

Data from birth certificates, particularly the date of the first serologic test for syphilis, indicating commencement of prenatal care, can be a valuable guide to local health officers in focusing prenatal care programs and services to areas of greatest need.

Prenatal Care in New York City, 1951

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MANY QUALITATIVE and quantitative factors must be studied in the assessment of maternity care. The date of commencement of prenatal care is one such factor. Although evidence of prenatal care does not guarantee its quality, if no prenatal care is received, or if it is not begun until late in pregnancy, its inadequacy according to accepted standards is beyond question.

In recent years, a query as to the date of the first visit to a physician during pregnancy has been added to the birth certificate in some areas. If this information is reliably recorded, it may

be used, in conjunction with other data from the birth certificate, as a basis for administrative studies of certain problems in the provision of prenatal care. Birth certificates may also be used as a point of departure for the collection of data by direct interview.

Comparatively few investigations of the time of the first prenatal visit to a physician have been made. In 1939, Goddard and Palmer (1) showed that 21 percent of maternity patients in Michigan had begun prenatal care only in the third trimester, or had had no prenatal care, or an unknown amount. The proportion in the same category of "late or no care" among the poorest group of patients (relief group) was 43.2 percent, and among the nonrelief group, 25.6 percent. This report, and a later one by Goddard (2) showed that poor levels of maternity care were found in low-income groups, in the groups with little education, in towns of 10,000 to 100,000 population (rather than the larger cities or smaller towns), and among patients in the later rather than in the first pregnancies.

The comprehensive British study of maternity care based upon interviews carried out in 1946 (3) showed that 10.9 percent of the wives of professional and salaried workers did not

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come under prenatal supervision prior to the third trimester of pregnancy, as compared to 17.8 percent of the wives of manual workers and 19 percent of the wives of agricultural workers. A point of importance in this study is that 47.2 percent of unmarried expectant mothers failed to begin prenatal care prior to the third trimester. As in other investigations, the group in their first pregnancy included a smaller percentage with late commencement of care than the groups in subsequent pregnancies.

Studies of the period of pregnancy in which prenatal care is begun have also been made among special groups. Fiumara (4) and others found that 16.8 percent of the women admitted to the maternity service of the Boston City Hospital had had no prenatal care. Among 679 patients who had received a prenatal serologic test for syphilis, the test was not performed prior to the third trimester in 351 (51.7 percent).

The purpose of the present report is to give data from New York City on the following five questions:

1. How many and what proportion of maternity patients, whose pregnancies terminate in live births, are in the "late care group"?
2. Where do these patients reside?
3. Where are they delivered?
4. Is the rate of late care influenced by race and ethnic group, age, parity, and previous fetal loss?
5. What are the number of cases and the rate of late care among patients whose pregnancies terminate in fetal death?

Material

All of the birth certificates received on the first working Wednesday of each month in New York City in the year 1951 were selected as a sample from the total of 162,755 live births and 17,961 fetal deaths reported during the year. These birth certificates were distributed as follows:

Total births in 1951 sample-----	8,894
Resident live births-----	7,770
Nonresident live births-----	426
Resident fetal deaths-----	666
Nonresident fetal deaths-----	32

Unmarried mothers were included in the study. From earlier studies, it is known that in New York City approximately 20 percent of non-white children and 2 percent of white children are born out of wedlock.

In 1951, a new birth certificate was introduced which asked for the date of the first prenatal visit as well as for the date of the serologic test for syphilis (STS), which had been requested on the old certificate. The items requesting this information on the new certificate were:

- "22. Date of 1st prenatal visit-----
 "24. Was serological test for syphilis done during
 THIS pregnancy or at delivery?-----
 Date----- Result-----"

Both types of certificates were included in this study.

The period of prenatal care as shown by the first visit to a physician is usually longer than that shown by the date of STS because, for example, some physicians do not give an STS

Table 1. Date of first visit and of serologic test for syphilis, resident live births, New York City, 1951

Date of STS	Date of first visit						Total
	First trimester	Second trimester	Third trimester	No visit	Old certificate	Unknown	
First trimester-----	1,729	30	9	7	771	109	2,655
Second trimester-----	472	1,154	20	15	950	133	2,744
Third trimester-----	131	82	332	10	235	28	818
No test-----	5	4	1	17	27	19	73
At delivery-----	15	21	46	187	173	74	516
Unknown-----	232	59	15	12	532	114	964
Total-----	2,584	1,350	423	248	2,688	477	7,770

