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NUTRITION WORK FOR PRESCHOOL CHILDREN

By

AGNES K. HANNA

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CONTENTS.

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LETTER OF TRANSMITTAL.

U. S. Department of Labor,
Children's Bureau,
Washington, January 10, 1924.

Sir: There is transmitted herewith a report on Nutrition Work for Preschool Children, by Agnes K. Hanna.

The report is based upon a field study of the method of conducting nutrition work for preschool children in nine urban and three rural communities in which some definite organized work in this field is being done.

Respectfully submitted.

Grace Abbott, *Chief.*

Hon. James J. Davis,
Secretary of Labor.

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NUTRITION WORK FOR PRESCHOOL CHILDREN.

INTRODUCTION.

This report is an analysis of the findings of a field study made by the Children's Bureau during January, February, and March, 1923, of the methods of conducting nutrition work for preschool children in nine middle-western and eastern cities (Kansas City, St. Louis, Chicago, Detroit, Cleveland, Utica, Boston, New York, Philadelphia) and in three rural districts (Macon County, Ala., Mississippi County, Ark., Wayne County, Mich.). With the exception of St. Louis, included in a preliminary study, the cities visited were selected because in each of them some definite and organized work for preschool children had been undertaken. The rural districts were selected because the work in each represented a different type of nutrition teaching, although in all of them the work for preschool children was the outgrowth of the health teaching in the schools.

NUTRITION WORK IN THE CITIES.

ORGANIZATIONS CONDUCTING NUTRITION WORK.

The agencies undertaking nutrition work in the cities visited represented a wide range of public and private activity in different types of organizations. In some cities of the group well-child conferences and nutrition clinics in hospitals and dispensaries, health centers of private organizations and of the city board of health, settlements, nursery schools, and day nurseries were all contributing to the nutrition work for preschool children, whereas in five of the cities practically all the work for preschool children was being done by one or two organizations. The work of 30 organizations was studied, and visits were made to 33 centers or clinics and to 3 nursery schools; in addition, home visits were made with 6 nutrition workers.

Nutrition work as interpreted by organizations interested in the care of preschool children is any systematic and concrete instruction given under medical supervision to a child or to its parents that has as its purpose the correction of all the conditions that have interfered with the normal growth and development of the child. While practically all the instruction as to food and health habits given in a health center by physicians and nurses has a direct bearing upon the nutrition of the children, it is only when this instruction is given systematically and in relation to bringing the child up to a standard of nutrition below which he has fallen that it is technically called nutrition work.

The great variety of activities designated as nutrition work by the different agencies and the varying standards of care made it

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impossible to attempt a statistical study of the extent and adequacy of the nutrition work in each city. Although some of the agencies visited had worked out the technique of nutrition work through several years of experience many had but recently started such work, and a few of them frankly called the methods used experimental. Therefore it has seemed desirable to present in this report a composite picture of the most effective work that was being done rather than to discuss the experience and standards of each individual city or organization.

NUTRITION WORK IN RELATION TO GENERAL HEALTH SUPERVISION OF PRESCHOOL CHILDREN.

From the very beginning of this survey it was evident that it would be impossible to study the nutrition work of any of the organizations except in relation to the problem of the general health supervision of all the preschool children being cared for by the organization, because of the different policies and interpretations of the needs of preschool children, the varying kinds and standards of care, and the different types of workers who gave instruction to the child and its mother in the centers and in the home.

General plan of work of organizations studied.

The organizations caring for preschool children differed in general policy in the following respects: (1) Whether the organization had any plans for providing medical supervision and care for all the children within the district under its administration, or whether only those children were being cared for who were brought voluntarily by their mothers to the center or who were found by nutrition workers and nurses while visiting in the homes; (2) whether the organization undertook to provide both medical examinations and corrective care under medical supervision in corrective clinics and in the home, or whether it merely undertook to provide through child-welfare conferences for medical examinations without attempting intensive follow-up care. The following tabular statement shows the extent to which each of these policies dominated the work in 25 agencies that were caring for preschool children in the 9 cities. These agencies included 21 private organizations and the division of child hygiene of the board of health in 4 of the cities.

Policy of agency.	Number of agencies.	Approximate number of children cared for by each agency annually.
1. To provide, on a city-wide plan, for periodic medical examination but not for corrective care	1	[1] 16, 000
2. To provide medical supervision and corrective or follow-up care for all children within a definite district	4	200–1, 200
3. To provide medical supervision and corrective care for children brought voluntarily to centers throughout the city	8	1, 300–5, 000
4. To provide, in a limited district, medical supervision and corrective care for children brought voluntarily to the centers	12	20–400

[1] Including infants.

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Although the above outline presents only in a general way the extent of care given preschool children in these nine cities it indicates that in the majority of agencies concerned with the care of preschool children the children attending centers, clinics, and classes are those who are brought in for care by their parents. The effectiveness of this plan in any attempt to provide adequate care for all the preschool children of a community is in direct proportion to the number of health centers, the size of the staff available for follow-up work, and the extent to which the parents in the community are educated in regard to the necessity for periodic examinations and corrective care. In a large number of the centers visited it was evident that practically all the children had been brought in because they needed some definite care, while in other centers the proportion of normal healthy children brought in for general medical supervision was much higher.

Any agency undertaking to provide health supervision for all the children in a district or a city must make a house-to-house survey at definite intervals in order to keep in touch with every child in the changing population of the district and to educate the parents as to the value of this supervision; it must also provide centers, and a medical staff of sufficient size to insure periodic examinations of all the children. If, in addition, it attempts to give adequate corrective or follow-up care for every child it must have a field staff extensive enough to do this work. Four agencies attempting to carry out this comprehensive plan determined, in each instance, the size of the district to be supervised by the number of field nurses and nutrition workers on their staffs. Three districts had one nurse to about 1,800 or 2,000 inhabitants; in the fourth, the size of the district was based on a city-districting unit rather than on a population unit. The one agency following a city-wide plan for physical supervision of all preschool children gave physical examinations once a year to a large majority of these children and did a limited amount of follow-up work, but no actual corrective work, for children having physical defects.

Although it seemed of interest to include in the preceding tabular statement the approximate number of children cared for by the four types of agencies the real significance of such a statement can of course be determined only when the quality and amount of care given are known.

The problem of maintaining attendance in health centers.

The records of the health centers show wide variations in their supervision of the children during their preschool life. Frequently the child has entered the clinic for the first time at the age of 2, 3, 4, or 5 years; in a few instances he has a fairly complete record of weekly or monthly attendance during the first year of his life or slightly longer, with occasional and irregular attendance at intervals of three to six months or one to two years throughout the preschool years. Most centers have a large number of records of children who have had fairly continuous supervision as infants but who either have never returned to the center as preschool children or have been brought in only once or twice for medical advice. Many children whose physical examinations show that they are in need of careful medical supervision and corrective care have been discharged

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because of their failure to return to the clinic despite the fact that visits had been made by the nurse, whereas others less in need of care are returning at regular intervals.

