

PRENATAL CARE OF RURAL MOTHERS¹

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AN unusual opportunity to obtain information from a representative group of rural mothers on the amount of prenatal supervision by doctors or public health nurses was afforded by the collaboration of the Milbank Memorial Fund with the United States Public Health Service in the special epidemiological studies being made in a rural area of Cattaraugus County, New York. Continuous observation of nearly all families living in five rural townships and one small incorporated village, a total population of about 5,000, renders it possible to collect special information about the medical attention received by practically all women who bear children within the period of study. Other studies have been based on a special investigation of maternal and neo-natal deaths or on maternity cases registered in clinics, with nursing organizations or hospitals. Such studies have been of real value, but give no data for the large numbers of mothers who did not die or were not assisted by any special organization. In this study certain data relating to health and medical supervision in the prenatal period were obtained from an *unselected* group of mothers in a typical rural community. It is believed that this study is unique in this respect.

This report presents a preliminary analysis of 137 pregnancies for which prenatal records were obtained during 1930. Some of the births had occurred as early as March, 1929, and the most recent ones were in November, 1930. Accordingly, this series of pregnancies does not give a complete record of births for a given population over a definite period of time.

¹From the Division of Research, Milbank Memorial Fund.

The study is still in progress, and, at a later date, a more complete analysis will be made.

The mother was asked to give information on the following: month of pregnancy in which a physician was first consulted and number of visits; reasons for not having prenatal care; supervision by the public health nurse; sickness during the prenatal period; the number of previous pregnancies and whether they resulted in miscarriages, premature births or stillbirths; attendant at delivery for previous births; attendant at this delivery; and complications. No data are available from the physician as to the nature of the medical care given or as to the health of the mother; the information on these points is not so precise as could be desired. This analysis is primarily concerned with the quantity of service and opportunity of the doctor to give service.

Of these 137 pregnancies, one terminated in a miscarriage at $5\frac{1}{2}$ months, seven in stillbirths, and the remainder in live births. The number of stillbirths gives a rate nearly twice as high as in the County as a whole, but this presumably was a chance occurrence since the official statistics for previous years do not indicate an unusually large number of stillbirths in this area. All births except three were attended by a doctor; one of the three was attended by a midwife, one by the mother's mother and one by a neighbor. Nine mothers went to a small maternity home in the village, and fifteen went to a hospital outside the area for confinement.

Prenatal Care. Within this area there were only three resident physicians but many others were easily available. One section of the area borders on the city limits of Salamanca, a city of approximately 10,000 population, and other sections are not far from villages where there are doctors. Ten miles is about the maximum distance from any home to a doctor. The County has had a County Health Department since 1923

with a generalized nursing service. The nursing service has been much in excess of that provided by the usual County Health Unit, with one nurse for every 3,000 to 4,500 population. This section of the County had the full-time service of one nurse and about one-half time of another during the period covered by this record. Undoubtedly many mothers in the area had had the benefit of instruction by the nurses on the value of adequate care during pregnancy. No prenatal clinics were held in the district, the official health services being limited to those given by the public health nurse. During the two years preceding the period of record, there was a medical director for maternal and infant hygiene in the County who carried on special educational activities throughout the County.

Forty-four per cent of the mothers in our area registered with a doctor before they were five months pregnant, and 30 per cent did not consult a physician before their confinement. The proportion of mothers who consulted a physician

Table 1. Month of pregnancy in which 136 mothers first consulted a physician.

Month of Pregnancy	Number of Mothers	Per Cent of Total
Total	136 ¹	100.0
1-2	24	17.6
3-4	36	26.5
5-6	19	14.0
7-9	16	11.8
No prenatal care	41	30.1

¹The month of pregnancy was unknown in one case.

in specific months of pregnancy is shown in Table 1. Similar data are not available for any comparable area, but it is believed that this is an exceptionally good record.

Not all who consulted a doctor in the first few months

of pregnancy, however, returned for periodic examination, as is shown in Table 2. In fact, sixteen of the seventy-eight mothers who went to a physician before the seventh month

MONTH OF FIRST VISIT	NUMBER OF WOMEN REPORTING STATED NUMBER OF VISITS				PER CENT WHO REPORTED STATED NUMBER OF VISITS			
	Any No.	1-2	3-4	5+	Any No.	1-2	3-4	5+
<i>Any month</i>	93	28	18	47	100.0	30.1	19.4	50.5
1-2	23	1	0	22	100.0	4.3	0	95.7
3-4	36	8	7	21	99.9	22.2	19.4	58.3
5-6	19	7	9	3	100.0	36.8	47.4	15.8
7-9	15	12	2	1	100.0	80.0	13.3	6.7

Table 2. Number of visits to physician for prenatal care according to month of first visit.

of pregnancy were seen by him not more than twice before confinement and can be definitely classified as having had inadequate prenatal care. In these cases the doctor had an opportunity to urge the mother to have continuous prenatal care; but either the doctor failed to present the necessity of care or he was unable to overcome the apathy of the patient. In either case the need of educating these mothers and possibly some of the doctors as to the value of adequate prenatal care is indicated, although it is known that some physicians in the County set a high standard of prenatal care and require their patients to have regular health examinations.

According to the number of prenatal visits to the doctor and the month of the first visit, the cases have been grouped upon the basis of generally accepted standards into three classes, as follows: (1) those having no prenatal care by a doctor; (2) those having *insufficient* care, which includes all mothers who first consulted a physician after the sixth month of pregnancy, and also those who consulted a physician before the sixth month but failed to see him more than twice

before confinement; and (3) those having *fair* or *good* prenatal care which includes mothers who consulted the doctor before the seventh month and made three or more visits. Under such a classification, it appears that slightly less than one-half of the mothers (46 per cent) had fair or good prenatal care, one-fourth had insufficient care and 30 per cent had no medical care.

