

Reaching the Target Population For Prenatal and Postnatal Care

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MEDICAL and public health administrators recognize that every woman should have a complete medical examination before she plans to become pregnant. If this procedure were carried out routinely, many abnormal conditions, some of which can result in the death of the mother or the fetus or both if uncorrected, would be detected and treated before pregnancy. If prepregnancy examination reveals a medical ailment serious enough to jeopardize the patient's life or health should pregnancy occur, the patient must be advised. When she becomes pregnant she can be given special attention to prevent a recurrence or aggravation of the illness. In many instances, specific thera-

peutic measures are best employed before conception (1).

But a wide gap exists between this ideal and reality, as was indicated in a recent study conducted among 555 high-risk mothers selected for health or socioeconomic reasons (2) who live in the Westchester County Health District, N.Y. (excluding Mount Vernon, New Rochelle, and Yonkers).

Of the selected mothers, 378 or 68 percent were 20-35 years old, and 78 or 14 percent were under 20 years of age. Seven were 16 years or younger and 14 were 17 years of age (table 1).

Of the 555 mothers, 304 or 54.8 percent already had 1-4 children, 161 or 29 percent were primiparae, and 90 or 16.2 percent were multigravidae for the sixth time.

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The department's public health nurses, under Miss Esther Schisa, director of public health nursing, and her assistant directors at the time of the study, Miss Rosalie Flannery and Miss Gracie Edwards, interviewed the mothers. The department's statistical staff assisted in implementing the new method of patient referrals and compiling and tabulating the data.

Prepregnancy Examinations

Only 105 or 18.9 percent of the 555 mothers interviewed by public health nurses had had a prepregnancy examination, and 442 or 79.6 percent had not. In a rank listing of reasons given by mothers for not having a medical examination before becoming pregnant, unplanned pregnancies was listed most frequently, 125 times or 28.3 percent of all reasons (table 2).

Eighty-eight mothers (20 percent) indicated a feeling of physical well-being or not feeling sick as the reason for not visiting a physician before conception. Seventy-one mothers (16.1 percent) said specifically that prepregnancy examinations were not necessary, and another

68 women were unsure and questioned the need to see a physician before pregnancy.

The responses of these 227 women pointed up the need for public health education to close the gap between patients' understanding and medical professionals' knowledge of what constitutes good preventive practices in maternal and child health.

Thirty-two mothers or 7.2 percent gave specific socioeconomic difficulties such as "didn't have the money," "I have no one to care for the children," or "I was working and couldn't take time off."

Thirty-five women were being cared for by physicians for other illnesses and did not specifically ask for or obtain a pre-pregnancy examination.

Even in a community as affluent as Westchester County, all barriers to use of health services have not been removed. Moreover, the discrepancy between usage and need becomes more pronounced as the socioeconomic level of the people declines (3).

Although immunization as a primary preventive measure for the control of communicable diseases has been accepted by all groups, the essential preventive practices pertaining to maternal health—pre-pregnancy examinations and prenatal and postnatal care—have not been as readily accepted or understood. Members of the target population do not seem to share the same sense of concern regarding childbirth, as was evident in the answers received from many of the high-risk mothers.

Table 1. Distribution of mothers by age groups, Westchester County Health District, N.Y.

Age group (years)	Distribution of mothers	
	Number	Percent
16 and under.....	7	1.3
17.....	14	2.5
18.....	26	4.7
19.....	31	5.6
20-24.....	139	25.1
25-29.....	125	22.5
30-34.....	114	20.5
35-39.....	76	13.7
40 and over.....	23	4.1
Total.....	555	100.0

Table 2. Distribution of mothers who did not have pre-pregnancy examinations, by reasons, Westchester County Health District, N.Y.

Reason	Distribution of mothers	
	Number	Percent
Total mothers interviewed.....	555	100.0
Mothers who had pre-pregnancy examinations.....	105	18.9
No answer regarding pre-pregnancy examinations.....	8	1.4
Mothers who did not have pre-pregnancy examinations.....	442	79.7
Reasons why not:		
Unplanned pregnancy.....	125	28.3
Patient felt fine, concluded examination not necessary....	88	19.9
Patient stipulated pre-pregnancy examination not necessary....	71	16.1
Patient unsure, questioned need for pre-pregnancy examination..	68	15.4
Patient receiving care for other illness.....	35	7.9
Other reasons (patient working, no money, no care for children, and so forth).....	32	7.2
No reasons given (language barrier, etc.).....	23	5.2
Total.....	442	100.0

As many as 80 percent of these mothers reported that they did not have pre-pregnancy examinations, which may not only reflect the lack of knowledge of these families but also the state of the fragmented, incomplete system of medical services.