The experience of most physicians and nurses in health centers has been that, while it is not difficult to persuade a mother to return to the center at regular intervals for supervision of the health and care of her baby, it is much more difficult to secure the same response and cooperation in the care of her older children. There are several reasons for this. These children are gradually outgrowing the period when their food and their activities differ from those of the older members of the family, and as their expression of feelings and sensations can be more easily understood than the infant's the mother feels more confident of her own ability to judge of their need of medical care. In a large family, also, household cares and the more insistent needs of the new baby subordinate the problems of the older children. The greater difficulty of controlling and managing the preschool child is another element influencing attendance at clinics and conferences.

Although these and other conditions make it difficult to maintain the attendance of preschool children at a center, nevertheless the effectiveness of any center is in direct proportion to its success in the following types of work:

1. Educating the parents of the community as to the need of periodic medical examinations of their preschool children and stimulating the parents to bring their children to the center.
2. Teaching the parents to understand the meaning of the physical condition of their children and the necessity of correcting physical defects.
3. Providing instruction in the center that will hold the interest of the mother and the child and maintain their cooperation in correcting poor food and health habits.

The amount of effort that is necessary, the type of appeal or publicity, and the kinds of workers needed in a center to "put over" this instruction in any community will depend in a large measure upon the character of the neighborhood in which the center is located. Inability to understand English, limited understanding, prejudices, national or racial customs or attitude of mind, all add difficulties to the problem. That any of these conditions are insuperable has been disproved by the experience of different centers—practically all parents will respond, to the limits of their ability, to a popular or persistent appeal to their interest in their children.

How far an agency should devote its energy and its funds to each of the three types of instruction will depend upon its general policy. Adequate care of a limited number of children, and the slow but sure growth among the families of the community of a more intelligent attitude toward child care that will lead eventually to the provision of adequate care for all children, is the ideal of most public-health workers, rather than the creation of a popular interest at various periods that is not sustained by a constructive after-care plan. The evidence that a center or an organization is progressing under the former plan is a steady growth in the number of preschool children being cared for in the center and in the number of

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children brought in for general medical supervision as well as for corrective care. Equally valuable evidence of progress in an organization devoting its energy to popular education is an increased demand for centers for corrective and follow-up care for children and willingness of the community to support such centers.

Methods used by organizations to attract mothers to centers.—In most of the centers visited no special effort was being made to stimulate the attendance of preschool children who had not visited the center before, since the organization usually was not equipped to care for more new cases than would come to the center normally as a result of effective work in the district. If the work in a center must be limited because of a small staff, it is extremely difficult to maintain the best proportion between the amount of effort that should be put on corrective work for a small number of children and that spent on the general supervision of a larger number of more nearly normal children. The center should be a preventive, as well as a corrective, agency; and it is as important for it to supervise the health of the normal child and to prevent malnutrition and faulty habits as to correct these after they have developed.

An important part of the work of agencies that undertake to care for all the preschool children in a definite district is to make sure that all the children come to the center. Personal interviews with the mothers in a house-to-house survey are the means usually employed for doing this. The four organizations caring for a certain small district have this canvass made by the nurse or nutrition worker who is responsible for each part of the district, or by special workers on the staff. Several advantages are to be gained from making the canvass of her own district part of the work of each nurse. From the first contact with the mother the same person will have charge of the child in clinics and in home visits; the experience and training of a nurse should make her most effective in persuading the mother that the child needs medical care; the interest and work of a nurse are understood and she is an accepted authority in the community. In a center in an Italian district it was found that the most effective person to stimulate mothers to bring their children to the center was an Italian social-service worker. This worker's lack of nursing training was completely offset by her greater knowledge of the point of view of the Italian mothers and her ability to make her points clear to them. Furthermore, her service as interpreter in the center had given her fairly extensive clinical experience in the needs of the children.

That specially instructed volunteer workers can be used with excellent results to stimulate mothers to bring their children to a center for examination was proved by the experience of the one agency providing child-health conferences for an entire city. In this instance the attendance at the centers of 95 per cent of all the children found in the 1922 canvass [1] was attributed largely to the individual efforts of the volunteer workers, although their work was supplemented by a general publicity campaign.

Without undertaking a house-to-house canvass it is possible to reach most of the parents of a community through clubs, churches,

[1] Annual Report for 1922. Children's Bureau, Kansas City, Mo.

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and other organizations of men and women, and through the children in the schools; and all of these methods should be used in any general publicity campaign.[2] In all of the rural communities visited the schools were the center of the health activities, and as a result they were the main agencies for reaching the parents. In the cities, although there was evidence of some cooperation between individual teachers and principals and the workers in a center little attempt was made to use the schools systematically as a means of reaching parents. One board of health has undertaken to give examinations each spring, in a few schools in the locality, to preschool children who expect to enter school in the fall. This work is more closely related to school problems than to the problems of agencies working for preschool children.

Methods of holding interest of mothers.—The center that does the most effective work for preschool children is one in which all the members of the staff—physicians, nurses, nutrition workers, and volunteers—realize that their problem is primarily an educational one and work steadily to improve their teaching technique. There was wide divergence in the opinions of the physicians in the centers visited as to the limits of their activity. Some of them undertook only to diagnose the condition of the child and to give general advice to the mother and the nurse or nutrition worker, and others gave a large part, if not all, of the individualized instruction which the mother received. The value of having the physician spend time to secure the cooperation of both the mother and the child in his plan for the child's care should be more generally recognized. The establishment of special conferences and clinics for preschool children under the medical supervision of men or women especially interested in their problems is of great assistance in securing this result.[3] This plan was used in about one-half of the agencies visited. Some very effective teaching was being done in different organizations by both nurses and nutrition workers, but there were many evidences of poor teaching methods used by both types of workers and of failure to recognize the fundamental educational problems in their work. The use by one center of the name "health teacher" for the young woman doing nutrition work has much to commend it, as it emphasizes the educational character of such work.

After children have been brought to a center for their first physical examination their continued attendance at clinics and conferences is dependent upon the quality of the advice and instruction given in the center and its adaptation to the problems of each individual mother so that she sees the value of the effort and time that she expends in clinic attendance and in carrying out the instructions of physician, nurse, and nutrition worker.

Many of the abnormalities in physical development and in reactions of the preschool child which to a trained observer indicate a definite physical or mental condition are accepted by the family as individual habits or as personal or family peculiarities. As a result, it is most difficult to persuade parents to undertake systematic

[2] How to Conduct a Children's Health Conference, by Frances Sage Bradley, M. D. U. S. Children's Bureau Publication No. 23. Washington, 1917.

