U. S. DEPARTMENT OF LABOR
JAMES J. DAVIS, Secretary

CHILDREN'S BUREAU
GRACE ABBOTT, Chief

PROCEEDINGS OF THE THIRD ANNUAL CONFERENCE OF STATE DIRECTORS IN CHARGE OF THE LOCAL ADMINISTRATION OF THE MATERNITY AND INFANCY ACT

(ACT OF CONGRESS OF NOVEMBER 23, 1921)

HELD IN WASHINGTON, D. C.
JANUARY 11-13, 1926

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LETTER OF TRANSMITTAL

U. S. Department of Labor,
Children's Bureau,
Washington, April 29, 1926.

Sir: There is transmitted herewith a report of the conference of State directors in immediate charge of the local administration of the maternity and infancy act, held in Washington, January 11 to 13, 1926. This is the third conference of this sort which the Children's Bureau has held. Although the proceedings of the first two were not published, it has been decided in response to many requests to publish the proceedings of this year's conference. It is believed that the papers and discussions will be useful not only to State and county health officers, but to many private agencies which are at work on similar programs and to interested professional and lay groups.

Respectfully submitted.

Grace Abbott, *Chief.*

Hon. James J. Davis,
Secretary of Labor.

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STATES ACCEPTING THE BENEFITS OF THE ACT FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY, WITH DATES OF LEGISLATIVE ACCEPTANCE

[Diagonal lines indicate States not cooperating]

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PROCEEDINGS OF THE THIRD ANNUAL CONFERENCE OF STATE DIRECTORS IN CHARGE OF THE LOCAL ADMINISTRATION OF THE MATERNITY AND INFANCY ACT (ACT OF CONGRESS OF NOVEMBER 23, 1921), HELD IN WASHINGTON, D. C., JANUARY 11-13, 1926

MONDAY, JANUARY 11—MORNING SESSION

GRACE ABBOTT, CHIEF, CHILDREN'S BUREAU, UNITED STATES DEPARTMENT OF LABOR, PRESIDING

The CHAIRMAN. It is a very great pleasure to have so many of you here this morning. In the program for this year we are carrying out as far as possible the recommendations made at last year's conference. We hope it will prove really profitable. As was requested, the prenatal program has been especially stressed. This morning we begin with the general subject of a practical State program of prenatal care. Dr. Fred L. Adair, who has done so much work in this field both before the maternity and infancy law was passed and since that time, was to begin the discussion of the subject for us. Unfortunately he has not been able to come on account of the serious and critical illness of his mother; but Doctor Boynton, director of the Minnesota division of child hygiene, has brought Doctor Adair's paper and will read it.

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THE PHYSICIAN'S PART IN A PRACTICAL STATE PROGRAM OF PRENATAL CARE

By Fred. L. Adair, Associate Professor of Obstetrics and Gynecology, The University of Minnesota Medical School

[Read by Dr. Ruth E. Boynton]

A good understanding of the significance and purpose of prenatal or antepartum care must be had before an attempt is made to elaborate an intelligent and practical program and to define the relationship of the physician to such a plan for the State.[1] According to the standards of prenatal care recently formulated by the committee appointed for that purpose by the Children's Bureau (see p. 10) "prenatal care is that part of maternal care which has as its object the complete supervision of the prospective mother in order to preserve the offspring's and her own happiness, health, and life. Therefore all pregnant women should be under medical supervision during their pregnancy, for it is only by careful routine prenatal care that pregnancy and labor can be made safer."

If we are created to create, and the chief end of man is man—dare one in this modern era say that maternity is the chief function of women? The carrying out of this physiologic law is vital to the perpetuation of the human race, which we assume to be the desire of human beings. The proper carrying out of this function involves many laws and principles which are as yet but imperfectly understood, and even those facts which are established are not generally appreciated and applied. We may also fairly assume that all reasonable humans take enough pride in their being to realize the desirability, importance, and ultimate necessity of continued improvement and upbuilding of the human race.

Much can be done by caring for mother and future offspring during the period of pregnancy. For instance, congenital syphilis can be more effectually treated during pregnancy than during infancy, and no one doubts that it could be still more adequately handled before the onset of pregnancy. This specific instance illustrates the general principle that although much can be done by our present plan of prenatal care to preserve the happiness, health, and lives of offspring this plan is too limited to accomplish fully the purposes which are enunciated. While we are striving to perfect and carry out universally the care of the pregnant woman we must also begin to enlarge our definition of prenatal care or coin another name, such as anteconceptional care or preembryonic care.

This leads one to consider when prenatal care begins; and it must be recognized that causes operate to affect the offspring for good or ill before the fertilization which leads to the ultimate development of an individual. There is a continuous chain of events without definite beginnings or endings and all we can do is to pick up the

[1] The word State is here used to refer to the geographic or governmental unit.

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individual links and try to weld as strong a chain as possible for human welfare. We are struggling against tuberculosis as a disease of individuals, but do we think of it from the standpoint of future generations? Do we realize or understand the ultimate possibilities of not propagating individuals peculiarly susceptible to tuberculosis? Do we grasp the tremendous importance to future generations of preventing tuberculous infection in the fathers and mothers of the coming generation? Can the increase of defectives be checked by care of the pregnant woman? Which type of prenatal care is more sane and far-reaching in its results—that which is applied to defective individuals during the anteconceptional or preembryonic period and prevents the natural increase of such individuals or that plan which humanely surrounds these poor defectives who are prospective mothers by prenatal care which is good but hopelessly inadequate so far as final results are concerned? This is pointed out from no lack of pity for these poor unfortunates, but because the pity is so great that one wishes there were no more of them to interfere with the happiness and usefulness of future generations. One can but praise the efforts for the proper feeding and development, both physical and psychic, of the infants and children of the present day; but is the tremendous prenatal significance of this program of infant and child welfare appreciated?

Consider the one fact of skeletal development and the elimination of rachitis in its relation to childbearing. At one time this disease was so common in England as to bear the name English disease. It is still common among many groups in all countries. Can one estimate the tremendous importance of the complete elimination of this disease in terms of its result on childbearing and in preserving the happiness, health, and lives of both mother and offspring? In the same manner the prevention of faulty nutrition, of improper hygiene, both physical and mental, and of disease would forestall many unhappy results which ensue in later life and handicap both mothers and offspring.

The prevention and appropriate treatment of such diseases as scarlet fever and diphtheria in childhood would doubtless prevent some of the cardiac and renal conditions which in later life may complicate pregnancy and labor. The prevention and appropriate treatment of such diseases in young adult life as rheumatic fever would prevent many cardiac complications of pregnancy. The recognition and removal of foci of streptococcic infection might remove many of the complicating renal conditions of pregnancy.

It might seem almost useless to talk of the hackneyed subject of venereal disease, its cure and prevention, if it were not almost an everyday occurrence to see the dire results of gonorrheal and syphilitic infection on both mothers and offspring. It is useless to think of accomplishing the purposes of prenatal care by the treatment of these diseases during pregnancy. Such therapy at times can not be avoided; but the laity should understand and the medical profession should realize more fully the necessity for curing these diseases before the onset of pregnancy, and they should make such procedure a more general practice.

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Much good could be accomplished for both parents and offspring if careful histories and physical examinations of potential fathers and mothers could be made effectually before conception took place. This would be in line with the idea of periodic physical examinations, but the point of view would be somewhat different. The idea back of the periodic health examination is, of course, the welfare of the individual; but here we would take into consideration not only the health of the prospective parent but also that of the future offspring. This brings up the matter of the future father and his relation to the happiness, health, and even life of both his wife and his offspring. This parent has been largely ignored in prenatal plans, and yet he is responsible for a great deal of damage, some of which could be avoided by his inclusion in the prenatal program.

Proper prenatal care of the future mother includes much more than the physician can supply. She needs all any woman needs—and more—to insure her comfort, happiness, and good health. Everything to make a suitable environment, assuring good hygiene, proper nutriment, appropriate work, and recreation should be provided. No physician, even granting that he has the requisite knowledge to advise properly, could furnish all the social and economic desiderata to his patients. Many things which are desirable and much that is necessary for these women can not be furnished under the present social and economic system. But a very important part of any prenatal plan is the guidance of mothers in making the most of the facilities they have, and, in case of need, assisting them to obtain the necessities which they lack for themselves and the future baby. This is, of course, somewhat aside from the physician's part in the plan; but it is vital for the success of his work and for the welfare of his patients. It is highly desirable that the physician make it a point to see that the patient make some contacts by which these needs may be met. This is, in fact, almost vital for the proper working of the prenatal plan, as well as for the natal and postnatal care, which are certainly not of less importance. The physician's main task is that of looking after the health of his clientele, but the idea of healing the sick has been so thoroughly ingrained that it is difficult to inculcate the idea of prevention into the lay and medical mind. Unless one grasps the fundamental idea of prevention as applied to obstetrics, there will be no comprehension of prenatal care. Unfortunately not all catastrophes can be prevented even though foreseen, so it can be assumed from the beginning that there probably never will be, by any plan of prenatal care, 100 per cent of prevention of the conditions complicating pregnancy.

The physician's first duty is to his patient, and if his obligations are well met he is fulfilling to a large extent his part in carrying out the plan of prenatal care. As an individual he can hardly solicit the people's patronage, but he can instruct and care for them after his advice has been sought. The first part the physician plays in a practical prenatal plan which we will consider is his individual relationship to the prospective mother. His first effort should be to win the confidence of his patient and assure her of his interest in her welfare. This can best be done by a careful consideration of her problems and a study of her case. The physician who has known his patient from infancy has a peculiar advantage provided he has the

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necessary intelligence and training to understand the events which have taken place in her past life. Most physicians have not the advantage of this first-hand knowledge of their patients. They elicit their information by careful questioning and examination of the patient herself, and perhaps even by interrogation of the parents and husband. It is usually better to obtain the necessary information from the patient alone, because usually more accurate and complete data are given thus than when a third person is present. It is also true that oftentimes more valuable information can be obtained from parents or husband when the patient is not present. In general these exhaustive inquiries are not necessary; and yet one never knows in which cases information of the utmost importance is being missed. There is, however, so much room for improvement in the routine management of prenatal cases by the physician that one need not consider overmuch the exceptional cases until the general level of obstetric practice has been raised above its present level.