Last Medical Contact

Of the 555 mothers, 468 answered inquiries concerning time lapse between their last medical examination and the beginning of their last pregnancy. One-third of the mothers had some type of examination 1-3 months before onset of pregnancy, another 68 or 12.2 percent within the 4-6-month period previous to conception, and another 88 or 15.8 percent during the 7- to 12-month interval before the beginning of pregnancy.

Another 92 women (17 percent) were examined 13-24 months before pregnancy, 36 mothers had no recent physical examinations, and seven mothers had their last examination in

Table 3. Distribution of mothers by interval between last medical examination and beginning of last pregnancy, Westchester County Health District, N.Y.

Time interval	Distribution of mothers	
	Number	Percent
All mothers.....	555	100.0
1-3 months.....	182	32.8
4-6 months.....	68	12.2
7-9 months.....	55	9.9
10-12 months.....	33	5.9
13-15 months.....	24	4.3
16-18 months.....	22	4.0
19-21 months.....	36	6.5
22-24 months.....	12	2.2
25-27 months.....	2	.4
During 1962.....	13	2.3
During 1961.....	10	1.8
During 1960.....	4	.7
During 1959.....	7	1.3
No data.....	87	15.7

1959—5 years before the onset of their pregnancies (table 3).

Nearly a third of the mothers had medical examinations of a preventive nature, 25 percent had been examined in regard to their maternal status, nearly 12 percent of the women were examined for gynecologic problems, and slightly more than 20 percent had a systemic condition which was the reason for their last medical examination (table 4).

Comprehensive Services

There is little doubt that families of the low socioeconomic groups find it difficult to understand and appreciate the value of preventive health services. In addition, local health programs are piecemeal and services uncoordinated so that the effectiveness of health measures are seriously hindered. As a consequence, many public health officials have recommended that a health program aimed at the lower classes must combine preventive and curative services. "Not only must both types of services be provided, they must be so intermeshed as to be almost indistinguishable. Not only must care be comprehensive, but visits to the clinic or health center must be comprehensive in that all necessary services that can be given at one time should be provided" (4).

Thus a comprehensive maternal and child health center to provide the entire range of health services (preventive, diagnostic and therapeutic medical, dental, and rehabilitative services, as well as an organized program of screening techniques, correction of defects, and followup care) should be instituted in the community. Comprehensive medical care implies continuing personal care in family planning, prenatal, obstetrical, postnatal, pediatric, psychiatric, ophthalmological, nursing, social, and other related services. Ideally, these services should all be provided in one physical plant, in either a hospital or health center, supplemented by an effective referral system for specialized services, and supported by a home visitation program to relate the patient's home environment to his health problems.

Public health administrators know that factors exist before conception in either the mother or her environment that increase the risk of infant morbidity and mortality. Yet this concept has not been accepted by people in the community—especially among the low-income group. Perhaps one obvious gap has been the lack of family planning facilities available to the poor.

Some health departments have recognized this omission and instituted family planning

Table 4. Distribution of mothers by reason for last medical examination before last pregnancy, Westchester County Health District, N.Y.

Reason for medical examination	Distribution of mothers	
	Number	Percent
All mothers.....	555	100.0
Preventive measure (preemployment examination, annual checkup, postsurgical or hospitalization examination).....	168	30.3
Maternal status (post partum examination, delivery of previous child, suspected pregnancy).....	139	25.0
Gynecologic problem (vaginal bleeding, irregular menstrual cycles, infertility, miscarriage)....	65	11.7
Traumatic situation (automobile or home accident).....	3	.5
Systemic condition (hypertension, infection, headache, cold, obesity, pain).....	118	21.3
No data.....	62	11.2

services as an integral part of their comprehensive maternity care. In addition to mere installation, some have recognized that followup and prenatal instructions are key factors for success of a dynamic program of patient service.