[3] Curtis, Robert D.: "Standards and methods for health work among children of preschool age." Transactions of the Eleventh Annual Meeting of the American Child Hygiene Association, 1920.

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correction of these defects. Furthermore, the advice and instruction given to a mother for the care of her preschool child usually either involves some surgical correction of defects or else requires some modification or change in the habits and activities of the child or of the family. Inadequate food and bad food habits, unhygienic habits of living, lack of sleep, and lack of parental control are all factors that may cause undernourishment or the development of other defects; yet to correct any of these may require the overcoming of prejudices, ignorance of sanitation, hygiene, and food values, and, in many cases, indifference on the part of other members of the family, especially the mother.

Unless the instruction given in the center is directly concerned with the particular needs of the individual family and is of a kind to stimulate the interest and effort of both the child and the mother the change in the child's condition from week to week is usually so slight that it is not a sufficient incentive for continued effort by the mother. Is it reasonable to expect a mother to return to a center for advice when she knows that she has not carried out the instructions previously given because they seemed difficult or impractical and only vaguely related to the child's condition, which she looks upon as "nothing to worry about, anyway"?

In addition to the instruction adapted to the needs of her own child which is given every mother, 11 out of the 33 health centers visited undertook a general educational program to help maintain the interest of the mothers and children coming to the center or to demonstrate to the mothers standards of child care. Such a program may include clubs and classes for mothers or for older children in the families, motion-picture talks on health topics and other entertainments, and demonstrations and illustrated talks on child care, health habits, and food selection and preparation, given as part of the daily activity of the center. In one center this program was extended to include a day nursery for infants and a nursery school for preschool children, which were used to demonstrate to the mothers the effect of adequate care for children not receiving such care in their own homes.

One of the greatest losses in effort observed in health centers is the failure to provide interesting educational material as well as medical advice in the conferences and clinics. Although it often takes great effort and much time on the part of the nurse or nutrition worker to persuade a mother to bring her child to a center, nevertheless when she does arrive no attempt is made to use her time while there in the most profitable way. In all the centers where an effective general program was planned as part of the regular work of a clinic it was being carried out by a nutrition worker or nurse who had no other responsibilities in the clinic.

Standards of care for preschool children.

In considering the standards of care given to preschool children in health centers it is necessary to distinguish between the type and amount of care given to the normal healthy child or to the one under general medical supervision and that given to the child in need of corrective work. These are not necessarily groups of special children, for every child may sometimes fail to measure up to the normal

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standard and consequently intensive care may be given him during a certain period, although at other times he receives only general supervision.

Children needing general supervision are brought to the center for a thorough physical examination and advice from the physician. Unfortunately the value of medical supervision for the normal child is not understood by most parents, and the actual number of normal children returning systematically to health centers for physical examinations is extremely small; in many centers there were practically no such children. In most cases the children returning regularly for supervision were those border-line cases that can be kept up to a minimum standard of health only by constant care. In all the centers the intervals at which children should return for examinations were determined largely by the children's needs, but the general policy of a physician or an organization was also a factor in the decision. The period most usually specified by the physician was three months, although in a few cases it was advised that the child be brought back in six months.

The method of keeping in contact with these children needing periodic supervision varied greatly in different centers. In some they were given the same monthly home supervision by the nurse or nutrition worker as was given to children in need of corrective care. In five of the dispensaries and health centers visited the date for the return visit was noted on the child's record and the mother was notified to return on this date by a postal or by a visit from the nurse; in event of the mother's not responding to the postal it was followed up by a call from a nurse or social-service worker. If an agency is going to attempt to give general medical supervision throughout the preschool years for as large a proportion as possible of the children in its district, it is essential that the amount of effort and time given by the staff to secure the return of the children to the center be reduced to the minimum. The very high percentage of returns shown in the records of two agencies, which was secured by the use of a return-visit file and notification by postals, indicates that this method should probably be used more generally in health centers.

The willingness of a mother to return periodically to a center is influenced by her estimate of the value of the medical advice given and, as was noted before, her interest in the information that she acquires. The physical examinations at the different centers were very similar, but the medical advice given varied widely. In five centers the prevention of diphtheria was particularly emphasized and treatment at a dispensary was arranged for. The advice and information given in different centers in regard to the food and health habits of these children varied from the mere distribution of general printed directions to individual and detailed advice by a nutrition worker.

Children needing corrective care.—A large majority of the children coming to health centers are in need of corrective care. The reason for this is evident, since one of the most marked characteristics of the preschool period is a gradual increase in the number of children having defects and in the number of defects per child in each age period.[4] From the standpoint of care these children may be divided into two

[4] Physical Status of Preschool Children, Gary, Ind., by Anna E. Rude, M. D. U. S. Children's Bureau Publication No. 111. Washington, 1922.

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groups: Those needing correction of physical defects or treatment for disease in a hospital, dispensary, or medical clinic; and those needing correction of habits and activities. As many of the defects needing medical correction are augmented by, or are the result of, inadequate food and unhygienic habits, many children need both of these types of corrective care.

Practically all of the centers adopted the same general policy in regard to children having physical defects. In all cases in which the family had a private physician the mother was referred to him for recommendations as to treatment; in those in which the family had no regular physician the physician at the center recommended a hospital or dispensary where the child could receive care.

The degree of responsibility assumed by the different health centers in securing the correction of physical defects varied considerably. It was influenced to a large extent by the type of community in which the centers were located, those situated among non-English-speaking groups taking, on the whole, more responsibility. Dental clinics were in the same buildings as those occupied by several of the centers visited, and consequently a large percentage of all the dental defects of the preschool children coming to these centers were corrected.

In a number of other centers the nurses or nutrition workers undertook to make appointments at some dental clinic for the children under their care, and often they personally took the children to the clinics. In a few centers the staff took no responsibility for dental care but constantly urged the parents to do this themselves. The removal of defective tonsils and adenoids was the type of corrective work which was most often recommended for preschool children and for which the staff of many centers assumed responsibility. Arrangements for hospital care were made for all children for whom the consent of the parents was secured, and in addition the nurse or nutrition worker made sure that the appointments were kept.

In all centers the children needing corrective medical attention were given continuous follow-up care in the homes until the defects were corrected, or as long as the parents needed instruction or would cooperate by coming for supervision to the center. A monthly visit was the minimum standard for such follow-up care. It is a very difficult problem to persuade parents to have defects corrected; and where the need for such correction is very great the nurse and the physician try to keep in contact with the parents at intervals of a week or so through clinic attendance and home visits.