Table 2. Patients with "late or no serologic test for syphilis" by health district, New York-City, 1951

Health district	Live births	Late or no STS		Health district	Live births	Late or no STS	
		Number	Percent			Number	Percent
Central Harlem ¹	261	124	47.5	Corona	181	25	13.8
East Harlem ¹	268	119	44.4	Astoria	200	27	13.5
Riverside	239	87	36.4	Westchester	185	25	13.5
Bedford ¹	293	95	32.4	Brownsville	240	28	11.7
Lower East Side	375	103	27.5	Sunset Park	185	21	11.4
Mott Haven ¹	264	70	26.5	Maspeth Forest Hills	202	22	10.9
Williamsburg-Greenpoint	185	48	25.9	Tremont	211	22	10.4
Red Hook Gowanus ¹	140	36	25.7	Flatbush	351	36	10.3
Morrisania ¹	315	78	24.8	Bay Ridge	283	26	9.2
Fort Greene	231	57	24.7	Pelham	120	11	9.2
Kips Bay-Yorkville	134	32	23.9	Flushing	292	26	8.9
Lower West Side	249	57	22.9	Graves End	222	19	8.6
Bushwick	203	45	22.2	Fordham	156	10	6.4
Washington Heights	230	48	20.9	Residence unknown	36	17	-----
Jamaica East	209	37	18.7				
St. George and Tottenville	116	19	16.4				
Jamaica West	230	35	15.2	All health districts	6,806	1,407	20.7

¹ Poorer socioeconomic districts.

on the initial visit, and because of any error in approximation of the month of pregnancy. The month of pregnancy, of "first visit," and of STS are approximated by coders from month of birth, reported period of gestation, actual month of first visit, and actual month of STS.

In order to determine which item of information to use to define the late-care group, the date of the first visit was tabulated against the date of the STS for the 7,770 resident live births in the sample (table 1). To test the validity of the sample, annual figures were compared with the figures for the sample, by district and for all 1951 data. Comparisons were made for STS, first visit, and for age and race, and the agreement was remarkably good for all areas tested.

Table 1 shows that the date of STS was known on 6,806 of the 7,770 births, whereas date of first visit was available on only 4,605. Because of this and because there was reasonably good agreement between the items when both were known (that is, on the new certificate), the decision was made to determine the beginning of prenatal care on the basis of the date of the STS. In New York City, a serologic test for syphilis is required by law. The rate of "late or no STS" is defined as the percentage of births for whom the STS was not done or was performed in the third trimester or at de-

livery and this rate will be used as the measure of the rate of late care. The rate for this sample of resident live births was 20.7 percent (1,407/6,806).

Geographic Area of Residence

In New York City as a whole, approximately one-fifth of all women whose pregnancies terminated in live births were in the "late or no STS" group.

The proportion of "late or no STS" ranged from 47.5 percent in Central Harlem to 6.4 percent in Fordham (table 2). Of the 30 health districts, 14 exceeded the city average rate. Approximately 70 percent of the "late or no STS" group resided in these 14 districts, and nearly half were concentrated in 7 health districts. The geographic concentration of the districts with the higher rates is shown in the map.

Place of Delivery

Striking differences in the rates of "late or no STS" exist among patients in each of the four types of hospital service (table 3). Very high rates in the municipal hospitals contrast with intermediate rates for general service patients in the voluntary hospitals and low rates among

Table 3. Patients with "late or no serologic test for syphilis" by type of hospital control, New York City, 1951

Race, age, and parity	Type of hospital					
	Municipal			Voluntary		
	Live births	Late or no STS		Live births	General service	
		Number	Percent		Number	Percent
Total	1, 376	642	46. 7	1, 164	324	27. 8
Race:						
White (non-Puerto Rican)	346	164	47. 4	665	159	23. 9
Puerto Rican	348	170	48. 9	143	52	36. 4
Nonwhite	682	308	45. 2	356	113	44. 1
Age:						
Under 20 years	219	112	51. 1	126	44	34. 9
20-29 years	823	377	45. 8	703	203	28. 9
30 and over	334	153	45. 8	335	77	23. 0
Parity:						
Primiparous	369	163	44. 2	362	116	32. 0
Multiparous	1, 007	479	47. 6	802	208	25. 9
Without previous fetal death	774	378	48. 8	660	171	25. 9
With previous fetal death	223	101	43. 3	142	37	26. 1