When the patient is first seen a good history should be taken so as to bring out the events in her past life. Facts relative to her early development and nutrition should be elicited. History of previous diseases, such as scarlatina, diphtheria, rheumatic fever, tonsillitis, variola, tuberculosis, and venereal infections should be obtained. Indirect evidence and history of possible exposure to various infections often give valuable information. The facts as to previous vaccination are important, as serious results for both mother and fetus may be prevented. The occurrence of conditions which have required surgical intervention should be noted, also the history of goitrous conditions, thoracic disease, and acute or chronic abdominal affections. The possibility of persistent foci of infection should not be overlooked. The sexual life of the woman should be considered from the standpoint of her puberal development and menstrual history. The character of previous pregnancies, labors, and puerperiums is important, and this information may best be obtained by questions which will bring out the facts in chronological order. The date of termination should be ascertained, the period of gestation, complications, etc., that occurred during the labor. The immediate and remote outcome of this process, as affecting both mother and offspring, is of the greatest value in establishing future methods of procedure. It is of course obvious that careful and accurate data regarding the existing pregnancy should be obtained.

A careful physical examination should be made not only to establish the patient's status with reference to the pregnancy itself but also to determine as accurately as possible the physical and mental condition of the woman. It is not necessary to go into the details of this examination, as every physician should know the steps necessary as a routine, and should then make such additional investigation as may be needed in individual cases. Special observations of importance for the management of obstetrical cases should be added to those usually employed in the physical examination of patients. Such a study should be sufficiently thorough and accurate to determine whether the woman is in an approximately normal condition, and if not, the nature and import of the complicating condition.

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It is not sufficient to make only one examination of the patient. She must be seen repeatedly during pregnancy in order to be supervised intelligently. If this is not done some affection may develop, and the woman may be in a serious condition before it is realized. In my experience it has not been sufficient to trust to the patient herself to come for these periodic observations. Many will not come of their own accord so long as they feel well; and this is not a safe guide, as many do not feel ill until some toxemia or other condition has reached a serious stage. It is therefore necessary for the physician or someone to follow up these cases at least until the laity is more cooperatively intelligent regarding prenatal care than at the present time.

Final obstetric examination should be made a few weeks before the date at which confinement is expected in order to determine the condition of the mother and the size and position of the fetus. Needless to say, in determining how, where, and by whom the patient should be cared for at the time of delivery, one should be guided by the information previously obtained; otherwise the good prenatal care may have been for naught and the natal care may prove disastrous to mother or offspring or both. Good prenatal care is nothing but the proper foundation for good natal attention. Neither is complete in itself, and if either is inadequate both may result in failure. Nor are they complete without the best of postnatal care. Improper postnatal care may thwart the results of good prenatal and natal care.

The advice, care, and attention which the physician gives to the woman during her pregnancy, labor, and puerperium are based on the evidence and information which the physician has obtained. Naturally the management of cases is not identical, and instructions will differ; but there are some fundamentals which should be covered in all cases, though the details differ according to the peculiarities of the different individuals.

It is not necessary to go into details regarding the hygiene of pregnancy. The main facts are, or should be, common knowledge. Any physician should know these facts, and if he does not it is easy for him to obtain them if he is interested. It is one of his duties to provide the patient with this information in some way. He must decide on his instructions and vary them according to the individual needs of his patients. He must continually be on the lookout for abnormal conditions which are both accidental and incidental to pregnancy. It is part of the physician's task to obtain the cooperation of his patient so that he may be informed at the earliest possible time of any symptoms indicating complications. Only in this manner can events which lead to disaster for mother and offspring be avoided during pregnancy. Last, but by no means least, the prospective mother must be shown the necessity and manner of preparing herself (and her home, if need be) for the reception of the newcomer. It is only during pregnancy that proper preparations can be made for the all-important natal and postnatal care. Here is another important task for the physician in his relation to his individual patient. Prenatal care is not an end in itself but only a means to an end.

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The physician also has a relationship to his community. He is granted the privilege of medical practice by the State, and in consequence he incurs certain obligations. Chief among these is that of teaching and helping the community to prevent disease and death among its members. It should be one of his functions to cooperate in every way with the various agencies of his community in an effort to apply prevention of death and disease in connection with the practice of obstetrics. It is his job to educate; to demonstrate by his methods of obstetric care that he knows the importance of the proper examination and observation of pregnant women.

Again, there is a relationship between members of the medical profession. One member should not hesitate to give advice and help, or to receive it from another professional man who is qualified to give it. There remain the specialist in obstetrics and the general practitioner or inexperienced obstetrician to consider. The experienced specialist really should not care for the routine and normal obstetrical cases. He should rather reserve his energy and ability for the more trying and hazardous cases. On the other hand, the practitioner and inexperienced obstetrician should not hesitate to seek from others the benefit of their greater experience for the welfare of his patients.

The relation of the practitioner to clinics is of great importance. Many patients can not afford to pay an adequate fee for prenatal, natal, and postnatal care. Some can not pay for any of this service and should receive this care in a free or per diem clinic. Other patients are able to pay for part of the service and can employ a physician for this portion of their care. There should be the fullest cooperation between the physicians and these clinics to the ultimate benefit of all concerned. There should be helpful teamwork between those who practice obstetrics and the maternity wards of hospitals so that complicated cases can be hospitalized promptly and cared for properly before it is too late to prevent disastrous consequences. Hospital facilities for the care of maternity patients have been and still are woefully inadequate. Physicians should cooperate in plans to develop and improve such hospital facilities not only in large centers of population but also in counties and small cities, where their existence is even more important.

What the individual physician should do, as outlined above, the medical profession should also do on a larger scale. The community should be educated to the necessity of prevention in general and to the importance of prevention of maternal and fetal mortality and morbidity. There is nothing more important to the community than the production and protection of normal human beings. Proper obstetric care, as represented by prenatal care, is one of the most important ways of accomplishing this result. The medical profession should be vitally interested in fostering a State plan for carrying on this work. There should always be frankness and harmony between those who are officially responsible for carrying on the work and those who are actually in the field. Both are working for the welfare of mankind and attempting to save life and health. No plan of prenatal care can be successful in any State where the participation and cooperation of the medical pro-

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fession has not been obtained, for the physicians are the persons to carry on the work with women in pregnancy and labor and with the newborn. The plan is, and should be, mutual. The maternity and infancy program can be carried out successfully in no other way.

Teachers and teaching institutions are indispensable in the accomplishment of any State plan. Physicians already in practice need to be taught and helped to keep abreast of obstetric progress. Specialists must be taught and trained through years of instruction. Practitioners must be prepared during the undergraduate course and the interne year. This means that there must be good teachers, well trained and with adequate time and energy to make teaching their main work. It means also that there must be adequate teaching hours for obstetrics, adequate equipment, and patients who can be used clinically for demonstration without harm or discomfort to themselves or offspring.

Investigators are always of the greatest importance in any field. Competent ones are scarce, and their facilities are none too good. The problems are numerous, and they will sooner or later be solved. Investigators should be included in any practical State plan—at least to the extent that desirable material should be made available for their careful study. Physicians should recognize and cooperate in furthering this plan.

There must, therefore, be close cooperation among officials, practitioners, and the medical profession. The laity and physicians must understand each other. The former must realize that careful preparation and years of study are necessary qualifications, and the latter must know that the people wish real service which gives results. Obstetric practitioners must cooperate with one another, and men must realize their own limitations and recognize the qualifications of others along special lines. All should strive for better institutional facilities and organizations for maternity care. There should be closer contact between practitioners and teachers and teaching institutions. Investigators should be encouraged and supplied with material for study from all available sources. We should all realize the value of statistics and especially vital statistics, and should cooperate to the fullest extent in obtaining accurate and valuable reports. It is also important that we recognize the desirability of certain changes in reporting terminations of pregnancy, especially those pregnancies which result in stillbirths and nonviable premature fetuses. Physicians should recognize the fields of activity occupied in prenatal work by nurses and social workers. Each should take pride in his own work and respect the ability and usefulness of those in other fields of activity so that all may work together in harmony for the preservation of the happiness, health, and lives of mothers and their offspring.

The Chairman. We are going to postpone our discussion until the end of the morning session. You will remember that at last year's conference it was voted that the Children's Bureau should undertake to have a committee prepare standards on prenatal care which you might use in your own State work. We began shortly after the last conference and have the printed pamphlets ready for

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distribution at this conference. Since the discussion of these standards will involve discussion of Doctor Adair's paper I am going to vary the program slightly. Doctor De Normandie was good enough to serve as chairman of the committee on prenatal standards and to organize the committee. I am sure that all of you are grateful to him, as I am, for all the work he has done on the committee and also because he is here with us this morning. We shall have copies of the pamphlet distributed and then we shall hear from Doctor De Normandie.

[Copies of Standards of Prenatal Care (Children's Bureau Publication No. 153) were distributed]

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STANDARDS OF PRENATAL CARE

By Robert L. De Normandie, M. D., Instructor in Obstetrics, Harvard Medical School

At the meeting held in October, 1924, similar to the one which you are now holding, it was suggested that standards for prenatal care be drawn up for the use of physicians at clinics and in private work. This request originated, I believe, because there is such a wide variance of opinion regarding what constitutes proper prenatal care. With Miss Abbott's help I appointed the following committee: Dr. Fred L. Adair, of Minneapolis; Dr. Rudolph W. Holmes, of Chicago; Dr. Ralph W. Lobenstine, of New York; Dr. Frank W. Lynch, of San Francisco; Dr. Florence L. McKay, of Albany; Dr. James R. McCord, of Atlanta; Dr. C. Jeff Miller, of New Orleans; Dr. George Clark Mosher, of Kansas City; Dr. Otto Schwarz, of St. Louis; and Dr. Annie S. Veech, of Louisville.

I sent first to each member of the committee an outline of possible standards with the request that each member criticize constructively each point made and return the criticism to me. When the majority of the committee agreed on one point to be added or taken from the outline I made the addition or omission and reconstructed a second copy of the standards. This outline was then sent to each member for further criticism. After much correspondence I called a meeting on May 2, 1925, in Washington. At this meeting were present Doctor Adair, Doctor Schwarz, Doctor McKay, Doctor Mosher, Dr. Alice Pickett (who was designated by Doctor Veech to act in her stead), and Doctor Kraker, acting director of the maternity and infant-hygiene division of the Children's Bureau.

At the very beginning of the correspondence with the various members it became clear that only by compromise could any such group of physicians agree on what was essential for an outline on prenatal care which would not be too bulky. Each one made concessions on certain details which he would like to have included in the standards. The result is this outline which you now have in your hands and which I wish to go over with you point by point.