There are several types of defects that may be overcome by change in the habits or the activities of the child. It is this type of corrective work that is primarily the problem of the staff of a health center. The largest group of children needing this care are the undernourished children, and in all of the 23 centers doing effective work with this group provision was made for their care in special nutrition clinics or by individual instruction from a nutrition worker in conferences and in the homes. Poor posture and bad habits are other defects for which special corrective work may be done in a center. Posture classes or clinics for preschool children were found in three centers. Only one of the organizations visited had established habit clinics for the correction of habits that are the result of wrong mental attitudes; individual instruction of the mother in all

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such cases was included, however, as part of the work of the three nursery schools visited.

There are two points of view in regard to the standards of care that should be given to the children for whom corrective educational work was being done in health centers: (1) Intensive instruction should be given in a clinic and in the home at sufficiently close intervals to maintain the interest and cooperation of the parents and the child. This usually means weekly or semiweekly visits either in the center or in the home. This intensive care is maintained for a definite period (three to nine months) or until an acceptable standard of improvement is attained. Following this intensive instruction follow-up care is given at regular intervals. This type of work was being done in eight of the centers. (2) Instruction should be given to the mother for as long a time as she will cooperate in carrying out directions, each child being seen at least once a month. When the mother assists by coming to the center regularly the instruction is more intensive; also, in individual cases where there is definite need but inability on the part of the mother to come to the center, the nutrition worker should visit the home at more frequent intervals than once a month.

There is much difference in the policy of various organizations as to how frequently these children receiving regular instruction from the center should be examined by the physician. In most centers the physician expected to see them every time that they came to the center. The periods between their visits varied greatly, however, since in a few centers most of the instruction was given in a special clinic and the children were expected to return weekly or biweekly, whereas in other centers practically all of the instruction was given in the home and the children came to the center only at intervals of three to six months for medical examinations. Of three organizations visited which had excellent clinic attendance one required only a yearly examination by the physician, and the other two considered a six-month interval more satisfactory.

STANDARDS FOR SELECTING CHILDREN FOR NUTRITION CARE.

The standards for selecting the preschool children for whom nutrition work should be done varied in different agencies. In some centers the only children given this care were those who did not measure up to a weight to height standard, and in other centers any child showing evidence of malnutrition or of poor food habits was assigned to the nutrition worker for care. In several organizations no attempt was made to care for all the border-line nutrition cases because there were only one or two nutrition workers on the staff, so that only the most seriously undernourished children were included.

In very few centers was it possible to secure an accurate definition of the standards used in judging nutrition cases, as this varied with the point of view of each examining physician. In using weight to height as an index of undernourishment, some physicians used 7 per cent and others 10 per cent underweight as a standard; this may have been affected by slight differences in the tables of weights and heights used in different centers. More emphasis was usually placed upon the general condition of the child than upon his weight. The

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wide variation in the percentages of preschool children who are under weight in the different age groups[5] may be one of the reasons why underweight is considered a minor factor in nutrition work for these children. Individual opinions of physicians as to conditions, other than weight, upon which standards of nutrition are based, also showed variability. Consequently it was impossible to secure comparable figures as to the extent of undernourishment among the children attending different centers.

Twenty of the organizations visited were doing some definite nutrition work for preschool children, and in 14 of these the nutrition worker was handling primarily nutrition cases. In 3 organizations the nutrition worker not only cared for the nutrition cases but took charge of the preschool clinics and did the home visiting for all preschool children. (In one organization this plan was soon to be replaced by more specialized nutrition work.)

There are both advantages and disadvantages in this plan. The main advantage is that any discussion of the food of preschool children must be related to advice about the family diet if it is to be at all effective, and this is a technical problem needing a specially trained person. That there is need for instruction in food as well as in health habits for many children who are not considered undernourished is borne out by two studies of the adequacy of the diets of preschool children. In one study 72 per cent of the children were found to have questionable or inadequate diets, though only 40 per cent of them were graded as "poor" or "very poor" in nutrition as judged by both weight and general condition.[6] The second study showed that 60.5 per cent had inadequate diets and 29.2 per cent had questionable diets, whereas only 9.7 per cent were undernourished on a basis of 10 per cent underweight for height.[7] The chief disadvantage in having a nutrition worker care for all preschool children is that few of the women doing this work have had sufficient training or clinical experience to recognize evidences of disease or to give advice as to nursing care, yet situations requiring such service are often met in home visiting.

METHODS OF CONDUCTING NUTRITION WORK.

Methods of conducting nutrition work for preschool children have been influenced by the difficulty of maintaining in clinics or classes meeting regularly a continuous attendance of all the preschool children needing this type of care, and also by the fact that the instruction of the mothers even more than of the children is necessary. Although it is most desirable—in fact, often essential—in any plan for the care of the preschool child to secure his cooperation it is not possible to secure it as fully as that of the older child.

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[5] Physical Status of Preschool Children, Gary, Ind., by Anna E. Rude, M. D. U. S. Children's Bureau Publication No. 111. Washington, 1922.

[6] The Nutrition and Care of Children in a Mountain County of Kentucky, by Lydia Roberts, pp. 29 and 8. U. S. Children's Bureau Publication No. 110. Washington, 1922.

[7] Children of Preschool Age in Gary, Ind. Part II, Diet of the Children, by Lydia Roberts, pp. 57 and 102. U. S. Children's Bureau Publication No. 122, Washington, 1923.

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The nutrition class.

The class method [8] of conducting nutrition work, therefore, which has been used with a considerable degree of success for many groups of children of school age, has had but a limited use for preschool children. In only four of the centers visited was formal class work in nutrition undertaken. In one of these the class was held in an under-age kindergarten with full attendance of children but with only about one-fifth of the mothers; in another the class had dropped from 12 to 5 children; and in the third center the class had just been discontinued because it had taken so much effort on the part of the nurses to bring the children together each week. The class attendance in the fourth center was very irregular, averaging about 12 mothers each week out of a group of 60.

The particular value of the class method is the appeal to group and social interests and the development of a spirit of competition, all of which may be used to stimulate the effort of each individual in the class. Although there is some difference of opinion as to the value or necessity of competition as a means of stimulating children to work for improvement in health habits,[9] the value of group pressure and the advantage of hearing the varying experiences of the different members of the group are almost generally conceded.

Other group teaching.

The importance of group work is recognized by most nutrition workers, and group teaching in various forms was used in different centers. In many centers every effort is being made to get groups of mothers together in classes or clubs, meeting weekly or monthly, for general instruction about foods and about prenatal, infant, and child care. These efforts, however, have been only fairly successful, as the actual number of mothers coming to any center for regular class work is very small. Four of the centers visited have a definite plan of group instruction for every nutrition-clinic meeting. This usually consisted of demonstrations, talks, or cooking lessons, and it often included some discussion of the habits and activities of the individual children, as the mothers discussed their own experiences with the nutrition worker. This type of work does not necessitate regular attendance nor the use of the formal technique employed in a nutrition class.