Beginning with the assumption that the women being served sincerely wish to space their pregnancies or to have no more children and realizing that motivation might wane if pills have to be obtained and return visits to the clinic made, some departments have planned for instruction on reproduction and conception and patient followup by making, at strategic times, return visit appointments and home visits by the public health nurse. Under such a planned and integrated patient service program, the idea of having a prepregnancy examination does not remain an academic concept but becomes a reality of practicing good health habits.

Public health workers acknowledge that members of low socioeconomic groups do not fully utilize prenatal clinics, child health conferences, immunization clinics, and other medical care services. What has not been admitted by public health administrators until recently are that fragmented, uncoordinated, widely dispersed services have made utilization of medical care facilities so difficult and time consuming a task that members of the lower income group cannot participate in these programs. The target population has been bypassed. To correct this situation, comprehensive maternal and child health care centers have been recommended for reaching the disadvantaged people who need these services most urgently.

Reaching Hard-To-Reach Families

Health information and referral services were established by a number of health departments to enhance communication between agencies and people in the community and increase the use of health services and resources. Such services are to bring people with health problems to local facilities designed to meet such needs without equivocation or delay. With health resources constantly developing and growing, it becomes more difficult for persons, especially those from the lower socioeconomic class, to know which will answer his particular needs.

An effective health information and referral service will not only constantly update the community resources file on all health and related services, but will also learn firsthand about unmet health needs of the people by documenting the gaps between needs and services. This opportunity to channel service effectively becomes a key factor in better use of maternity and child care services. Early and effective referrals to prepregnancy, prenatal, and postnatal care facilities for the unmarried teenage mother, the primipara of Puerto Rican or Negro background, and the grand multigravida with income below subsistence level will alleviate some of the problems confronting the high-risk mothers.

At present the usual procedure in the use of health information and referral service is that the patient must initiate the request for information regarding services. Actually this procedure, again, is a limitation in the maximum amount of contact between services and the people. Since one of the major problems of persons in the lower social class is their hesitancy to take that first step—the initial call for help—the barrier still exists.

Perhaps health officials should suggest that agencies reach out to those people who need the services most urgently but who do not use the available resources.

Therefore, it is practical to propose that a trained health information-social worker make the initial call. This can be done by direct contact between the health information and referral service and the neighborhood centers established under such State and Federal programs as the antipoverty, assistance to the aged, maternity and infant care, and rehabilitation grants.

The neighborhood center directors and staff, usually including neighborhood people as aides, know about the mother of six children who may want to know about family planning but who does not know how to get help, whom to call or where to go. They may be the first to know the plight of an unwed teenage girl with her first pregnancy—certainly they would know long before the school teacher, social worker, nurses, and perhaps even before the parents. They know the Spanish-speaking families who do not get medical care except in emergencies because

they have a language barrier and cannot communicate with physicians. They know the unemployed heads of households, the working mothers, and the delinquent youngsters.

It is precisely at this local level and at this initial phase that the gap between health professionals and the people who need their services can be narrowed.

Trained referral service personnel should be used also to solve the problem of increased numbers of patients who would receive home visits by the public health nurses as a result of adding socioeconomic criteria to the health reasons for selecting mothers and newborns for such visits (2).

Because of the shortage of trained public health nurses, increasing the home visits for a segment of the population, no matter how important that segment is or how valid the justification, can only be made at the expense of other programs. But if auxiliary personnel could be trained to assist nurses by assuming some of their nonnursing functions, the solution to the problem would be nearer.

We contend that a preselection of patients can be done by a trained referral service worker who can determine by a telephone call to a family whether that mother and infant are under care and do not need a visit by a public health nurse or whether a visit is desirable. For example, a staff member could determine that a mother with a complication of pregnancy noted on her supplementary medical data form who is married to a lawyer and lives in an upper income residential section of town does not need a visit from a public health nurse, nor does a 37-year-old primipara who is married to a broker and lives in a luxury apartment, or a multipara of seven who is married to a proprietor, lives in a rural upper income area, and is already under medical supervision.

As long as trained professional nurses are scarce, it will be necessary to add to the resources by training and employing ancillary personnel.