It has been demonstrated for many years that prenatal care is an important part of the care of the pregnant woman if the happiness, health, and life of the mother and the child are to be preserved. If that is so—and I think every one of you will agree that it is a true statement—every pregnant woman should be under medical supervision during her entire pregnancy. Even if a woman is under constant supervision the pregnancy and labor can not be wholly safe; but it can be made safer than it now is.

Throughout these standards we are insisting that the facts which are obtained be recorded; in other words, that there be a history of every pregnant patient who comes under the care of the physician or the clinic. The patient's history must be gone into. The diseases that she has had, particularly whether there is tuberculosis in her

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history or exposure to tuberculosis, must be known. Scarlet fever, tonsillitis, rheumatism, and diphtheria are especially to be noted; for you all know of the complications that may arise either in the kidneys or in the heart from these acute infectious diseases. Surgical conditions and operations, especially abdominal or pelvic operations, must be recorded. The patient's menstrual history, its cycle, the amount of flow, duration, and whether or not pain is present must also be recorded.

Next comes the question of previous pregnancies and labors if the patient is a multigravida. It must be insisted that the data of all previous pregnancies be obtained. That means abortions, miscarriages, and criminal abortions as well as full-term pregnancies; for many patients will tell only of full-term babies and will give no inkling that they have had abortions unless they are questioned carefully. In regard to each pregnancy the following points must be determined: The date of termination, the period of gestation, and any complications that occurred during pregnancy; the type of labor; its onset, whether it was spontaneous or induced; the duration of labor; and how that labor terminated, whether it was spontaneous (a normal delivery) or artificial (an operative delivery); and, if it was operative, by what method the delivery was accomplished. The puerperium must be inquired into—whether the patient made a normal convalescence, whether infection was present, whether any hemorrhage took place, or whether any operation followed a stormy convalescence. The outcome of these pregnancies must also be known—whether the baby was alive or dead at birth, whether maceration was present, and whether the baby came at term or was premature. The duration of breast feeding, if breast feeding was possible, must be recorded; and finally it must be known whether the babies are now alive, and, if they died, what they died from, especially if they died within the first two weeks of life.

Then follow the details in regard to the present pregnancy. What were the character and date of the last menstruation? Inquire carefully whether that period was an absolutely normal period, for an abnormal period may be the first suggestion of an extra-uterine pregnancy, or it may be due to the fact that pregnancy began just before a period rather than after the period. If that is known it may explain at a later date the fact that the fundus is enlarging more rapidly than was expected. Determine whether the patient is having nausea and vomiting, and how severe this is. If she is far enough advanced in her pregnancy find out when she first felt life. In the absence of definite menstrual dates the time when the patient felt life will help to a slight extent to determine when the labor may be expected; but do not be too certain that life is felt at the half-way point, for it is a very variable phenomenon. From the date of the last menstruation we estimate the date of the delivery.

With this history obtained we then proceed to a physical examination. This we insist upon as a necessary part of prenatal care, a part that all too seldom is done in a satisfactory manner. Whether or not physicians proceed in the physical examination in the order that we have suggested is of course immaterial. These are, however, the main points that must be recorded. Again we insist that the

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recording of the facts obtained is most important. The blood pressure has come to be an essential part of prenatal care. It is just as imperative for a physician to take the blood pressure when he sees his pregnant patients as it is for him to go about visiting his patients with his bag and his stethoscope or with his thermometer. Without it satisfactory prenatal work can not be carried out. The systolic and diastolic readings must be taken, the patient's temperature and pulse recorded, and the weight taken. We all agreed that the weight is a significant item of the prenatal care, for many of us have come to feel that a patient who gains rapidly during her pregnancy is much more apt to develop a toxemia of pregnancy and a possible eclampsia than one whose weight is kept within normal limits. The patient's general nutrition, the chest examination, inspection of her breasts, mouth, and extremities are all essential. Then comes the abdominal examination with careful palpation; and auscultation of the fetal heart if the patient is far enough advanced.

Relatively very few pregnant patients have a vaginal examination the first time they appear in a physician's office. Make it clear when you talk over these standards that vaginal examinations during the last month of normal gestation should not be made without strict aseptic precautions; and at no time, if vaginal bleeding is present, should a vaginal examination be made without these precautions. Why do we suggest that a vaginal examination is necessary early in pregnancy? Especially to determine the existence of a pregnancy. You all have known of patients who have been carried along for months only to have it determined that they are not pregnant or that some abnormal pregnancy exists. A vaginal examination determines the probability of a pregnancy and whether there is anything abnormal in the position of the uterus or whether any pelvic tumor is present. The presence of a venereal disease is discovered—a fact extremely important to know early not only for the welfare of the mother but for that of the baby also. A speculum examination of the cervix is advised because of the many cases that present an eroded cervix and may show troublesome bleeding. If this occurs it causes the physician and the patient much annoyance unless the source of the bleeding is established.

We suggest that the pelvic measurements be taken at this first visit of the patient to the physician. Whether or not it is done at the first time is really immaterial. The point is that if they are taken the first time, it is done and out of the way, and there will be no slip-up later—for you will all agree that pelvic measurements must be taken in the course of the pregnancy. I do not think it is necessary that pelvic measurements be taken in multigravidæ who have had average-sized children without difficulty. The measurements suggested are the usual ones which tell the size and the type of the pelvis. They are the intercristal, the interspinous, the external conjugate, the diagonal conjugate, and the transverse diameter of the outlet. When you come to talk over these pelvic measurements you may be questioned as to how they are to be taken, and you must know. I assume that you do know how they are taken. There is one point to be remembered: That in taking the transverse diameter of the outlet the physicians may not all have the little outlet pelvimeter, but they all have fists; and after the palpation of the

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pelvic contours, the sacrum, the coccyx and ischial spines, and the attempt to reach the promontory the fist can be rocked between the tuberosities; and, knowing what the fist measures, one very quickly determines whether the outlet is contracted.

The blood must be taken for a Wassermann reaction and sent to a laboratory of unquestioned standing. Wassermanns are taken as a routine throughout the country in all the large clinics, but they are seldom taken as a routine in private work. It should be the routine in private as well as in hospital work, for only thus will be found the occasional syphilitic case which may give the patient untold misery unless it is discovered early.

The routine urinalysis must be done, and if there is any suggestion of urinary complications, a microscopic examination of the sediment is necessary; and in many cases a 24-hour specimen must be obtained.

When this complete physical examination is done and it is determined that the patient is pregnant, the physician must give minute instructions to the patient in regard to the hygiene of pregnancy. Fortunately we have some excellent publications of the Children's Bureau and of the various State health departments on the hygiene of pregnancy, and if the physician is busy and in a hurry there is no reason why these publications should not be given to the patient to read over carefully. At the next visit to the physician the patient may ask about any of the points in the pamphlets which she does not understand. My feeling is that in a busy clinic these publications should be given to each patient.

Let me go over with you the various points in more detail than the mere list which you have before you:

A. Diet. The chief point to be made clear to the patient is that she must have a generous mixed diet—that is, the essential elements that go to make up a well-balanced ration, proteids, fats, carbohydrates, a liberal amount of water, and a satisfactory amount of mineral matter. When the nausea is present six small meals a day rather than the usual three will give much relief. The old saying that a pregnant woman must eat for two has long since been exploded, and I have already spoken of the untoward results that may come when a patient puts on a great amount of weight, because of the danger of a toxemia of pregnancy. She must be warned not to listen to her friends about the food that she should eat, for she may eat any kind of food that she knows she can digest. If she has an idiosyncrasy for any type of food, of course that food must be eliminated from her dietary during her pregnancy. The proteid element in the food puts the greatest strain on the kidneys, and the patient must be advised to have a low proteid intake, especially in the latter part of her pregnancy. However, there is absolutely no need that she eliminate all meat, fish, and eggs the last two or three months of pregnancy, as many women think they must. Too high an intake of fats and carbohydrates makes the patient gain rapidly and will frequently cause considerable indigestion. When the patient is eating too much carbohydrate food, sugar frequently appears in the urine; and unless it is quickly cleared serious damage may result. Milk, fruit, and vegetables (especially the leafy ones) add to the vitamins and mineral substances that are needed during pregnancy, also to

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the amount of water taken. If the patient is heavy and fat the drinking of much milk is questionable; and the calcium may be given to advantage in the form of the carbonate. Drinking at least eight glasses of water a day throughout the pregnancy must be insisted upon. Coffee and tea must be used in moderation, and alcohol should be omitted.

B. Exercise, rest, sleep, and recreation. The physician should find out to what exercise the patient has been accustomed and determine whether she should be allowed to continue the same amount. Strenuous athletic exercise should be prohibited. Walking is the best possible exercise for the pregnant patient. How much she can walk depends wholly upon whether or not she feels fatigue. A simple rule is that if the patient comes back from a walk and after resting for half an hour gets up feeling refreshed she has not walked too far; but if she is fatigued or is unable to sleep that night the length of the walk should be reduced. Many patients get much exercise in their housework, but they must be cautioned about overdoing, lifting heavy pieces of furniture, or doing a hard day's washing. Of course this hard housework can not be avoided by all patients, but each must be told to do as little work as possible at the time when she would be menstruating if she were not pregnant. She must be made to comprehend that the uterus is more irritable at what would be a menstrual period were she not pregnant than at any other time during the month and that therefore the liability to a miscarriage is greater.

The question of whether or not a patient shall work in mills often arises. Various legislative bodies have recognized the fact that pregnant women should not work up to the date of delivery. The law regarding this varies in different parts of the country, and obviously it is a difficult thing to enforce. The fact, however, remains that pregnant patients should not be employed in mills for any length of time. If a pregnant patient thinks she must work in a mill, she should be allowed to have periods of rest in the morning and in the afternoon.

We appreciate that it is difficult for many patients to obtain the rest which is so needful in order to have them go through their pregnancies in good condition, but if we constantly reiterate that rest is a necessary part of their well-being many more will take it than think they can at the present time.

Eight hours' sleep every night is essential. Many women get along for a while on less sleep than this, but sooner or later the lack of sleep begins to show itself in various ways. Many patients have in early pregnancy an uncontrollable sleepiness which at times greatly upsets them. If careful examination shows everything to be normal we can assure the patient that it will very shortly wear off and need be no cause for alarm. On the other hand, it may be one of the symptoms of a toxemia of pregnancy; and until this is ruled out we must not regard it as negligible.