Some very effective informal group teaching for the mothers who happened to come at the same time to the clinic was seen in four centers that had no definite group program. Although this method of securing exchange of ideas and experiences among small groups of mothers by discussing their problems together was used quite spontaneously by these four nutrition workers, its value was so evident that it should be used more generally in nutrition clinics.

All these methods of group teaching were arranged for the benefit of the mothers rather than to secure the cooperation or interest of the children. The one point where group pressure was of great assistance in this last respect was its influence in teaching the children

[8] Emerson, William R. P.: Nutrition and Growth in Children. D. Appleton & Co., New York, 1922.

[9] Health Education and the Nutrition Class: Report of the Bureau of Educational Experiments, p. 225. E. P. Dutton & Co., New York, 1921.

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to like the foods that they should eat. The "party" served to the children at a food demonstration in four of the centers, the midmorning or midday lunch served in three nutrition clinics, and the meals served in all the nursery schools illustrate the value and the ease of teaching children to eat the right things, if they are made to feel that they are expected to take—and to like—everything served to them. Another type of group teaching planned to secure the interest and cooperation of the children was the telling of stories that emphasized health habits. This was seen in two centers: In one case the story-telling was done in connection with informal group work with the mothers, and in the second case it was given in a formal nutrition class.

Individual teaching.

The usual method of nutrition teaching found in health centers was individual instruction given to each mother, through which it is possible to go more deeply into the problems of each child than in group teaching, although it involves a loss in not creating a group attitude among the mothers coming to a center. Some individual teaching should always be done even with the most effective group work.

Without the benefit of the social interest of group work the nutrition worker must depend upon her individual appeal to the interest of the mother and the child. This is a question both of personality and of good teaching methods. In a few centers the nutrition worker made an earnest effort to interest and teach the children as well as the mother, providing small chairs and tables and a few easily cleaned toys, or giving out colored stars or pictures as a reward for their efforts.

The most marked difference in method in the centers doing individual work was the extent to which this teaching was done in the center or in the home. Although clinic attendance is influenced to a certain extent by the type of the group which the center serves, this is not the only factor, as is shown by the experience of various centers placed among quite similar population units. The most important factors are: The extent to which the community is educated to come to the clinics and the preference of the staff of the centers for the home or for a nutrition clinic as the place to give instruction.[10] The value and necessity of home visiting is not questioned by any nutrition worker. The difference in point of view is in regard to the amount of individual teaching that should be done in the center.

Although nutrition work is similar to other types of public-health teaching that may be done in the home, it has been developed to a large extent for the undernourished and underweight child, and it therefore offers a slightly different situation from that of general nursing instruction. In spite of differences of interpretation of the significance of weight to height as an index of malnutrition, practically all nutrition workers use the gain or loss of weight of the child to encourage the mother to continue or change her course of procedure in regard to his food, habits, or activities. It is therefore

[10] Nursing and Nursing Education in the United States, p. 50. Committee for the Study of Nursing Education. The Macmillan Co., New York, 1923.

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necessary to weigh the child at fairly regular intervals if any intensive corrective care is to be given. The nutrition workers of two organizations were provided with portable scales, so that this important factor of their teaching could be included in home instruction. In all of the other centers the nutrition workers relied upon the attendance of the child at the center for a record of his weight, and as a result many nutrition workers were attempting to do home teaching without the benefit of definite knowledge of weight variations.

As a place for instruction both the center and the home may be most valuable. Certain types of instruction can be given as effectively in the center as in the home; others can be fully understood only when all the conditions that affect the situation can be seen and talked over. The experience of several centers has proved that some of the food instruction often given in the home can be given at much less cost and quite as adequately in the center. An effective teacher, for example, can make a cooking demonstration individually valuable to 10 or 12 mothers, whereas it would take many hours of her time to give the same demonstration in 10 or 12 homes. Furthermore, the attention of the mothers as evidenced by the questions asked in these centers was secured much more fully in the center demonstrations that were seen than in the home demonstrations. The mother in her home was usually distracted by the need of looking up supplies and cleaning dishes, the feeling of being hostess, and constant attention to the wants of the children.

FACTORS ENTERING INTO SUCCESS OF NUTRITION WORK.

The final measure of success in nutrition work is the extent to which faulty living habits have been overcome and more adequate habits substituted for them. In any habit-forming program results will be secured far more easily if stimulation and encouragement is given at fairly close intervals. The nutrition worker who can see the mothers and children under her care at weekly or at semiweekly intervals, especially in the beginning of her work with a family, has a great advantage over the worker who sees her families at monthly intervals. There is some difference of opinion among nutrition workers as to the length of the period during which this intensive care should be given or as to the standard of success that should be attained in each case before such work is reduced and more general supervision given instead. The shortest period for intensive work in any of the centers was three months; in some it was from six to nine months.

The number of children cared for at one time by a nutrition worker will necessarily depend upon the amount of care given each child, and also upon the extent to which this instruction is given in the home or in the center. Each nutrition worker, in centers where intensive work is being done, usually has under her care from 40 to 70 children, the number that she cares for each year depending upon the amount of care given each child. Where nutrition work is less intensive she may be responsible for 150 to 250 children at a time.

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ACTIVITIES OF NUTRITION WORKERS.

Weighing and measuring.

As has been suggested, the child's weight may be used in nutrition work in two ways—as an index of his condition and as a means of interpreting to the mother the adequacy of her care. This difference in the use of the record of a child's weight is partly the cause of the wide variation in the technique of weight taking found in different centers. In some the children were always stripped for weighing; in others their weight was sometimes taken with their clothes on and at other times without. The most satisfactory plan was the following, used by one organization: When a physical examination was being given the child was weighed stripped and again in all his indoor clothes with the exception of shoes and sweaters; when the child returned periodically to the center his "clothed weight" was taken each time and compared with the clothed weight at the preceding visit. As most of the standard tables[11] of height and weight of children of 2 to 6 years are based on "stripped weights," it seems desirable to take the child's weight without clothing when he is having a physical examination, but there seems little reason for requiring the complete undressing of a child every time he is weighed in the home or in the center for the benefit of the instruction to the mother.

The importance given to weight taking and the accuracy with which it was done varied in the different centers. In some a volunteer worker without much supervision took the weight; in others the nutrition worker always did so, discussing with the mother the changes in the child's weight while her interest was centered on the subject.

Graphic weight charts were used in 12 of the centers. In the four centers that used a formal class method large wall charts were used; in the rest a small chart was kept for the benefit of the nutrition worker and the mother. If the record of weight is to be used as a means of showing the results of success or failure in carrying out a satisfactory health program it is valuable to show changes in weight as clearly as possible. Charting of weights is of great benefit in accomplishing this.

Recording habit histories.