The public health nurse visited 48 or 35 per cent of the mothers at least once during the prenatal period. Of the 41 who had no medical care only 8 (20 per cent) had some nursing supervision while of the 63 who had fair or good care 46 per cent were visited by the nurse, as is shown in Table 3. The difference can be explained by the fact that a large number of those who received nursing supervision had been referred to the nurse by the doctor. In a rural area, the difficulties of case finding are even greater than in urban communities, and special efforts are necessary for any notable success.

Economic Status and Prenatal Care. The amount of prenatal

Table 3. Prenatal supervision by public health nurses of 137 rural mothers who had various amounts of medical supervision.

Classification According to Medical Supervision	Number of Mothers	Visited One or More Times by the P. H. N.	
		Number	Per Cent
<i>All mothers</i>	137	48	35.0
No prenatal care	41	8	19.5
Insufficient	33	11	33.3
Fair or good	63	29	46.0

care varied directly with the economic status of the families. The economic status used is that given by the investigator and is based on the general impression formed after the family had been visited several times.

The prenatal care received by women of different economic status is given in Table 4. Of those classed as in "comfortable" circumstances, all had some prenatal care, and only one-sixth fall in the "insuffi-

cient" class. In contrast with this, 62 per cent of the "very poor" mothers had no prenatal care and 19 per cent had "insufficient" care. For those whose economic rating varied from "moderate" to "poor," the difference in prenatal care was not so great, but it decreased consistently with economic status. Only two or three mothers stated they could not afford to have prenatal care, but it seems likely that the expense was a deterring factor more often than was admitted.

Age of Mother and Previous Pregnancies in Relation to Prenatal Care. The age of the mother *per se* seemed to have little influence on her likelihood to have prenatal care, although of the women over 35 years of age who bore children in this period, only 29 per cent reported "fair or good" prenatal care as compared with 50 per cent of those under 35 years of age. Not age, but the frequency of previous pregnancies seemed to be the important factor. In order to show the influence of these two factors independently, Table 5 is presented in which women have been classified both according to their age and the number of previous pregnancies, and the factor of income is partially

Table 4. Amount of prenatal supervision according to economic status of the family.

Economic Status	Total Mothers	No. Having Specified Prenatal Care		
		None	Insufficient	Fair or Good
<i>Total</i>	137	41	33	63
Comfortable	12	0	2	10
Moderate +	46	10	13	23
Moderate -	38	11	9	18
Poor	20	7	5	8
Very Poor	21	13	4	4
Per Cent Having Specified Care				
<i>Total</i>	100.0	29.9	24.1	46.0
Comfortable	100.0	0	16.7	83.3
Moderate +	100.0	21.7	28.3	50.0
Moderate -	100.0	28.9	23.7	47.4
Poor	100.0	35.0	25.0	40.0
Very Poor	99.9	61.9	19.0	19.0

Table 5 is presented in which women have been classified both according to their age and the number of previous pregnancies, and the factor of income is partially

AGE	NO PREVIOUS PREGNANCY			1-2 PREVIOUS PREGNANCIES			3+ PREVIOUS PREGNANCIES		
	Total	Fair or Good Prenatal Care		Total	Fair or Good Prenatal Care		Total	Fair or Good Prenatal Care	
		Num-ber	Per Cent		Num-ber	Per Cent		Num-ber	Per Cent
All Ages	35	21	60.0	37	19	51.4	32	9	28.1
-25	27	14	51.9	17	6	35.3	3	3	—
25-34	7	7	100.0	16	10	62.5	17	4	23.5
35+	1	0	—	4	3	—	12	2	16.7

Table 5. Amount of prenatal care according to age of mother and number of previous pregnancies for mothers of moderate or poor economic status.

eliminated by excluding those who were either in the highest or lowest economic class. Although the number of cases is small in the different sub-divisions, the suggestion is rather definite that, regardless of age, the proportion of women who had prenatal care decreased with the number of previous pregnancies. On the other hand, it appears that the older the woman the more likely she was to have adequate prenatal care for her first-born, and even for her second. The young mothers and those who had borne many children showed the least interest in prenatal care.

Health of the Mother. It is a striking fact that not one of the mothers who had no prenatal care reported any specific illness² during the prenatal period. In fact, the majority of them stated there was no need for prenatal care because they felt perfectly well. Of the 33 who had "insufficient" prenatal care, only three reported some illness. One mother who had "kidney convulsions" had gone once to her doctor in the early

²This does not include persons who reported some nausea, headache, constipation, heartburn, or swelling in the feet or legs.

months of pregnancy but stated that she "neglected" to return. Another had albuminuria but said that she was unable to go to town until the eighth month because of the bad roads. The third mother reported that she "was sick the last two months" during which time she made six visits to the doctor.

Most of the complications and illnesses were reported by mothers who had fair or good prenatal care. Eleven of the 63 women in this group reported some definite complication. Although it is obviously true that a mother may know more about any complicating conditions if she had medical care and, therefore, report them, one cannot but be impressed by the fact that nearly all women who reported any definite ill health during pregnancy did go to their doctor. One important indication of this sample, therefore, is that the mothers who *do* have prenatal care are not an unbiased sample of all mothers and that a true incidence rate of conditions that complicate pregnancies cannot be determined from doctors' case records. Another significant indication is that rural mothers apparently do not appreciate the value of prenatal care as a *preventive* health measure, although when they experience symptoms of illness they do seek medical service. Earlier recognition of symptoms and of the need for medical supervision undoubtedly would result from early and regular medical examinations but further education is necessary to get the rural mothers to cooperate in such a preventive program.