Recreation is extremely necessary for pregnant women. The humdrum existence that many housewives lead is a serious obstacle to their well-being, and patients need periods of play as well as of work. They must be cautioned about taking long automobile rides over rough roads. Long touring is a common cause of abortion, and the automobile should be forbidden if the patient has ever shown the

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slightest suggestion of miscarrying. I see no reason why she should not drive herself, provided she drives carefully and slowly over good roads; but if automobiling causes backaches and other discomforts it should be stopped. Each physician feels differently in regard to the various types of recreation which a patient may take, according to the results which he has seen arise from these forms of recreation.

C. The chief points to be remembered in regard to the clothing are that the clothes must be warm, and at no time should they be allowed to be tight around the abdomen. Garments that hang from the shoulders are to be preferred. The corsets for the first three or four months of the pregnancy may be the ones which the patient has been accustomed to using unless she has a pendulous abdomen. Such a woman will feel more comfortable if she puts on a maternity corset early. There are many satisfactory makes of maternity corset. One that is satisfactory for one patient will not suit the next; nor is it necessary that every patient wear corsets during her pregnancy, for many women go through quite comfortably without any corset. If, however, unpleasant bearing-down and pulling sensations develop, then well-fitting, comfortable corsets will give support. The high-heeled shoes of the present-day fashion put a severe strain on the patient's back muscles and should not be allowed. Low-heeled, well-fitting, well-shaped shoes should be worn.

D, E, and F. The patient's skin must be kept in good active condition, for this is one of the three means of excretion. A daily warm bath keeps the body clean and the pores wide open. It is well to explain to the patient that as the pregnancy advances and the abdomen enlarges little red lines may appear, due to the stretching of the skin. This stretching often gives a sensation of burning and tingling. Nothing need be done in regard to these lines except to assure the patient that no harm will come from them. External applications occasionally make them feel a little more comfortable but will not eradicate them. The marked pigmentation that sometimes appears, especially in brunettes, is annoying; but I know of nothing that will prevent it. The patient may be assured that it will all disappear after pregnancy and that in the course of a few weeks she will regain her former complexion.

Even more necessary than the care of the skin is the care of the bowels and the kidneys. The patient must have at least one good dejection a day. Recall to her the reason for this—that the baby is growing rapidly and the products of not only her own metabolism but of the baby's metabolism must be eliminated, and that this is done by the skin, bowels, and kidneys. This will impress upon her the necessity of keeping her bowels free. Many patients dislike to take a cathartic in pregnancy because of the fear of forming the habit; but even if this fear is reasonable the daily movement is essential. If a satisfactory movement is not obtained by regulation of the diet a cathartic must be taken. The milder ones work satisfactorily in the majority of cases but they may have to be changed as the pregnancy advances. The kidneys should secrete at least 3 pints of urine in every 24 hours. The 24-hour amount of urine should be measured occasionally, and the patient will probably have to be told how to do this. This amount can not be secreted unless the patient is drinking from six to eight glasses of

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water a day. The patient must be warned that the passing of high-colored urine at any time must be reported to the physician.

G. The care of the teeth. Patients must have impressed upon them the advisability of having their teeth looked after during their pregnancy. Apparently there has been a deep-rooted idea among the laity that women should have no dentistry done while they are pregnant. You have all heard the old saying "For every child a tooth." Necessary work must be done, and there is not any reason why a needed extraction should not be performed; but difficult, painful work that can be avoided should be avoided. Patients should be advised about brushing their teeth regularly after every meal; and if during the nausea period there is much belching up of acid-tasting secretion the mouth must be washed out with an alkaline mouth wash.

H. Care of the breasts. Each physician probably has his own idea of how the breasts should be looked after during pregnancy. It varies considerably in different parts of the country. The only thing that I would suggest to you is that patients be warned not to pick off the crusts that come on the nipples the last few months of pregnancy. Infection may result from this, and it is much better for them to put on some simple ointment on retiring at night. At the bath in the morning the incrustations can be removed easily.

I. Intercourse during pregnancy. Every patient should be told that there may be a risk of abortion in the early months of pregnancy as a result of intercourse. It should be advised against at what would be a menstrual period were the patient not pregnant. Intercourse in the middle three months is of less risk than at other times, but it should be forbidden absolutely in the last two months of pregnancy because of the danger of infection.

J. Maternal impressions. I suppose it is reasonable for any patient at some time or other during pregnancy to wonder whether her child will be well formed and without any congenital marks. That is a perfectly natural thing. She must be told, however, that there is no such thing as maternal impressions. No baby is "marked" because of some unpleasant sight which the mother saw during pregnancy. From a physiological standpoint there is no possibility that such a thing as this can occur, and it is well to make this clear to patients early in their pregnancy. The cause of malformations and congenital markings we do not know, but we do know that the beginnings of these take place very early in the pregnancy, probably before the patient herself realizes that she is pregnant.

K. Hygiene of the home and preparation for home delivery. There is scarcely time for me to go into this subject in detail, but if the patient is to be delivered at home the preparations for a home delivery must be gone over in minute detail at some time in the course of the visits to her physician, so that the necessary things will be ready for the delivery at least a month before the expected date of confinement. This list is a variable one depending greatly upon the economic status of the patient. The absolutely essential things are relatively few. There are many things that may be added to the layout which increase the comfort of the patient.

L. Mental hygiene. It is not strange that most patients in their first pregnancy should have many misgivings of the outcome of the labor; and early in the pregnancy the physician should straighten

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out their point of view in every possible way. Exactly when this ought to be done is not always easy to determine, but in one of the first few visits of the patient to the physician the opportunity to explain the phenomenon of labor will come up, and by it great reassurance may be given the patient. Friends are apt to tell the patient of the tragedies of childbirth. These can readily be explained, her point of view can be improved, and it can be made clear to her that if patients are looked after throughout their pregnancies these grave disasters are very, very rare. A candid talk will do more than anything else to give her a proper attitude toward her pregnancy and delivery. Exactly how one is to speak to each patient depends wholly upon the things which are bothering that patient. No two patients are alike, and therefore the physician does not talk in the same way to all.

There are the instructions that should be given to a patient very soon in her pregnancy. The first visit of the patient to her physician is a most important one and can not be gone over hurriedly and in a few moments. Such an outline as I have described to you can not be carried out in less than an hour. It is an hour well spent, not only for the patient but also for the physician. The patient's state of mind is helped materially, and the physician determines what her condition is early in the pregnancy.

The patient should be seen by the physician at least once a month during the first six months, then every two weeks or oftener as indications arise; and in the last month weekly visits are in many cases advisable. A properly qualified nurse may work in conjunction with the physician in the observation of the patient. The nurse, however, must not assume any responsibility for her medical supervision; and her visits do not take the place of visits to the physician. When the patient is far removed from the physician such visits by a nurse are of help, but they do not in any way lessen the physician's responsibility for keeping watch over the patient.

At every visit to the physician the patient's general condition must be investigated, the blood pressure taken, urinalysis done, and the pulse and temperature taken. The patient's weight should be carefully followed, if possible. If the pelvic measurements were not taken at the first visit, they must be taken before the seventh month. Pelvimetry is only suggestive. It does not prove that a disproportion is present. For that reason it is most important that abdominal palpation be carefully carried out. Abdominal palpation in the eighth and ninth months shows whether or not there is any obvious disproportion between the fetus and the pelvis, and if there is obvious disproportion the proper method of delivery must be determined. In many cases malpositions can be determined and may be corrected. It must always be known before labor begins whether a possible disproportion is present and whether in a primigravida there is descent of the presenting part into the pelvis. If a disproportion does exist—and every physician should be able to determine this—special care must be taken to avoid vaginal examinations just prior to or after the onset of labor because of the danger of serious infection should any operative procedure later become necessary. The individual patient must be studied. The physician must never assume that everything is normal. It must be known in every case that no disproportion is

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present. If the prospective labor offers a probable chance of being difficult, the patient should be sent to a well-equipped hospital for delivery.

We all appreciate that pregnancy is a physiological condition, but because of the fact that it may quickly become pathological it is necessary to instruct each patient at her first visit to report to the physician any untoward symptoms. Whether physicians go over the list as we have given it, or whether they make the statement to the patient that she must be absolutely well at all times and that anything abnormal must be reported at once is immaterial. Pain in the lower abdomen and vaginal bleeding must be reported at once. A bleeding case calls for investigation, for it is only by careful oversight and study that the mortality in such cases can be cut down. It is because many physicians regard slight bleeding as not abnormal or of not enough importance to investigate that we obtain such bad results in the bleeding cases. It must be made clear that when a bleeding case does appear and a vaginal examination becomes necessary, it must be done under strict aseptic precautions. If a hospital is not available means must be at hand to control any hemorrhage that may occur.

Rarely does a toxemia of pregnancy develop overnight. It is usually of slow onset, and only by careful medical supervision and treatment can an eclamptic condition be prevented. Cooperation between the patient and the physician is essential. If either fails eclampsia may develop and disastrous results follow. But with constant vigilance on the part of the physician and cooperation on the part of the patient the number of eclamptic cases which occur throughout the country can be greatly diminished.

When a patient is to be looked after by a midwife arrangements should be made for the patient to have the prenatal care to which all prospective mothers are entitled. If in this prenatal care it has been seen that a normal delivery is not likely to occur the patient should be transferred from the care of a midwife to that of a physician or a clinic. By careful prenatal care it is possible to overcome the bad results of lack of supervision of midwives.

I can hear many of you say that such standards as we have outlined for prenatal care are impossible to carry out successfully. I agree with you that at the present time these standards can not be fully carried out. I am sure you realize, however, that each year there are thousands of deaths which are due chiefly to the lack of prenatal care; and we must overcome this situation. Difficult operative work is done in emergencies, and the results are not good. The majority of deaths in obstetrical work come from two preventable causes, puerperal septicemia and albuminuria and convulsions. Prenatal care will reduce the deaths from septicemia because it will determine before labor begins which are the difficult cases and will lower the number of vaginal examinations that are necessary. It will also lower the deaths from convulsions because the preeclamptic condition is discovered and proper medical treatment is carried out early. Without prenatal care the conditions that are present throughout the country will continue, and it is for this reason that we insist that the standard aimed at must be high. We admit it is a standard which at the present time can not be insisted upon; yet

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the only way in which we can approach it is to urge that you directors, when you go back to your various States, take these pamphlets and talk about the standards not only to groups of physicians and nurses but to the women of the States as well. Explain to them the reason for prenatal care. Show to them the dire results which come from the lack of prenatal care, and also show them that childbirth can be made much safer with this care. Make it clear to them that it is an insurance for their safe delivery, for it is well known that the careful physicians throughout the country who give intelligent prenatal care to their patients lose practically no patients, that there are few stillbirths in the practice of these men, and very few deaths in the first few weeks of the life of the infant.