Another possibility is the use of professionally supervised practical health educators, who are from the same environment as the families being served, speak their language, are well acquainted with their indigenous leaders, and can communicate with them and motivate them toward better health habits. All public health agencies need to

show more imagination in getting their message to all segments of the public.

Not only the method of reaching the high-risk families but the content of the health message needs to be reviewed. This is necessitated by the fact that values and perceptions related to the way of life characteristic of any social class or cultural group are expressed in the behavior of its members. These behavior patterns were manifested in lack of prenatal care for some mothers, based on the misconception that once a woman has had one baby she is experienced and does not need to obtain prenatal care for subsequent parities, or that physicians and nurses are associated only with illness and if pregnancy is not an illness then it is not necessary to see a physician. Some women's fear of physicians and hospitals might have been an individual impression, not necessarily a social class or ethnic perception; it was nevertheless, a tangible negative factor in obtaining proper preventative care.

Summary

In suburban Westchester County Health District, N.Y., 555 high-risk mothers with newborn infants, selected for study because of health or socioeconomic criteria or both, were interviewed by public health nurses. The results revealed that 80 percent of these high-risk mothers did not have prepregnancy examinations—125 or 28 percent because of unplanned pregnancies, and 51 percent because of lack of knowledge of the importance of such health practices.

The interval between previous medical contact and beginning of pregnancy varied from 1 to 6 months for 45 percent of these women, from 7 to 12 months for 16 percent, and from 1 to 5 years for 23 percent.

To close the gap between the modern concepts of good preventive health practices held by medical and public health professionals and the actual health habits of these mothers, it was recommended that comprehensive maternal and child health centers be established to provide the entire range of health services, establishing a health information and referral service for persons in the low-socioeconomic groups, and training and using paramedical personnel to provide ancillary services to make the health information and referral service more effective.

REFERENCES

- (1) Nesbitt, R. E., Schlesinger, E. R., and Shapiro, S.: Role of preventive medicine in reduction of infant and perinatal mortality. *Public Health Rep* 81: 691-701, August 1966.
- (2) Fox, R. I., Goldman, J. J., and Brumfield, W. A., Jr.: Determining the target population for prenatal and postnatal care. *Public Health Rep* 83: 249-257, March 1968.
- (3) Davens, E.: A view of health services for mothers and children. *Children* 12: 47-54, March-April 1965.
- (4) Yerby, A. S.: The problems of medical care for indigent populations. *Amer J Public Health* 55: 1212-1216, August 1965.

Denver Developmental Screening Test

A new graphic test has been devised to detect abnormal development in infants and small children.

The test is not an intelligence test, but mainly a screening device to detect children with developmental delays. It is simple to administer, easy to score, and can be used for repeated evaluations of the same child. Developed under a National Institutes of Health General Research Support Grant, the new screening tool has been recommended to the nation's pediatricians by the American Academy of Pediatrics and is now being used in Project Head Start.

Under the test format, one child's performance can be compared quickly with other children's on a standardized scale for four major functional areas—gross motor, fine motor-adaptive, language, and personal-social.

An examiner can note whether the development of a particular child is within normal range, but he cannot make a diagnosis with the test. It is intended only to alert the examiner to the presence of a developmental problem which needs further investigation. However, detection of developmental delays during infancy and the preschool years significantly increases the opportunities for effective therapy.

The new test consists of 105 items selected

from developmental and preschool intelligence tests. These items were administered to 1,036 healthy Denver, Colo., children 2 weeks to 6 years old.

As the developmental screening test was being standardized, the investigators also calculated norms for boys, girls, children whose fathers were blue collar workers, and those whose fathers were white collar workers.

There were few marked differences between the ages at which boys and girls performed individual test items. During the first 2 years of life there were also no marked differences in the ages at which children of parents from different occupational groups could perform the test items. After 2 years of age children of white collar workers performed a number of language items at an earlier age than children of blue collar workers.

The developers of the test, Dr. William K. Frankenburg and Dr. Josiah B. Dodds of the University of Colorado School of Medicine, are currently investigating the development of 1,000 Denver children whose fathers are in unskilled occupations with the idea of possibly creating a separate test for use in examining these children. They believe that neurological and developmental problems are more likely in this group.