission is pointed out to her.

#### TOXEMIA OF LATE PREGNANCY

Marked cases of toxemia of late pregnancy average from 3 to 4 per cent of all cases. The rather low incidence of this condition is due to the effect of prenatal control. Quite often a woman who has had renal toxemia in one pregnancy shows little toxicity in the next pregnancy because of early control in clinic care. The deaths are uniformly due to carelessness on the part of the patient or loss of clinical control. In cases of severe toxemia, an effort is always made to persuade the patients to have hospital care. The infantile death rate in cases of severe toxemia is uniformly over 200 per 1000 births, even with good supervision. The placental changes and maternal toxemia are the causes of this high infantile death rate. It is doubtful whether this can be reduced materially with the best of prenatal care. With good cooperation of patient, clinic, and hospital, the maternal mortality should be almost zero, as it is in private practice.

#### HEART LESIONS

In Station I of the Department of Health during the past two years, 211 (6.6 per cent) of 3,186 pregnant women were found to have heart lesions. Most of these women had never had a thorough physical examination before, and most of them had never had either a diagnosis or any instruction as to the hygiene necessary to prolong life.

There was a primary infant mortality of 8 per cent, the result of maternal heart lesions. There were two maternal deaths from heart lesions, and two mothers died suddenly several months after delivery.

In the early diagnosis of maternal heart lesions, with careful supervision during pregnancy, and proper provision for delivery, both infantile and maternal mortality are reduced. The greatest value to the community in prenatal care of women suffering from heart lesions is the diagnosis of the conditions and of patient instruction in the care of their health subsequent to pregnancy.

#### TUBERCULOSIS

In three years 39 tuberculous women were discovered in 4,520 pregnant women. This incidence of 8.6 per 1000 is high, due to the fact that a number of tuberculous women are referred to this clinic from the Tuberculosis Clinic of the Department of Health. In this group there were no maternal deaths, though there were three fetal deaths. This gives a primary mortality of 77 per 1000 births in tubercular mothers. No therapeutic abortions were performed. Most of these patients were

admitted in the second trimester of pregnancy. It is believed that there is greater danger to the mother from an induced miscarriage than from a normal delivery at term. The expectant mother who is tuberculous is provided with nourishing food, rest in bed, and hospital delivery. By conserving maternal vitality through pregnancy, a material decrease in infant mortality has resulted. After the care given them during pregnancy, a number of tuberculous mothers have increased in weight and improved in health, in spite of childbearing. The child is not allowed to nurse, but care is taken to supervise food and hygiene of the infant from the time of birth.

#### CONTRACTED PELVES

It is a question whether pelvic contractions are a greater source of danger to mother or to child. Certainly the infantile mortality resulting from this abnormality is many times greater than the maternal. However, the high incidence of maternal morbidity resulting from undiagnosed and improperly cared for pelvic contractions is one of the urgent reasons for adequate prenatal care. In Station I almost 5 per cent of all mothers had pelvic contractions sufficiently marked to make normal delivery of a mature fetus problematical. All of these are forewarned of the possibility of a difficult or operative delivery. Adequate provision is made for hospital delivery, and the hospital is given the report of conditions found. Of the 2,462 mothers who could be traced in the past two years, there were found only four primary infantile deaths in 136 instances of contracted pelves. Among these there were two maternal deaths, one from pneumonia and one from sepsis following abdominal cesarean section. There were two cases of parametritis in this group. There was no permanent morbidity among the mothers as the result of delivery in cases of pelvic contraction.

#### PREMATURITY

During two years 41 premature infants died in the neonatal period. This is 60 per cent of the total 68 deaths in this period. Almost half of the neonatal deaths of premature infants were due to syphilis. So, the principal means of reducing neonatal deaths is by the prevention of premature births. This is done by the treatment of syphilis, control of toxemia, effort toward the prevention of infections, providing proper nutrition for the mother, as well as lessening her work during the latter months of pregnancy, and preventing conditions generally which tend to induce premature labor.