Do not give the idea, when you talk of prenatal care, that it is a panacea for all the obstetric mortality in the country. Prenatal care means medical supervision of the pregnant woman. It will not prevent all the emergencies that arise in obstetric work. But good obstetrics can not be done without it, and what we need is that good obstetrics be available to every pregnant woman. Prenatal care is a means to this end, and if we are to accomplish this our standards must be high.

The CHAIRMAN. As I said, the discussion of Doctor De Normandie's very interesting paper will be at the end of the morning session also. We shall have now Miss Van Blarcom's talk about the nurse's part in a State program for prenatal care. You already know Miss Van Blarcom as the author of Getting Ready to Be a Mother, Obstetrical Nursing, and other books of especial interest to both the medical and nursing professions.

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THE NURSE'S PART IN A STATE PROGRAM OF PRENATAL CARE

By Carolyn Conant Van Blarcom, R. N.

Broadly speaking, the nurse's part in a State program of prenatal care is to assist the doctors in carrying out the prescribed details of supervision, instruction, and care of expectant mothers and to work toward the ideal of having every expectant mother in the land under medical care from the beginning of pregnancy.

The nurses' duties in such a scheme have been fairly well standardized wherever high-grade, organized obstetrical service has been inaugurated. For this reason, it seems to me, there is little as to details or routines that one could offer to highly specialized workers such as comprise this audience. The only possible suggestions that I can make are very general, intangible ones that are not easy to put into definite words without seeming to be unduly sentimental or romantic. They relate to the qualities, to the attitude and spirit of the nurse herself who is selected to help in carrying out a State program for prenatal care.

Not uncommonly an organization is established, routines of medical and nursing work are adopted, a registered nurse, perhaps with special public-health and obstetrical training, is appointed, given routines to follow, and set to work. All this seems to me a small part of what needs to be considered in connection with the nurse's rôle. For I am convinced that no matter how well she may be trained, the quality of the nurse's mind and the spirit that pervades her work are the determining factors in the effectiveness or futility of her endeavor.

If prenatal care were a prescription that the doctor could write for health and safety of the maternity patient and her baby, it would probably be enough for the nurse to be accurate, intelligent, and conscientious in executing the terms of the prescription. But prenatal care, as I understand it, is something in the nature of cooperative effort by doctor and nurse to reorganize and regulate, according to an accepted standard, the everyday lives of expectant mothers in their care. As no two of these patients are likely to have the same tastes, habits, and mental attitudes, it may require considerable ingenuity to mold their lives into the desired form. But that is what has to be done, in a measure, for the patient's own conduct, 24 hours a day, 7 days a week for 40 weeks, is really the deciding influence for or against the success of prenatal care. It is essential, then, to convince and educate the patient about the sustained importance of little things, and in a sense, to live her life along with her through a tedious, monotonous period. Encouraging, explaining, reassuring, helping her as she needs it and when she needs it. This, it seems to me, while she performs certain specified duties, constitutes a large part of the nurse's share in any program for prenatal care.

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Accordingly, before outlining the nurse's duties as to periodic visits, observations, instruction, and the like, something very impressive and stirring—thrilling if you like—must be communicated to her if her work is to reach the fullest effectiveness. Before she is even ready to begin, a few facts and beliefs must become so deeply rooted in her consciousness that they will color everything she thinks or says or does. It might be well to start her off by portraying her threefold position; namely, her relation or responsibility to doctors, to patients, and to the community.

1. Doctors.—In her relation to the doctors the nurse must be so convinced of the rightness of their procedures that she gives unquestioning loyalty and confidence, since her work is of necessity an interpretation of their ideas and wishes. She must appreciate the fact that every detail of maternity work originates in and is guided by the medical profession. From the imposing machinery of official organizations down to bathing the eyes of a baby in a remote mountain cabin, the entire scheme is the interpretation and application of medical teaching—application to individual mothers and babies of the practices that it has been demonstrated will safeguard the lives and health of these patients. This relation, then, rests upon a foundation of the nurse's loyal support of the doctor and his work.

2. Patients.—As to the patients, the nurse in her turn must win from them trust and confidence as she imparts the things it is decided they should be taught. It may not always be easy to convince a patient that details of care which seem to her wholly unrelated to her own or her baby's welfare will actually increase their chances for life and health; that she is literally taking care of her living, growing baby by taking care of herself. The advice and instruction will be followed consistently, as a rule, only if the patient has an almost affectionate reliance upon the nurse's ability and sincerity. Here, then, the nurse's satisfactory relation rests inevitably upon a foundation of the patient's trust and friendship.

3. The community.—In visualizing her relation to the community, the nurse should be helped to see in it a privilege as well as an obligation. It should be borne in upon her that her service is of such public importance that the future welfare of the race literally depends upon the aggregate of such work as hers, since widespread prenatal work can not succeed without nurses. To give her a grasp of the reality of the work she is undertaking she should be informed of the large number of women and babies throughout the country at large who die year by year from preventable conditions associated with childbirth, and also, what is perhaps of even greater importance, the uncounted mothers and babies who drag out wretched existences because they did not quite die from the same general causes. Contrasted with these she may be given a rosy picture of the mothers and babies who are not only alive but well and robust because they have had just such care as she will help to give to the patients within her professional horizon. That care is every expectant mother's right and the nurse should be taught to harp on that idea—adequate care for all maternity patients—and to shoulder it as her responsibility to work toward bringing

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about that ideal. This means persuading not only the prospective patients but also the public at large that good maternity care is both urgent and feasible.

Accordingly, a valuable part of the nurse's community service will be to dispel that death-dealing belief that having babies is a natural process and if let alone will take care of itself. She should never lose an opportunity to convince people that this process, like all other natural functions, reaches a satisfactory consummation when conditions are favorable. No one denies the value of good soil, warmth, and moisture in raising flowers or vegetables, nor the necessity of doing away with weeds, harmful insects, or blight. But only rarely is this the attitude taken toward raising babies. However, when husbands, mothers, and other advisers do see baby culture in the same light as horticulture we shall have more expectant mothers under care and supervision. Another function for the nurse in the community is to be so right in her own attitude, so earnest and ethical that she will win over the doctors in the offing to a belief in the appropriateness of prenatal clinics and prenatal nursing service for their own patients.

In summing up the threefold aspect of the nurse's function we come to feel that the entire structure rests upon a broad, inclusive foundation of mutual faith and of unquestioning belief in the rightness of it all.

Great pains should be taken, in my judgment, to explain to the nurse just what are the conditions that are so destructive of life and health among mothers and babies and why watchful care will rob these conditions of their terrors; what is known of the accompanying physiological changes and what they mean; the very earliest and mildest symptoms, how they are anticipated and prevented; and above all the tragic importance of securing prompt treatment when such symptoms appear.

The nurse should have a very clear idea, simplified though it be, of the whole scheme of complications, what is known of their causes, the accepted methods of prevention and cure, with steady emphasis upon prevention. She should be helped to grasp the sickening fact that the majority of maternity patients who lose their lives, die from lack of care that we know perfectly well how to give. Not care that is experimental but care whose efficacy has been proved. In short they have died from neglect!

The thing to be burned and seared into the nurse's brain is that the ideal we are striving for and that she must help to achieve, is adequate care for every expectant mother. This means getting every expectant mother under care and then making that care so satisfactory and effective that it will save her and her baby. To reach that end we need to have complete and skillful maternity service more widely available in this country and the lay public so widely convinced of the pressing urgency of good care in all cases that such care will be demanded.

What we need, apparently, is not that the high peaks of obstetrical work shall be higher, making it possible to save a few mothers from rare complications, but that the average of the care given to all patients shall be raised. Every detail of the care and supervision of even so-called normal cases should be regarded as of such impor-

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tance that it will be performed with the utmost pains. Every expectant mother should be taken seriously. This should be repeated over and over and never lost sight of. Every expectant mother should be taken seriously!

For practical reasons it would seem that the scheme of care should be cut down to the simplest minimum that is compatible with safety, and then the nurse and patient alike should be taught to regard every tiny detail with the respect that it merits. That those in high places give high value to the minutiæ of obstetrical service is not enough. The whole matter needs to be exalted in the minds of the many to the plane it now occupies in the minds of comparatively few. The nurse should appreciate this, and by precept and example of her directors she should be so constantly impressed by the dignity and enormous importance of all aspects of maternity service that her attitude will be insensibly communicated to her patients and the public.

In addition to a general unawareness on the part of the public, there are a thousand and one obstacles to prenatal care in the minds of expectant mothers themselves. One, for example, may feel that it is a good thing for the mass but that she is sure to be all right! Another may lack encouragement from an unbelieving or unsympathetic husband who remembers a mother that had a dozen or so but never began bothering until the baby started to come. Another may look upon it all as a harmless nuisance for which she has no time, while still another may have that very common, illogical feeling born of fear that if she puts herself under care the doctor will be sure to find something wrong. Also that it is bad business to be thinking too much about yourself, and so on!

So the nurse must be helped to see that there is not only ignorance but indifference and distrust standing in the way of widespread acceptance of and seeking for prenatal care.

Now, to be a little more specific, the nurse's part in prenatal care, whether it concerns one patient or an entire State, is to secure for the doctor sustained, first-hand, up-to-date information about the patient's condition and to transmit to the patient, by repetition, simplification, and adaptation, the advice and information the doctor wants her to have but which he rarely has time to dwell upon as long and as often as he would like, for each patient. In a sense the nurse functions as the eyes and mouthpiece for the doctor during the intervals between his consultations. This assistance, then, seems to consist chiefly of (1) watching, (2) teaching, and what may perhaps be described as (3) sustaining.

1. The details of the *watching* are likely to be specified in the routine observations the nurse is instructed to follow at each conference with the patient. The importance of recording each observation, no matter how well and normal the patient may be, and of promptly transmitting the report to the doctor after each visit, must be emphasized. The requirements for taking temperature, blood pressure, and testing urine should, in my judgment be so rigid that one would never hear the nurse say that these observations are made "as indicated" or "when indicated." All possible symptoms should be observed and reported *before* the necessity is indicated. The doctor then, of course, may do as he thinks best.