In most centers a more or less complete record of the daily activities, habits, and food was taken when the child was first brought to the center, but in only a few centers was a similar record taken on return visits. This record was often taken by a clerk, volunteer, or assisting nurse before the child was seen by the physician, in order to give him a more complete picture of the factors affecting the child's condition. While this method may be of value in saving the physician's time or in assisting him there is a definite loss in not having this history taken by the person—whether physician or nutrition worker—who is to give the main instruction in health habits to the mother. The taking of a record to be used by

[11] Statures and Weights of Children under Six Years of Age, by Robert Morse Woodbury, Ph. D. U. S. Children's Bureau Publication No. 87. Washington, 1921.

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someone else is usually rather a formal proceeding, and the result in many cases is not an accurate picture of the real activities and habits of a child. If, on the contrary, this record is taken by the person giving the instruction, it becomes a means of giving a most valuable and individualized instruction in health habits. The most effective nutrition workers in all the centers used the latter method.

Giving instructions to meet changes in child's condition.

The discussion of the activities, habits, and food of the child in relation to the physical findings of the physician and to the changes in the child's weight or condition constitutes the main instruction given in nutrition clinics, classes, and home visits. This discussion should be based upon accurate knowledge of the child's daily activities, the amount of rest taken, his living conditions, the nervous stimulation he is under, and the adequacy of food taken during a typical 24 hours, in order that the causes which may have produced the defect or underweight in the child may be understood. In addition to this information it is necessary to know in what respects his daily program has been altered during the period following the previous instruction, in order to interpret any changes in physical condition or in weight. To secure this information the questioning of the mother must be most skillful and sympathetic. In many cases an adequate understanding of the problems involved can be secured only after several clinic and home visits.

Food teaching.

The importance of food as a fundamental requirement of good nutrition and the inadequacy of the diet and bad food habits found in a large proportion of the homes have made instruction about foods an important part of nutrition work. This has been the main reason for employing as nutrition workers women with special food training. Although the food of the preschool child is the immediate problem of the nutrition worker it is seldom possible to secure changes in his food without discussing the family dietary.

To secure changes in this is a slow and difficult process, and the successful nutrition worker approaches the problem gradually. She begins by emphasizing the value of such foods as milk, greens, oatmeal, and eggs, and encourages the mothers to use these foods and to report the number of times they are used and the amount eaten by the child. In many cases she has to contend with prejudices against or apathy toward the use of any or all of the foods that she advises. One of the most effective methods of overcoming the discouraging "He no like," which is the final and only answer given to much of the advice about foods, is to give the child an opportunity to taste the food properly cooked. This can be done by a "party" at the clinic or by a demonstration in the home. The value of this type of work is not fully realized, for aside from the centers and nursery schools where a meal was served only six of the nutrition workers interviewed made the preparation and serving of foods to the children a definite and regular part of their work, although several gave an occasional demonstration to teach a mother how to cook a particular dish.

In a great deal of the food work observed the instruction given to the mothers never went beyond continuous pressure to add more

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milk, fruit, greens, and other vegetables to the dietary and to use a hot cereal for breakfast. This general advice was always supplemented by explanations as to the value of each of these foods and advice as to their preparation and as to different dishes in which they could be used. Whenever the mother showed willingness to make changes in the family dietary, however, she was given most helpful information as to the relative cost and nutritive value of different foods and the desirability of substituting other foods for some of those that she had been using.

Budget work.

One of the chief discouragements in nutrition work is the large number of homes in which the income is insufficient to buy adequate food or, if sufficient, is so mismanaged that inadequate diet results. The first condition is a relief problem and the second an educational one. The relation of health centers to relief agencies varies according to the community. In some cities the nutrition worker may be caring for the undernourished children in families receiving relief from another agency, which is at the same time sending a dietitian or visiting housekeeper into the home to plan the budget and regulate the food purchases. In other instances the relief agency may have no visiting housekeeper and may not take advantage of the budget supervision that might be given by the nutrition worker of a health center. The most effective care of the children in families receiving relief was found to result when the relief agency formally transferred to the nutrition workers of the health center the problem of making out a satisfactory budget for the family. Under these circumstances the health of the family is related to its expenditure, and the nutrition worker can exert pressure to have adequate food bought. When there is no possibility of influencing the expenditures of a family it is only by securing the confidence of the mother and by persistent effort that the family can be taught to obtain the best results from its limited resources.

Home visiting.

Most of the nutrition workers were paying from 30 to 60 home visits a week to the children under their care. When the main instruction was given in the center these visits were for the purpose of seeing whether or not the advice given was understood and being carried out, of helping maintain or establish friendly relations with the mother, of securing a clearer idea of the living conditions and special problems of the family, and of giving advice and help in regard to these or of persuading parents to have defects corrected.

The importance given to home visiting by the different nutrition workers and the effectiveness of their visits varied greatly. In some of the visits the only definite purpose and accomplishment of the nutrition worker seemed to be to develop cordial relations, and no advantage was taken of any of the conditions that were encountered to give any real help or advice. In most cases, however, the nutrition worker made a point of making some definite contribution to her health teaching as well as giving incidental advice at each visit. The requirement of full notes on the home visits is of great assistance in stimulating a nurse or nutrition worker really to accomplish

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something during her visits. If such notes may be dictated rather than written it is a great saving of time.

Arranging educational programs on nutrition work.

The amount of time spent by nutrition workers on general educational work in clubs or classes, or in demonstrations or illustrated talks for the benefit of all the mothers and children coming to a clinic, varied greatly in different organizations. In one center where there is only one nutrition worker on a staff with several nurses a large part of her time was devoted to a general educational program and the remainder of it given as food consultant with the nurses caring for preschool children. In another organization with similar conditions the nutrition worker was giving less time to the general educational program and had charge of all nutrition cases in which the food problem was a difficult one.

The value of providing in the center objective illustration of good standards of food preparation and selection, hygienic habits, and child care has not been fully realized by most child-health organizations. If such work is to be of the greatest value it must include illustrative material that will "put the ideas over" to these mothers. Pictures or models of food are useful, but actual food materials are much more so. Talking about how to prepare foods has little meaning to most people; they need actual demonstrations. When the demonstrator who is explaining this illustrative material is a real teacher she will use the experience of the women or children in her audience to contribute to her explanations. Such a program is intended not to supplant the giving of individual instruction but to supplement it and help to create a desire for further instruction.

TYPES OF NUTRITION WORKERS.

Professional workers.