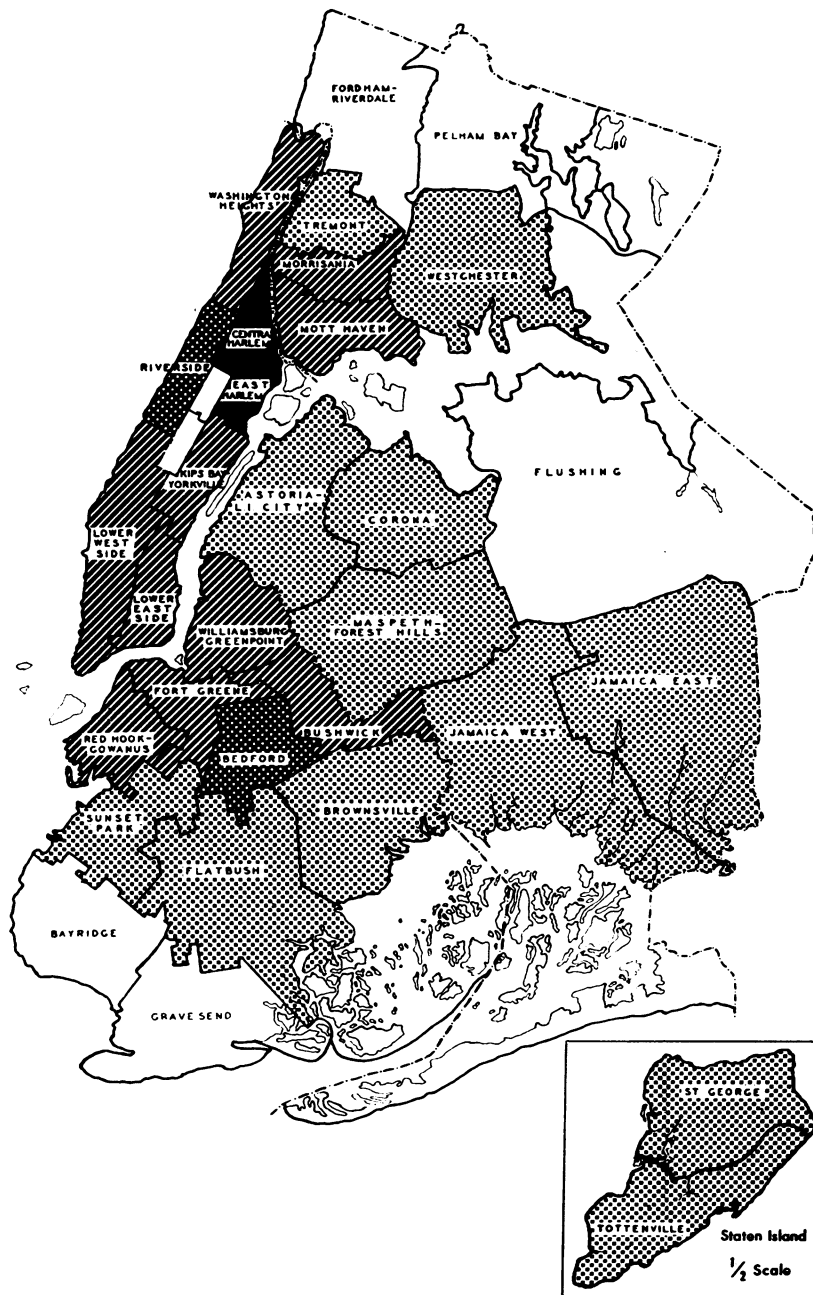
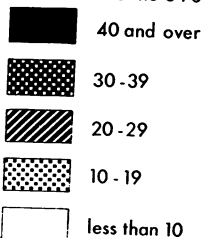
Race, age, and parity	Type of hospital—Continued					
	Voluntary—Continued			Proprietary		
	Live births	Private service		Live births	Late or no STS	
		Number	Percent		Number	Percent
Total	2, 795	231	8. 3	1, 229	111	9. 0
Race:						
White (non-Puerto Rican)	2, 706	215	7. 9	1, 188	101	8. 5
Puerto Rican	26	5	19. 2	4	1	-----
Nonwhite	63	11	17. 5	37	9	24. 3
Age:						
Under 20 years	64	6	9. 4	31	6	19. 4
20-29 years	1, 744	140	8. 0	774	65	8. 4
30 and over	987	85	8. 6	424	40	9. 4
Parity:						
Primiparous	1, 154	76	6. 6	489	33	6. 7
Multiparous	1, 641	155	9. 5	740	78	10. 5
Without previous fetal death	1, 306	126	9. 6	607	66	10. 9
With previous fetal death	335	29	8. 7	133	12	9. 0

Antepartum care

New York City, 1951

By health district

Percent late or no STS



private patients in voluntary hospitals and in proprietary hospitals.