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But too much importance can not be placed upon the value of complete pictures of the patient both mentally and physically. And in this connection I feel strongly that the nurse should be urged to note such intangible symptoms as depression in a woman who is ordinarily cheerful, fatigue out of proportion to the effort made, and perhaps a newly developed tendency to carelessness, since it may indicate fatigue, or depression, or both. The nurse should be aware that these delicate symptoms may be the first evidence of toxemia and not only report them promptly but increase her own watchfulness. Being the doctor's eyes in truth may be one of the most valuable services the nurse can offer in the prevention of complications.

(2) The teaching has four general aspects, as I see it, somewhat as follows:

(a) Teaching the expectant mother how to take care of herself and her baby during the nine months before the baby is born. It seems to me very worth while here to give the mother the feeling from the very beginning that the baby is there, a living being, and that she is actually taking care of it all those nine months before she can see and hold it in her arms.

(b) Describing to the patient the changes in her own body, associated with pregnancy, that she is likely to notice and perhaps not understand, and also the common symptoms of complications which she may detect and should report.

(c) Teaching the patient how to prepare the baby's outfit, including clothes, toilet tray, bed, etc. And also to try to visualize with the patient what it is going to be like to have the baby in the home, help her to anticipate a sense of the baby's presence and fit it into her own life and into the routine of the home.

(d) Helping the patient to prepare for the home delivery, if that has been determined upon. This means such things as bed, dressings, nightgowns, and the like.

In connection with the nurses' teaching I think we should bear in mind the educational value of equipment. Demonstrations are much more easily understood than verbal descriptions. In the case of the baby's clothes, it almost invariably gives the prospective mother a thrill to see and handle them and the cozy, pleasant atmosphere that is created while the clothes are in the making helps to build up the relation that is so desirable. There is something very winsome about baby clothes, and to actually work over them, understanding the purpose of their design and texture, gives the expectant mother an increasing sense of the reality of her own living, developing baby. The equipment at the maternity center need not be elaborate nor expensive, but there is a minimum without which the nurse can scarcely be expected to teach effectively. In addition to the layette there should be a model of an improvised bed for the baby—a box or basket—a doll to dress and undress, the toilet tray equipped with articles needed for mother's and baby's daily toilet, a bed to use in demonstrating preparation for home delivery, and the minimum of these dressings, which need amount to little more than pads and newspaper protectors for the bed. With the model toilet tray before them it is possible for the mothers to see how they can assemble an entirely satisfactory one from things they have in the house.

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The nurse will sometimes need no little ingenuity in adapting the routines and details of care as prescribed by her organization, to the mentality, traditions, and varied demands of the daily lives of the patients. But this she will have to do, for though the circumstances and personalities of the patients may be infinitely varied the general needs of all expectant mothers are the same. I think that the nurse should never be allowed to lose this viewpoint—that no matter what the difficulties may be, no matter what the situation is, the patient stands before her needing something that the nurse can give and she must meet that need no matter what it requires of her. She must carry the message to Garcia.

3. When we come to the third aspect of the nurse's rôle, that of giving moral support or sustaining the patient, I think we have about come to the heart of the matter, so far as she is concerned. For after all, the point of every bit of study, work, and planning is what happens to the individual patient. What she does and how she lives are almost the proving point of the entire scheme. No two patients are in the same situation, financially, socially, and so on, nor for a variety of reasons will any two give quite the same response to the advice the nurse may give. But, for all of that, we must produce something like uniform results in the way the patients live their lives.

It becomes necessary, therefore, for the nurse to study each one of her patients and bring herself to such a state of sympathy and understanding that she will see the problem from the patient's standpoint, so far as that is humanly possible. To get inside the patient's mind, in a sense, so as to feel and appreciate all of the doubts and difficulties that present themselves to her. And also to make the patient feel that she does see the thing through her eyes. Through all of this the nurse must have such absolute faith in the urgency and feasibility of the measures she is advocating that she will be able to communicate this faith to her patient. And the principles and purposes of her teaching must be so clear in her own mind that she will be able to help each patient to adapt and adjust them to the possibilities of her own daily life; that is, applying the theories to practical things in each patient's home.

In connection with this effort to inspire the patient's confidence and win her cooperation it seems to me worth while to beard the lion in his den and anticipate the fears that we have good reason to believe most patients entertain. Very often these fears are buried so deep the patient will scarcely admit them even to herself, much less to her family, friends, or even the doctor. But they are there and she wakes up at night and remembers the neighbor that had convulsions, or some one who had hemorrhages or fever or worse still, the one who died and left a motherless baby robbed of the affection and understanding it should have had. And inevitably she runs over in her mind the women who have had ill health since the birth of the baby, and she thinks, too, of the babies who have been born dead or died during early infancy. Each time she marks a day from the calendar she knows she has cut down the distance to be run before she reaches the moment that may hold in store one of the dreaded possibilities she has been thinking of. If a woman is thoughtful or even moderately imaginative it is difficult to think of

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her moving steadily forward for nine months toward an inevitable conclusion without considering the possible dangers, particularly when there is a legion of friends burning to tell her of them. It literally makes life over for some women to have the nurse tell them of the disasters that they may expect to hear of from their friends and then clear the air by explaining that the very things they most fear are preventable and that the whole purpose of all that is being done for them and with them is to avert those identical catastrophes.

Then there are the reasons why the expectant mother may not want to have a baby. When she and the nurse get into the habit of sitting down and talking things over in a gossipy, leisurely fashion it is amazing how often an objection to motherhood of one kind or another will show its head. One woman may be selfish and resent the inconvenience of having a baby because of the inroads it will make upon her luxuries and freedom. Another may feel unfit to meet the responsibility of rearing a child. There may be well-grounded anxiety about the financial drain of a new baby in the family or there may be merely a habitual unwillingness to accept any important change in the general scheme of her life. There are almost countless reasons for not wanting a baby, but I have never heard of one that couldn't be shattered to bits and completely dispelled by the mother herself if she could be encouraged and helped into a different mental and emotional state. The woman who is reaching forward eagerly for the moment when she can actually hold her own baby—the one for whom life is simply an ecstasy of anticipation—has no room in her thoughts for anything but a hungry welcome for her child. Over and over we see the nurse who loves babies and knows the joy of caring for them communicate her own thrill and enthusiasm to the reluctant prospective mother and transform her attitude into one of happy expectancy.

The actual work of the prenatal nurse is carried on by visiting the patients in their homes and also having the patients visit the maternity centers for individual consultation and group instruction. Visiting the patient in her home occasionally is valuable because the nurse learns something more about the patient as an individual when seeing her in her own environment than is possible away from it. And more than that, by knowing the patient in her own home the nurse can be more helpful in adapting and adjusting the desired routine of personal hygiene to her possibilities. And in the home she can help in a practical way to assemble the desired equipment from things already in the house or that may be easily procured. Having the patient visit the center also has advantages, for in addition to saving the nurse's time it offers opportunity for teaching and for demonstrating the equipment. And there is a friendliness about the group instruction that is worth while.

The character and extent of the instruction and supervision given by the nurse is, of course, decided by the medical board of her organization and is often affected by the conditions under which the work is conducted. The nurse in a rural community, for example, may take blood pressures and make urinalyses, while in cities, rich in doctors and medical institutions, these observations may not be among her duties. But whatever the details may be the general

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principles and the spirit pervading the work are the same. And always in the mind's eye is the ideal for which we are striving—complete and efficient care for every maternity patient.

Another point that I feel should be made repeatedly is that thought it is granted to be desirable to send primiparae and complicated cases into a hospital, by far the greater number of maternity patients are and probably will continue to be cared for in their homes. In other words, the widespread problem of maternity care is largely a problem of home care. If we are to raise the standard of care given to all patients throughout the country great pains must be taken in preparation for home delivery. This planning is logically a part of the nurse's prenatal work, and it should be incumbent upon her not to disrupt the household but to make these preparations with the least possible disturbance and commotion. I think there would be much less objection on the part of a good many women to having babies if there were not so much fuss made about it and if it were a simpler and cozier and easier transaction. The nurse really can do a great deal toward this end if she realizes that satisfactory preparation for a clean delivery may be made without taking down all the pictures, ripping up the carpet, and generally destroying the peace of the home. I think it should be impressed upon her that lack of confusion is really a mark of efficiency and that she promotes the patient's welfare by making the event as happy and comfortable as possible all around.

Perhaps all that I have had to say seems too general to be practical. But my feeling about the nurse's part is this—if she did effectively for every expectant mother all that the ideal program allots to her we should have almost no problem. For by "all" I mean all the intangible service included in "watching," "teaching," and "sustaining." It is the endeavor to have it all done effectively that constitutes a task. In the end, given average training and intelligence, I feel sure that the nurse's spirit—her attitude toward her work—is the most influential factor in her equipment. She should be dignified and at the same time have an enthusiasm, and even gaiety, that will infect her patient. She should do all that comes within her province to make her patient's adventure a joyful one. This she will do if she loves her work and brings to it a sense of romance and wonder, even reverence, for the great recurring miracle of a new life that is taking place before her.

The nurse engaged in maternity work who infuses into it some such spirit as this can not fail to do well the work that is assigned to her. Without it I think she can scarcely avoid failure.

Perhaps we may sum up by saying that the nurse's part is to take the hand of the patient as she treads the long road of expectancy, pressing it warmly always, holding it firm over the rough places, and steadily giving the best she has to offer of tenderness, understanding, and skill.

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DISCUSSION OF THE PAPERS OF THE MORNING SESSION

The CHAIRMAN. I am going to turn the chair over to Doctor Haines now during the discussion. I am very happy to say that Doctor Haines is one of you, so I really hardly need to introduce her as the new director of the maternity and infant-hygiene division of the Children's Bureau.

[Dr. Blanche M. Haines took the chair]

The CHAIRMAN. We have approximately three-quarters of an hour for discussion. No one has been asked to lead, but we expect you all to take your part and to ask questions that will help you carry out the standards. Not only have we had standards in prenatal care from the physician presented to us, but we have also had a standard in prenatal care given us for nurses. I am sure that you wish to consider how you are going to put these standards into operation in your various States. Has anyone a question to ask Doctor De Normandie, or Miss Van Blarcom, or Doctor Boynton?

Doctor GARDINER. I should like to ask whether the obstetrical units in the States where they have them make internal examinations and routine Wassermann tests. We have not yet done it in New York, for obvious reasons; but I think we must do it very soon, and I should like to have a little encouragement.

Miss MARRINER. That is done in the maternity center in Birmingham.

Doctor GARDINER. I have in mind the migratory units particularly, where there is not very much center work.