In most of the centers practically all the instruction was being given by nutrition workers who had had home economics but no nursing training. Because of their knowledge of food materials and household problems these women were especially well equipped to give the practical and detailed advice that is necessary in any plan involving changes in household activities and in diet. Another advantage of having this group of workers is that they are primarily teachers and they are trying to give each idea to the mothers in the most effective way. Although instruction about foods is emphasized by these workers, they all realized the equal importance of lack of personal hygiene, overactivity, and physical defects as factors in malnutrition and considered each of these in working out the detailed corrective program for each child. This type of nutrition worker was sometimes called a dietitian, although the name "health teacher," used in one center more adequately describes the character of the work done in many centers. Although not adopted by any of the organizations visited, the name nutritionist is receiving increasing recognition as a distinctive title for women doing this type of work.

In three of the centers a large part of the instruction in the nutrition clinic was given by the physician although a food teacher or a special nurse was assisting in each case. Some of the most effective

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teaching of mothers that was observed was by two of these physicians, both of whom were using a nutrition-class method. In most centers where the physician expects to see the child each time he returns to the clinic a certain amount of general instruction is always given by the physician, but the details of the advice about foods and of the correction of poor health habits are usually left to some one else.

In two organizations nutrition work was being carried on by a special group of nurses, all of whom had taken some special food training. It was impossible to draw any conclusions as to the advantages or disadvantages of this plan, as in one case the work was just starting and in the second organization the nurses had been trying to give some very detailed food instruction without sufficient supervision and individual assistance to make the plan really successful or to keep up the interest and enthusiasm of the nurses.

Volunteer workers.

Volunteers were being used for different types of work in a little more than one-third of the centers visited. Giving clerical assistance to the physician, taking social histories, and weighing and measuring children were the activities most often performed by these women. In two centers volunteers were provided to tell stories to the children so that the mothers would be free to get the benefit of the instruction given to them, and in another center the cooking demonstration given for the nutrition class was by a volunteer. There is little question of the value of using intelligent volunteer service to extend or increase the activities of a center.

MEASURING RESULTS OF NUTRITION WORK.

It is difficult to measure the results of nutrition work, for in the fullest sense they should include an improvement not only in the children under care but also in the living conditions of the family. Unless an organization has done intensive nutrition work with a certain number of children through a definite period it is difficult to measure accurately what has been achieved. Only two or three organizations have attempted any statistical analysis of results, but the following standards are used by different nutrition workers in measuring the value of their work:

1. The proportion of the children being given intensive care during a definite period of time who have attained a higher standard of nutrition.
2. The proportion of the children under supervision during a definite period who have gained weight in excess of the normal gain for their age and height.
3. The proportion of children needing correction of physical defects who have such corrections made.
4. The extent of the children's gain or improvement in individual cases.
5. The proportion of children maintaining good health habits during a definite follow-up period.
6. Improvement of living standards in the community (greater use of special foods, particularly milk; more windows open at night; more outdoor life and sunshine for children; etc.)

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Unfortunately most of the forms used by the different organizations are not planned with the idea of recording the kind of information that will show definite results of the care given. This is a loss not only in the evaluation of the effectiveness of the work, but also in the failure to give the individual nutrition worker definite standards toward which to direct her efforts and a definite reason for making adequate records of the information that she secures in the nutrition clinic and in home visits.

NUTRITION WORK IN RURAL DISTRICTS.

The nutrition work studied in the rural districts consisted primarily of health education for the children in the schools, though as the result of this work interest in nutrition problems was shown by many parents and a certain amount of individual work for preschool children was being done by the nutrition workers. The school work was of two general types: (1) General health instruction with emphasis on health habits and food selection given to all the children in the schools, but no special work undertaken for the undernourished children; (2) similar health instruction for all the children and, in addition, special instruction to undernourished children and some provision for a mid-morning lunch.

COUNTIES HAVING GENERAL HEALTH INSTRUCTION.

In one of the counties where no special work for the undernourished children was undertaken in the schools the general health instruction was given through periodical visits by a public-health nurse, supplemented by some instruction from the teacher. The cooperation of the children was secured by the formation of health clubs. The degree to which the children were informed on health problems and the record of their efforts to acquire good health habits were evidence of the interest aroused by this method in the two schools that were visited. The nurse tried to visit each school once a month. In addition to the club work with the children she undertook to make a preliminary physical examination of the children in most of the schools and advised them of the desirability of having dental or medical care. At the same time she discussed the possible needs of their small brothers and sisters and urged them to ask their mothers to bring these children to the health center located in the chief town of the county.

The response from the 65 schools of the county was not large, as only about 20 preschool children had been brought into the center during the last year. Most of the actual work for preschool children was done in the children's weekly conference, since the many duties of the nurse made it impossible for her to make many home visits. The conference activities consisted of a preliminary physical examination by the nurse, including vision, hearing, teeth, throat, posture, muscle tone, general appearance, height, and weight; an examination by a physician from the local hospital for all cases that showed need of more complete examination; and individual instruction given to each mother in which emphasis was placed on health habits and adequate food.

In the second county, where the health teaching was given as a regular class problem without relation to the needs of the under-

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nourished children, the instruction was being given by grade teachers under fairly regular supervision by a nutrition worker. The quality of the instruction varied with the interest and ability of each teacher; this was especially noticeable in these rural schools, in which the supervision was more irregular. Although some of the teaching was very good it was not coordinated with the actual physical condition of the children; its purpose was to give general information which would create interest in the formation of good habits. As the principal activity of the nutrition worker was to supervise and instruct the teachers her only contact with the parents was through general talks given at parent-teacher association meetings. Although a mild interest in the preschool problem had been expressed at these meetings no actual plan had been made for the care of these children.

COUNTY DOING SPECIAL WORK FOR THE UNDERNOURISHED.

The third county was the only one where the weight of all the children was taken at regular intervals and special emphasis given to correcting underweight. Some actual teaching was done by the nutrition worker in each school, but as she gave only part time to this county all the instruction between her visits was given by the teachers. Either because of the personality of the nutrition worker and the quality of her teaching or because the plan for emphasizing the needs of the undernourished children created greater interest in the homes there were more requests from the mothers in these schools than in any of the others for information as to the food needs of their preschool children. Most of the instruction to the mothers was given in the homes, though group meetings were occasionally arranged in the school buildings.

FACTORS WHICH HAMPERED HEALTH WORK IN RURAL DISTRICTS.

In two of these counties health teaching was being undertaken without any attempt to take the children's weight regularly or to use their gain or loss in weight as a means of insisting upon the acquisition of improved health habits. The question of the value of this plan in school procedure should be more fully and completely studied. From the standpoint of securing the cooperation and interest of the mother not only for her child in the school but also for the possible needs of her preschool children, the value of emphasizing health teaching by showing its relation to the actual condition of the children seems obvious. Wherever a nurse, nutrition worker, or teacher gives every child a preliminary examination—whether this consists merely of weight taking or includes some examination of posture, vision, hearing, and throat—and at the same time explains individually or in a class the relation of health habits to the child's condition there is always greater interest on the part of the child, which is apt to be reflected in the home.