#### BREAST FEEDING

Breast feeding is essential for the newborn infant, especially the premature or sickly one. Many mothers have the idea that substitutes for breast feeding are as good as breast milk, and the bottle is an easy way of shirking the responsibility of breast feeding. This is frequently disastrous to the infant, often resulting in malnutrition and sometimes in death. Prenatal care teaches the expectant mother the importance of nursing her baby, and that breast milk is the best for her child. It also teaches her how to prepare her breasts for nursing. All mothers from the prenatal clinics start nursing their babies after delivery. Only those with insufficient or poor milk are changed to formula feeding. This is done under medical supervision, usually from a Department of Health Baby Clinic. The reduction of deaths in the neonatal period is due to the high percentage of breast feeding as much as to anything else.

#### NUTRITION

The importance of this subject to both mother and child is so great that it cannot be emphasized too often. A pamphlet on prenatal care is given each prospective mother. This contains general instructions as to the best diet during pregnancy. But



no list of instructions can be complete enough to cover all phases of nutrition and diet during pregnancy, so in these clinics individual instructions are given by the attending physician as the condition demands.

In early pregnancy proper nutrition is essential in controlling hyperemesis. In the last eight thousand prenatal cases at Station I, no therapeutic abortion has been advised for hyperemesis gravidarum. This was largely the result of proper dietary instructions. The majority of toxemias of late pregnancy can be controlled through diet and elimination. In the clinic toxemia in the majority of cases is held in control through a properly directed diet. So also the reduction of infantile deaths in toxemias of late pregnancy is due mostly to dietary regulation which permits pregnancy to continue to a time when a viable child can be born.

#### IMPORTANCE OF PRENATAL RECORDS

The proper tabulation of records through prenatal clinics is essential in obtaining knowledge of the causes and prevention of maternal and infantile mortality and morbidity. Such records are essential for the study of the health of the individual, and as a benefit to public health. In our records 100 per cent of all births following attendance at the municipal prenatal clinics are registered, whether they are living infants or stillbirths; whereas in the entire city only 95 per cent of all births are registered. In the clinical records, pregnancies terminating before the end of sixteen to twenty-eight weeks of development, and in which the fetus is 16 to 35 centimeters long, are classed as miscarriages. Pregnancies terminating between twenty-eight and thirty-eight weeks are called premature deliveries. Infants born dead after twenty-eight weeks of development, and with a length of more than 35 centimeters are classified as stillbirths. It is believed that this classification will ultimately be used for both birth and death records, as it is accurate, and such records based on accurate measurements will serve to aid in the analysis of health statistics. While the neonatal period is accepted as the first four weeks of life, our clinics use six weeks for the period of tabulating the last infantile records of prenatal care. As the last examination of the mother is made at the termination of involution six weeks after delivery, it is easiest to examine and record the infantile condition at the same time.

Tabulation of death and morbidity records at six weeks after delivery is completed whenever possible. The mother is given a complete examination to finish her record, as well as to advise her as to her condition. The result of the cord Wassermann test is recorded, except when it is neglected in home delivery. In the case of infants who die or are stillborn in the hospital, autopsy findings are recorded. An effort is always made to secure and record a definite cause of death, whether in abortion, miscarriage, stillbirth, or neonatal death. As far as possible an effort is made to learn whether the cause of infantile death antedated delivery or whether death was the result of delivery, or neglect in the neonatal period. Also the relation of antenatal pathology to fetal death or morbidity is noted. Any congenital or acquired abnormal condition of the infant is noted, and the child is referred to the proper agency for care.

Complete records are being made of the prospective health of the individual even before his birth. This is a stable foundation for the health registration of the individual. All subsequent health supervision must be based on this first and most important record which antedates birth and extends through the most dangerous (neonatal) period of life. Eventually a health pedigree will be worked out for the individual, starting at the prenatal record, going through infantile, preschool and school records, to further records to be made at maturity. Already the prenatal records have been used by physicians and clinics in the care of the child who has had prenatal supervision.

## HEALTH COOPERATION

In the care of the expectant mother, cooperation is necessary with all other agencies which may be of service to her or her child. The most common need is dental care, as over 80 per cent of all women attending prenatal clinics in Detroit require immediate dental service. So far as possible these women are referred to the nearest dental clinic for care. All tubercular women and those in whom the disease is suspected are sent to the nearest tuberculosis clinic for diagnosis and care. Those needing hospitalization are placed in sanatoria as soon as possible. Patients with venereal diseases are sent at once to the Municipal Venereal Clinic for care. Patients requiring surgical care are sent to a Receiving Hospital as occasion directs, and those in need of medical treatment are sent to various hospitals for care. Patients who are able to pay are referred to private physicians. Those who can afford to pay a small fee are sent to private hospitals for delivery. Indigent patients are delivered at the Herman Kiefer Hospital, a municipal institution. All necessary information is sent with each case. Those living outside the city are referred to visiting nurses or the Red Cross for home care. In every possible way cooperation is perfected with every health agency in the city and state. Not only is effort made to give the individual expectant mother the best possible health supervision during pregnancy, but every agency which may be of service to her health or that of her unborn child is brought to her aid in every way that necessity directs.