Data on race, age, and parity are tabulated by hospital type and are also shown in table 3. The table includes data on only 6,564 of the 6,806 live births in the sample on which the date of STS was known. Of the remainder, 97 births occurred at home, 99 in Federal or State hospitals, and on 46, some of the necessary items of information were not available.

Race and Ethnic Group

Municipal hospital rates for "late or no STS" groups show little difference among nonwhite women, white women of Puerto Rican nativity, and white women of other nativity (table 3). All three groups have high rates. In voluntary hospitals, however, among general service patients, both Puerto Rican and nonwhite patients have higher rates of "late or no STS" than do white patients. However, white patients on

Table 4. Number and percentage composition of live births, by age and hospital type, New York City, 1951

Age	Type of hospital									
	Municipal		Voluntary				Proprietary		Total	
			General service		Private service					
	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent	Num-ber	Per-cent
Under 20 years.....	219	49.8	126	28.6	64	14.5	31	7.0	440	99.9
20-29 years.....	823	20.4	703	17.4	1,744	43.1	774	19.1	4,044	100.0
30 years and over.....	334	16.1	335	16.1	987	47.5	424	20.4	2,080	100.1
Total.....	1,376	21.0	1,164	17.7	2,795	42.6	1,229	18.7	6,564	100.0

general service have conspicuously higher rates than white private patients. The numbers of Puerto Rican and nonwhite patients in private services are too small to permit comparison with white non-Puerto Rican patients.

Age

“Late or no STS” rates for patients under 20 years of age were compared with those for patients 20-29 years of age, and with the rates for patients 30 years and over (table 3). Within each hospital group there is little difference in the rate of “late or no STS” by age, although it may be noted that patients under 20 years of age have somewhat higher rates in each of the hospital groups. The difference is somewhat more marked among patients on voluntary general hospital services.

However, maternity patients under 20 years of age are predominantly delivered in the municipal hospitals or in the general service of the voluntary hospitals, where 78.4 percent of live births to mothers under 20 years of age occur (table 4). Because of the high rates of “late or no STS” characteristic of these hospital groups, the proportion of patients under 20 years of age is approximately twice as high in the “late or no STS” group as in the live births in general (table 5).

Parity

In municipal and voluntary hospital general service groups, there is practically no difference

in the rate of “late or no STS” for primiparous and multiparous patients (table 3). In the private services, however, the multiparous patients appeared to have slightly higher rates of “late or no STS.” The data have not been studied by individual birth orders.

Multiparous patients who had had a previous pregnancy terminating in a fetal death show practically no difference in their rate of “late or no STS” from multiparous patients with no history of a fetal death, when compared within each hospital group. The same is true when the age groups (with sufficient numbers of cases) are separately compared.

Fetal Deaths

There were 82 patients in the sample whose pregnancies resulted in fetal death of 28 weeks’ gestation or more. For two-thirds of these

Table 5. Number and percentage composition of live births and of “late or no serologic test for syphilis,” by age, New York City, 1951

Age	Live births		Late or no STS	
	Num-ber	Per-cent	Num-ber	Per-cent
Under 20 years.....	440	6.7	168	12.9
20-29 years.....	4,044	61.6	785	60.0
30 years and over....	2,080	31.7	355	27.1
Total.....	6,564	100.0	1,308	100.0

patients the STS was reported in the third trimester or at delivery in contrast to approximately one-fifth for patients whose pregnancies terminated in live births. The total number of fetal deaths at 28 weeks or more gestation was too small to permit any further analysis (table 6).

Discussion

In this study, neither race nor ethnic group nor the three broad age bands as such appear to have any very striking or consistent relationships with the rate of "late or no STS." However, patients under 20 years of age, nonwhite patients, and those of Puerto Rican nativity are found in large proportions among those groups which are in general characterized by high rates of "late or no STS."