Lack of medical supervision was the great difficulty in all the rural districts visited. While some very effective general-health teaching was being done, corrective work was always hampered by lack of accurate knowledge of the child's real condition.

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CONCLUSIONS.

1. A health center that undertakes the care of preschool children has three primary responsibilities: Educational, to educate the parents in the community to which it contributes as to the health needs of their preschool children and as to the standards of physical and mental development of the normal child; supervisory, to provide general health supervision for as large a number of preschool children as possible; corrective, to provide instruction in clinics and in home visits that will help to overcome poor health and living habits, and to give parents advice and assistance in securing the correction of defects that need medical care.

2. The wide variation in the frequency and regularity of the attendance of mothers of preschool children in different centers indicates that there is need in many centers for a closer study of all of the factors that influence nonattendance in their communities. In some centers nonattendance is accepted as an unfortunate situation without much effort to overcome it by changes in policies or publicity or in plans for instruction.

3. Nutrition work is the type of corrective work most generally provided for preschool children, although the correction of postural defects and of wrong mental attitudes and bad habits is receiving an increasing amount of emphasis in some health centers.

4. The excellent results secured by centers that have undertaken to give intensive care during a definite period to children needing corrective work indicate the desirability of greater use of this method. While one of its values is the stimulation of the interest and effort of the mother through frequent contacts, it also provides a spur to the staff worker who must measure the results of her work within a definite period.

5. There is much variation in different localities as to the division of responsibility between the nurses and nutrition workers of a center in the care of preschool children. There are, however, three main plans:

(*a*) All general supervision of the children is the responsibility of the nurses. All nutrition cases are under the care of a nutrition worker for a definite length of time or until each child attains a higher standard of nutrition.

(*b*) The nutrition worker is responsible for the general supervision of all preschool children as well as for the corrective work in nutrition cases.

(*c*) General supervision of all preschool children is given by the nurses, and the corrective work in nutrition cases is done by the physicians and the nurses. The nutrition worker serves as a consultant and provides a general educational program at all clinic meetings.

The use of a specialized worker for nutrition cases seems the most desirable of these plans. When there is only one nutrition worker on the staff of an organization the influence of her work will be more far-reaching if she cares for only a few special nutrition cases and devotes most of her time to a general educational program.

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6. The nutrition worker is primarily a teacher, and her success will be in proportion to her ability to interest the women with whom she works and to stimulate the formation of good food and health habits. Special food training is an essential requirement for such a worker, as she must be able to analyze and give advice as to the family dietary.

7. There is much difference of opinion among nutrition workers as to the relative value of the home or a clinic as the place in which nutrition work should be done. In a few centers practically all of the instruction was given in the home, while in others great effort was being made to bring the mothers to the center for both individual and group instruction. There is need of a demonstration as to the comparative cost and effectiveness of using the home or the center as the place for each type of activity undertaken by a nutrition worker.

8. A formal class method of conducting nutrition work was seldom used for preschool children. Advice was usually given to the mothers individually, though group instruction was used in a few centers. Group instruction of some kind should be made a definite part of a nutrition program. Demonstrations of food preparation and selection given in the center for groups of mothers and preschool children are of the greatest value in stimulating the interest of the mothers and in initiating a liking for new foods.

9. The standards for deciding which children are in need of nutrition care varied greatly in different health centers, as they depended largely upon the interpretation of the individual physicians. In the majority of centers, however, less emphasis was given to weight as an index of poor nutrition than is generally the case in nutrition work for older children.

10. Carefully taken habit and food histories and a record of the variations in the child's weight are the facts on which a nutrition worker bases her advice and the encouragement that she gives to a mother. It is important that all these facts about a child should be secured and recorded at sufficiently close intervals to give an accurate picture of his condition and to show his progress. Nutrition records should be planned with both of these points in mind, and they should be so arranged that important facts will always be recorded.

11. Nutrition work was one of the recent additions to the activities of most health centers. If this type of work is to be of the greatest benefit it is most important that some concrete measure of the results accomplished should be made a definite objective of the nutrition worker. This should be made a part of the record form used.

12. In the rural districts visited nutrition teaching was centered in the schools. This school work was used as a means of creating an interest in the needs of the preschool children as well as the school children. There are definite limitations to the effectiveness of this plan. Even for school children, the nutrition teaching in a school must be related to the actual condition of the individual child if the interest and cooperation of the parents are to be enlisted, and unless such cooperation is secured it is impossible to get in touch with the preschool children. Although the school nutrition worker

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can give the mothers excellent advice in regard to the food, habits, and activities of their preschool children, lack of medical supervision is a serious handicap to constructive nutrition work for these children. Health teaching in the schools is an important factor in a health program for rural communities. It should serve not only to encourage the formation of good health habits among the school children but also to create and maintain interest in a broader county or State plan which would provide medical supervision for both school and preschool children in rural districts.

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APPENDIX.—ORGANIZATIONS VISITED.

IN CITIES.

Boston, Mass.:
- Boston Dispensary.
- Brookline Food Center.[1]
- Community Health Association.
- Neighborhood Kitchen.[1]
- Ruggles Street Nursery School.

Chicago, Ill.:
- Elizabeth McCormick Fund.
- Infant-Welfare Society.

Cleveland, Ohio:
- Babies' Dispensary Hospital.
- Cleveland Nutrition Clinics.[1]
- Cuyahoga County Public-Health Committee.[1]
- Lakeside Dispensary.

Detroit, Mich.:
- Child-Hygiene Division, Department of Health.
- Merrill-Palmer Nursery School.

Kansas City, Mo.:
- Children's Bureau.

New York, N. Y.:
- American Red Cross, Bronx Chapter Health Center.
- Babies' Welfare Federation.[1]
- Bellevue Hospital, Out-Patient Department.

New York, N. Y.—Continued.
- Bureau of Educational Experiment—Nursery School.
- Department of Child Hygiene, Board of Health.
- Greenwich House Health Center.
- Judson Memorial Health Centre.
- Mulberry Health Center, Association for Improving the Condition of the Poor.
- New York Diet Kitchen Association.
- East Harlem Nursing and Health Demonstration.

Philadelphia, Pa.:
- Babies' Hospital.
- Children's Hospital, Department for the Prevention of Disease.
- Division of Child Hygiene, Board of Health.
- Star Centre.

St. Louis, Mo.:
- Municipal Health Clinics, Health Department.

Utica, N. Y.:
- Baby-Welfare Committee.

IN RURAL DISTRICTS.

Macon County, Ala.:
- Tuskegee Institute Health Center.
- Health work in rural schools.

Mississippi County, Ark.:
- Nutrition work in the schools.

Wayne County, Mich.:
- Health work in rural schools.

[1] Not included in tabular statement on page 2.

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