## SOCIAL SERVICE

The health of the individual depends largely upon his social and economic status. To secure health during pregnancy, and healthy progeny, these conditions must be known, and if necessary, aid must be given to secure proper care and environment. For this purpose social service is needed among the poor. In Detroit prenatal clinics, proper nutrition, clothing, and home conditions are provided. Also proper delivery conditions are secured and minor children are cared for while the mother is in the hospital.

Cooperation is extended to every social service agency which may help the expectant mother. In Detroit twenty-four agencies are in cooperation with the prenatal clinics in the effort to aid the mother during and following this period. Agencies which protect the illegitimate mother or the deserted mother are of great value in protecting and promoting the health of mother and child.

## EDUCATION IN PRENATAL CARE

The prenatal clinics of the Department of Health of Detroit register 6 per cent of all pregnant mothers in the city. Of course, many of these commence attendance so late that proper supervision is not possible. Also a number of registered mothers are lost on account of their leaving the city or moving. Actually about 4 per cent of the expectant mothers of the city receive adequate prenatal care through these clinics.

As only the indigent class attend, the number will never be great. But as the results of the care given in these clinics can be compiled, they must be used to demonstrate the value of such care. Besides the good they accomplish for the expectant mothers and infants among the poor, these clinics should be considered as laboratories in prenatal care, the results of which are to be used as guidance by the large percentage of women of the more fortunate classes who employ physicians.

It is estimated that approximately 20 per cent of the expectant mothers of Detroit receive adequate prenatal care. These include the wealthy who pay for and receive good care during pregnancy, and the poor who attend free clinics. The 80 per cent who receive inadequate or no prenatal care belong to the great middle class of working people, the fathers being mostly factory workers who can pay for

this care. The reason that this 80 per cent is neglected in pregnancy is twofold: neglect on the part of the family physician and negligence on the part of the expectant mothers.

As prenatal care is of recent origin, many of the older physicians are not familiar with its advantages and methods of procedure. The Detroit Obstetrical Society is trying to correct this professional neglect by giving the general practitioner education on this subject through the County Medical Society. The medical students of the Detroit College of Medicine are given intensive training in prenatal care at Station I.

In order to educate the neglected 80 per cent of expectant mothers, the Mother-Daughter Association of Detroit has agreed to work with the Detroit Obstetrical Society in holding meetings to inform women of the advantages of prenatal care and the care an expectant mother should receive from her physician. The Mother-Daughter Association includes almost all women's clubs in the city. During the year 1925, speakers from the Detroit Obstetrical Society spoke on prenatal care to over 1,300 women at eighteen meetings. During the same period of time nine talks by members of the Council of the Mother-Daughter Association were given to over 1,100 women to urge prenatal education for all parents. Also, copies of "The Prospective Mother in the House of Health," issued by the American Child Health Association, were sold to prospective mothers at these meetings.

The Detroit Community Union has appropriated funds for the year 1926 to cover the expenses of furthering educational work in prenatal care through the Mother-Daughter Association.

The Detroit Obstetrical Society has issued an outline for a talk for its members to use when speaking to women's clubs. This gives detailed information as to the advantages of prenatal care, and the speaker urges his audience to make use of modern prenatal care from the onset of pregnancy.

#### COMMENT

Prenatal care is in its infancy. When properly understood and generally followed, it will be the greatest aid in making childbirth safer for mother and child. The objective of the medical profession should be to train its members to give modern prenatal care, and to educate all people as to the benefits of this care. There must be close cooperation between the medical profession and the public in the furtherance of prenatal care. Lay organizations are necessary to induce the public to demand good medical care during pregnancy. More and better maternity hospitals are needed to provide modern facilities for childbirth for women who have had adequate prenatal care.