Parity, on the other hand, as such, has no relationship to the rate of "late or no STS" except for a somewhat higher rate among multiparous private patients. It is important to note that patients who had had a previous fetal death do not show lower rates of "late or no STS" than do multiparous patients within the same hospital grouping who had had no previous fetal death, although the former are at much greater risk with respect to subsequent pregnancies.

The widest differences in the rate of "late or no STS" were found when patients were grouped according to the health district in which they resided and according to the type of hospital in which they were delivered. Although health districts are not composed of homogeneous groups of the population, they

Table 6. Trimester of serologic test for syphilis, and fetal deaths, New York City, 1951

Trimester of STS	Live births		Fetal deaths at 28 weeks' gestation and over	
	Number	Percent	Number	Percent
First and second trimester-----	5,399	79.3	27	32.9
Third trimester-----	818	12.0	6	7.3
At delivery-----	516	7.6	49	59.8
No test-----	73	1.1	0	0
Total-----	6,806	100.0	82	100.0

Table 7. Percentages given serologic test for syphilis by date of test, according to type of hospital control, New York City, 1951

Hospital control	Date of serologic test for syphilis				
	Last trimester	No test	Test at delivery	Total rate of "late or no STS"	Unknown
Municipal-----	16.3	1.3	29.1	46.7	3.5
Voluntary:					
General service-----	20.7	.9	6.2	27.8	6.4
Private service-----	7.6	.4	.3	8.3	14.3
Proprietary-----	7.8	.4	.8	9.0	17.8

differ markedly in economic status and related characteristics of their residents. Groups of patients are similarly distinguished according to whether they are delivered in municipal hospitals, on general services of voluntary hospitals, or as private patients.

In this connection, it should be pointed out that the problems in the types of hospitals may not be quite the same. Table 7 gives the rate of "late or no STS" broken down into its three parts: STS during last trimester, no STS, and STS at delivery. It includes as well the proportion of the total certificates on which no information as to STS was reported.

This information suggests that in the municipal hospitals over half the patients in the "late or no STS" group are being seen for the first time at delivery, whereas in the general services of the voluntary hospitals, most of the patients in this group are seen during the last trimester. The high proportion of unknowns in the private services of the voluntary hospitals and in the proprietary hospitals presumably reflects the quality of the records rather than the quality of the care.

These two factors—place of residence and type of hospital service where the patient was delivered—differentiate social and economic groups in which a large proportion receive a serologic test for syphilis late in pregnancy from groups with a low proportion of late tests. From the public health administrator's point of view, these data indicate that the public health

measures designed to promote earlier care during pregnancy should be heavily concentrated in the selected health districts with the highest rates of "late or no STS" and should be aimed at the groups of patients who may be expected to be delivered in municipal hospitals as the first priority group and in voluntary hospital general services as the second priority group. It seems reasonable to believe that the more the municipal and voluntary hospital outpatient services can be adapted to satisfy in greater measure the human and social needs of patients as well as their medical needs, the greater the possibility will be of influencing pregnant women to begin medical care earlier in pregnancy. Administrative devices should be found which will enable health departments to maintain better contact with groups of patients who are now characterized by high rates of "late or no STS" in order to reach them early in any subsequent pregnancy. Common planning of programs by health departments, hospitals, and social agencies in assuring provision of early prenatal care would be helpful in determining and overcoming the difficulties. Continued, periodic analyses of birth certificate information would provide data on the success of the administrative measures employed.

Summary

The date of the serologic test for syphilis (STS) during pregnancy was studied in relation to other data available from birth certificates in New York City in 1951. The proportion of late or no STS shows striking differences according to the type of service used in the hospital, the type of hospital where delivery occurred, and residence of the patient. These differences pose concrete and practical questions to the public health administrator.

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Legal Note on Right of Indians to State Services

Significant in its implications for health services to Indians living on reservations is the case of *Acosta v. San Diego County*, decided July 7, 1954, by the District Court of Appeals for the Fourth District of California (272 P. 2d 92). San Diego County had provided relief, on an emergency basis only, to Indians living on the Pala Indian Reservation, but it refused to recognize them as residents of the State entitled to relief under the statute applicable to the relief of the indigent and

incapacitated. The court held that Federal jurisdiction over the reservation is not exclusive and that the Indians are not wards of the Federal Government in the sense that they are not competent to acquire residence in the State. As citizens and residents of the State, they are entitled, under the 14th amendment, to rights and privileges equal to those of other citizens and residents. The plaintiff is accordingly not disqualified by reason of the fact that she is an Indian living on a reservation.