Doctor BOYNTON. Pelvic examinations are made in our prenatal clinic in Minnesota. We do not do Wassermanns routinely, although they are done in occasional cases; but every woman who comes to our clinic for examination does have a pelvic examination.

The CHAIRMAN. Do you limit that at all in relation to the length of time of pregnancy?

Doctor BOYNTON. Of course a vaginal examination is not made within the last two months of pregnancy; a rectal examination is made, however.

Doctor KOENIG. Who makes these examinations?

Doctor BOYNTON. We have been very fortunate in having well-trained obstetricians, Doctor Adair's associates, from St. Paul or Minneapolis, to act as clinicians in our itinerant clinics.

The CHAIRMAN. Doctor Adair has conducted some demonstration clinics, has he not—you might call them demonstration clinics—for local physicians? Has not that been the type of your work?

Doctor BOYNTON. That has been more or less the type of our work. Our prenatal clinics have been itinerant, and it has been our purpose to examine as many expectant mothers in a community as would come to these clinics. Before the clinic, however, the physicians in a community have talked over the plans, have co-operated in these clinics, and have been urged to bring any com-

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plicated cases about which they might wish to have consultation at the time of the conference.

I believe that pelvic examination is extremely important from an educational standpoint in these itinerant conferences because it teaches the women that this is part of a thorough prenatal examination. It not only teaches the women themselves that we consider that a part of a good prenatal examination, but it also further impresses upon the community the fact that that is a part of a prenatal examination.

Doctor BLACHLY. Acting upon Doctor Boynton's advice at the previous conference, I tried a few of these in Oklahoma along the same lines, and we have had a greater number of demands from the county medical associations for our obstetricians to do this work than we have obstetricians to supply the demand. They make internal examinations.

The CHAIRMAN. And do you make routine Wassermann tests?

Doctor BLACHLY. We recommend routine Wassermanns in every case that we reach through the mail in our prenatal literature. As we have not held many prenatal clinics, I can not say whether a routine Wassermann has been taken in every instance.

Doctor KOENIG. As Arkansas is largely a rural State we hold itinerant conferences all the time; and as our nurses go about doing work and organizing for them we also advertise for our prenatal conferences. I wonder what we can do there where we have inadequate medical service and where midwives make at least 25 per cent of the deliveries. We have requests continually from the expectant mothers that they be given pelvic examinations. I have felt, and Doctor Garrison has felt, that we had to be very careful in making pelvic examinations because we wanted to be ethical and professional. Should I make pelvic examinations at these conferences without consulting the family physician—and many times the women have no family physician? I wonder how far we should go at child-health conferences in making these examinations and what would be the best procedure. I have made a number of examinations thus, but always in the presence of the woman's family physician. I wish we could have some help on that. Although the mothers come to conferences, they hesitate to tell us about themselves unless we take them privately. They do not talk about these conditions with the freedom that the city mother does, yet we should so much like to help them. We have only two prenatal centers in Arkansas, and our conditions there, of course, are very different from what they are in the North and West.

The CHAIRMAN. I think that we should like to hear from some of the States that have been doing prenatal work, as New York and Pennsylvania, on the attitude or on your procedure in relation to the family physician. Doctor Gardiner, do you examine patients at your itinerant conferences in New York, and how far do you go when that patient is already under the care of the physician?

Doctor GARDINER. We do not accept any patients at our prenatal consultations unless they come with the permission of their physician, except unregistered cases and the cases of midwives. However, this number is increasing very much. The percentage of cases referred to the consultations for 1925 is double that which prevailed in

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1924. Our reports come to the office and are there transcribed, then a full report is given to the family physician from the office. Of course, a different procedure is followed when those consultations are turned over to the local people. A great many of our standards then fall down, but I believe the principle is maintained that only patients are taken who are not registered with physicians or who have the request or permission of the family physician.

Doctor Stadtmuller. Do you have that request in writing?

Doctor Gardiner. The physician must send a note, a written permission or request.

The Chairman. Doctor Noble, have you something from Pennsylvania to add to this discussion?

Doctor Noble. I am afraid we have nothing to offer as long as you are talking about itinerant clinics. We have nothing of that sort in Pennsylvania. We have only 11 permanent centers under State control and 72 centers not under State control—chiefly in Philadelphia and Pittsburgh in connection with large, rich, and well-organized hospitals. I can not speak for those clinics at all. Our 11 State centers are struggling, I think, through a very discouraging part of their history. I shall have to look back three or four years to see any gain at all in the clinic work for prenatal care.

What we are emphasizing to-day in Pennsylvania is the field work, the home visiting, which the public-health nurses can do. We are trying our best to link that with the work of private physicians by having the town where it is undertaken canvassed very carefully by the nurse. Sometimes the nurse, accompanied by one of our field organizers, makes a personal call on every physician, explaining exactly the meaning of the prenatal care which we wish to have given to the patient and of having their cooperation. The physicians are asked to sign a card stating that they are willing to have their patients receive this care; or we ask them whether it can be taken for granted that if patients mention their names the patients may receive care from this public-health nurse; or they state on the card, with their signature, that they would rather refer each individual to whom they wish that care given. That is, they reserve in their minds some cases to whom they think this nurse should not give care. We are encouraged about this kind of prenatal care, and it is being carried on by the State nurses who are equipped with the bags, which I think we mentioned last year as lying more or less idle. Now a good many nurses are actually going out and finding the patients and giving this kind of care.

Our two greatest problems are the physician who does not know or does not believe in prenatal care because he does not understand it, and an entirely apathetic laity such as Miss Van Blarcom has pictured, who have no idea of the meaning or necessity of prenatal care.

We are trying to talk to the women just as hard as we can. I am trying also to devise ways in which we can go out and talk to the physicians a little harder. But we have no permanent itinerant clinics.

Doctor Ingraham. How often are these meetings or clinics held?

Doctor Noble. We try to have them conducted weekly by a local physician just like our permanent child centers—no itinerant work whatever.

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Doctor INGRAHAM. Can you hold these permanently in little towns?

Doctor NOBLE. No, in towns of 10,000 or 8,000 people.

Doctor KNOX. We have done nothing in Maryland that is any contribution to this line at all, but I wish to say just a word from the standpoint of the physician. All of us, of course, are very much concerned, I think, in directing a larger amount of the ordinary practitioner's time into preventive lines. Certainly no line of preventive medicine has more importance than this work, and the physician should give a larger part of his time to prenatal care, because the hazard of the lives of both mother and child is very real and the work of the physician is particularly concerned. It seems to me that those of us in charge of child-health work in our various States should at least query whether by stressing prenatal clinics held by State organizations or by State physicians we may be assuming a somewhat dangerous attitude. Are we not perhaps making it more difficult to encourage the physician to do this work himself?

You know Doctor Emerson has said that our ideals must be not the number of children that come to our clinics for corrective work, not the number of mothers that receive prenatal care or are delivered through State clinics, but the number of children without physical defects that each year enter the first year in school; that are without the defects because parents themselves have brought these children in time to their own physicians and received this kind of help.

In Maryland we have been trying a somewhat different plan. We have been having our well-known obstetrical men deliver lectures on obstetrics (just as they have been doing, I know, in New York State) to groups of physicians in the different parts of Maryland, including one or two talks about prenatal care very much along the lines that Doctor De Normandie has just given us. These have been very carefully and very appreciatively received. County medical societies have turned out, in one instance almost to a man, and have realized that they do not know all they ought to know about prenatal care, although they are willing to give it. Then, it seems to me, the health officer's duty is to bring the community, the laity, up to this point of view and refer them back to the physicians to show them that they can not get satisfactory service for mother and child without prenatal care, and have it brought to them through their own physicians.

Certainly the normal process of childbearing must be in charge of the physician, prenatal care must be considered an integral part of it, and it must remain largely the work of the general practitioner. I hope that we can bear this in mind and that our clinics will have only the purpose of increasing the work of the physician in this important line.

In Maryland we can not prevail upon the country woman to come to prenatal clinics separate from child-health conferences. We have tried a number of times. Maybe they will in the future, but they will not do it now. But the nurses, just as has been said concerning Pennsylvania, find these cases. The mothers sometimes come to our child-health conferences and the nurses find these cases by the score and take them early in their pregnancy to their own physicians. Then it is the duty of the leaders in obstetrics, it seems

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to me, to teach these physicians a little bit more; and it is certainly our responsibility, as public-health officers, to get a larger proportion of the women of the community in the hands of their physicians early.

Doctor GLEASON. I wish to support what Doctor Knox has said. In Rhode Island we are not doing a great deal in the way of prenatal clinics; in fact, as a State department we have not one. What we are trying to do is this very thing; namely, to build up in the minds of the public and in the minds of the physicians the need of prenatal care; and wherever our workers who go into the homes meet these prenatal cases they refer them to their family physician and lead the women to demand proper prenatal care from their respective family physicians.

Mrs. HOWE. The situation is very much the same in Arizona. We have no prenatal clinics, but our nurses have gone into the highways and the byways and gotten in contact with the prenatal cases. The one discouraging situation that I encounter is, when you have gotten an expectant mother in the attitude of wanting to accept the best of prenatal care, finding the physician unable to give it.

Doctor BARNETT. I think that is true for all of us. I am speaking from a physician's standpoint. The first thing we do in Texas is to write to the secretary of our county society, where we have a nurse in a county, and tell him that we are having this nurse come there. We take this up from the physician's standpoint and ask for his cooperation and for the cooperation of the medical society. We do not have the clinics—we can not have them in rural districts. It is all right for the larger centers, but we are not trying to have them in the rural districts. But when we have a health conference at any point we receive from the physicians assistance that we would not have otherwise, and cooperation also. This is the result of sending the nurses to them directly when we first go to the county to talk over our program with them. But if a nurse enters a county and goes to see a physician's patients without consulting him, making suggestions to them, and sending them to him, the physician is very likely to be annoyed.

The CHAIRMAN. Doctor De Normandie, will you tell us how we are going to get these standards across to the physicians? I think we all agree that we want these standards.

Doctor DE NORMANDIE. I have talked throughout the New England States more or less on standards similar to these. I do not know how we are going to make the men realize the importance of it. It comes back to the teaching of obstetrics in the medical schools.

You simply have to talk it to the physicians constantly, constantly. I think better than talking to them is letting the laity know what is right; that is, women are coming to me constantly because they have been taught; and in Boston it is reiterated that they must consult a physician very early. Just before I came away I had a patient who said, "I don't know as you will look after me now; I am three months along and I have seen nobody." That is the proper attitude to get a woman into if she is going to have good medical care.

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One word about the time it takes to put such standards as these over. Up to the point where you begin to talk on the hygiene of pregnancy it goes very quickly; from then on it is slow, careful work, carefully chosen words to explain in nonmedical terms what you mean by the hygiene of pregnancy. I think it is the best work that we do when we sit down and talk to a patient and get her into the proper frame of mind. Now, can nurses do that unless they are specially trained? They are not all Miss Van Blarcoms; they can not talk the way Miss Van Blarcom can. Yet they must talk that way if they are going to put it over satisfactorily. I am sure that Miss Van Blarcom is a tremendous help, going around to the nurses and talking the way she does. I know that the question came up about putting anything concerning nurses into these standards. We talked and we talked about that phrase, and we finally compromised on that which you will see on page 3—" a properly qualified nurse working in conjunction—." "A properly qualified nurse." There is the whole rub. Many nurses do a tremendous amount of damage. They undo all that some of us physicians have tried to do by talking to our patients. The nurses should be taught just as thoroughly as the physicians; yet that is not being done. The standards for nursing care are all different throughout the country. In Massachusetts there are certain hospitals to which I would not send an obstetrical case because of the care.

I do not know how we are going to put these things over unless we constantly talk it, talk it, talk it. It seems very discouraging. You go around and talk to these various men, and they say they do it. But you know very well they do not do it. I see it all the time. Obstetrical consultation work is the worst type of consultation work there is in medicine. It is because they will not do what they have been taught to do. We are teaching them the fundamentals of obstetrics properly, but a lot of these men throughout the country have no conscience in obstetrics. That is the trouble, I think.

Miss MARRINER. Doctor De Normandie, do you or do you not indorse the claim of some of the specialists in venereal-disease control that the period of pregnancy is the most auspicious time for the treatment of luetic conditions?

Doctor DE NORMANDIE. I am not certain as to whether that would be the best time to treat every luetic case, but every pregnant case that turns up should have a Wassermann.

Miss MARRINER. I was informed recently that we nurses might tell patients that that is the most auspicious time for such treatment.

Doctor DE NORMANDIE. I do not think that is a fair statement. I think the most auspicious time is the moment it is found out.

Doctor SCHWEITZER. There are a number of points in which I have been interested. I must say first that in Indiana we have no prenatal clinics in connection with our State department. I know of a very effective one in connection with the State university, and whatever others are in operation are under local supervision in the larger cities, of which we have very few.

With regard to lay education—I do not wish to encroach on what I am going to say later, but I feel that it is pertinent to bring this to your attention now. We have had since February, 1924, groups

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consisting of one physician and one nurse, working in various parts of the State in systematically organized territory to bring this matter before the lay public; and we have not limited our discussions to pregnant women. All women have been invited. Mothers may bring their daughters to these classes, and we have received in this, I think, a great deal of cooperation from the lay public. In fact I know that a good many women have gone directly from the class to their family physicians for prenatal care, although they had not previously thought about going early. I do not say this in any spirit of levity, but just to show you what the actual conditions are. Occasionally a woman says, "I went to my physician as you said, but he looked at me and said I was all right. He did not offer to give me any examination. What shall I do?" Now, what would you advise her to do in that case? I usually tell her to go to a physician who will give her that kind of care. If the physician whom she has consulted does not consider that kind of care important, there are physicians who consider it so and who will give her adequate care. She must not stop until she finds that sort of physician.

We have sent into every county where we have worked a letter telling the physicians in the county that the physicians and nurses are coming. The letter is accompanied by a questionnaire as to the physician's own standards of prenatal and obstetric care, his standards of infant care, and a request for any suggestions that he may wish to make concerning what should be taught in his own community. We do this on the assumption that the physician himself knows what the community needs better than we can possibly know. We have sent these letters to all physicians whose addresses we could obtain in every county, and up to September 30, 1925, we had received 70 replies. The physicians who sent in these replies said that almost no septicemia had occurred in their practice. We assume that these physicians are all honest in their statements, and we made a report on that basis. We said that the physicians who replied to these questionnaires—without saying anything about those who did not—were evidently well versed in obstetric practice and used the best standards in their work; and that evidently they were getting results because they had no septicemia or almost none in practices extending from 10 to 25 and 30 years. That is a very good record, I should say. Although a large number did not reply to the questionnaires we regard the evidence submitted by the men who did reply as very fine. I shall talk more about that later.

The CHAIRMAN. Miss Van Blarcom, we should like to know of some specific instances in which nurses have really helped in the prenatal programs of States. Can you give us something on that?

Miss VAN BLARCOM. What can be accomplished by nurses who love their work and carry it on with enthusiasm is illustrated by the recent inauguration and rapid development of a prenatal program in Tioga County, N. Y. I refer to the demonstration undertaken by the division of maternity, infancy, and child hygiene of the New York Department of Health, in cooperation with the Tioga County Medical Society and the Maternity Center Association of New York City. My understanding is that the conditions under which the work was started were about average, with the usual

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amount of indifference or resistance to prenatal care on the part of the laity and most of the physicians. But the effort to convince the physicians and patients of the value and feasibility of prenatal care has been astonishingly successful, and credit for much of this success seems to be given frankly to the nurses loaned by the Maternity Center Association, who had been carefully and wisely chosen. They loved their work and were enthusiastic and resourceful; having worked under the inspiring guidance of Miss Louise Zabriskie, they brought to their undertaking just the attitude and spirit that I attempted to describe in my paper. By their ability, personality, and sincerity they have practically won over the entire county, and at the end of six months, if I remember correctly, more than one-half of the expectant mothers in the county had been referred to the nurses by the physicians themselves. One physician in a remote part of the county was so eager to see the work extended that he offered a part of his home or office to be used for mothers' clubs, or as a place where nursing visits could be made. My impression of the demonstration is that the nursing side of it is really a model of what can be done by the right kind of nurses under the right kind of direction.

The Chairman. I think Doctor Tallant, of Philadelphia, an obstetrician on the staff of the Philadelphia General Hospital, is in the room. Doctor Tallant, will you not add something to this discussion?

Doctor Tallant. I am afraid that perhaps my experience will not be of much help to you because, of course, it is so largely city experience, and what you are all interested in is work in the rural districts. But I know that in the small towns in the rural districts you have in many of your States the foreign population, and that is what we have had to deal with in the southeastern part of Philadelphia, where much of my work has been; and I feel that getting the confidence of the foreign population is one of the great things that we need to do in putting forward any standard of prenatal work. That can be done in the clinics as we hold them, where we have many Italians, Russian Jews, and Poles to deal with. The Italian people in particular seem to be very willing to be looked after and like to come to the clinics, especially if you can say two Italian words. If you can say "bello bambino" then they will beam; or if you say "bella Italia"; either one will be enough. If you can just make them see that you are interested, that you want them to come, that you want to talk to them—and the best way to get at them, of course, is through the clinics to which they bring their children for examination. When they see that you are interested in the babies they know that you will be interested when another baby is coming, and then they wish to come and consult you about the baby that is on the way.

That is really all I can tell you that has a bearing on your problem. It is true that I had some work in a very rural district in devastated France during the war, but I hardly think that that would be at all akin to any work you are doing.

Miss Lockwood. Our experience in Delaware has shown that if we depend on the prenatal clinic for demonstration we will have very little work done in the State. Miss Van Blarcom has brought out

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the real crux of the situation when she says that the woman who goes to the home must be of the type who can carry the message. Most of our work is rural, but it extends throughout Wilmington, which is the only city in the State; so you can see what a varying situation we have to meet. We have in Wilmington two prenatal centers to which we can send women. Comparing that with what we have in the rural sections, which is just one-half the population, we find that very few women take advantage of this prenatal clinic.

I am very sorry to say, and I think that Doctor Knox will agree with me—in fact, he has said what is in my own mind—that the work will have to be done in an entirely different way in some of our States. The only one who can accomplish this work is the rural nurse. She is carrying the message and is getting it over. I have felt many times so discouraged that I wondered if it was worth while; and yet we constantly receive calls for the nurse to come to women, and we are being asked whether the women can obtain this information. We are blocked in certain ways, but on the whole the trend is upward. We are getting the message to the women and to the community.

Now, we may talk about taking what we hear at this conference back to the organizations and talking to the women. We are all doing that, I know, in every State. But a very large number of people never come where we can tell them about it. They never come to mothers' meetings, nor anything else. We reach only a certain group of people, the best ones, probably, in the community; and although they do need good maternity and prenatal instruction they can get it. But the largest part of our population, who need it most, are those who will not attend any meeting. They are the ones to whom we must go, and go, and go, to get the message to them.

I think we have all assumed the attitude that this thing can be done very rapidly. I have been so full of enthusiasm that I felt it could be done in one fell swoop. But it can not be done in that way. We all have our discouragements along the line—although I do not think that anyone in any State could have more than we have had in Delaware. We have had it from every possible source, but we are getting the message over. And who is getting the message over? Those nurses who are going about in the cars and going into those homes, and who keep on going and never stop. So I feel encouraged, because we are receiving inquiries, and because requests are made that the nurse come to these cases into whose lives you would not think it would be possible to instill a ray of hope. Consequently I am not nearly as discouraged to-day as I was two years ago when we had more money. We are accomplishing the work; and it is being done by going back and working with those people in the community.

Doctor Koenig. Are those nurses who go back and forth your own State nurses or are they county nurses?

Miss Lockwood. I think we all vary so in our administration that it is difficult for us to visualize what happens in each State. We all have to solve our individual problems in the way that suits us best. In Delaware they are all State nurses. We have two centers in Wilmington and one place outside, near Wilmington. We have visiting nurses in Wilmington, also State nurses who have centers,

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prenatal, maternity, and tuberculosis, under the State board of health. So our system is one that radiates throughout the State, and we are not dependent on the local nurse or the local welfare association, or whatever you may have in your State. We control the nursing situation throughout rural Delaware. The only trouble is that we have not enough nurses to control the situation.

Doctor DE NORMANDIE. May I ask if the prenatal clinics are run by nurses? I think you made that statement.

Miss LOCKWOOD. No, we have only the centers in Wilmington. We have no prenatal clinics in Delaware. The nurses, of course, are in charge of the centers where these clinics are held.

Doctor DE NORMANDIE. But the clinics are held by physicians with a physician in charge?

Miss LOCKWOOD. Certainly.

[Meeting adjourned.]

MONDAY, JANUARY 11—AFTERNOON SESSION

BLANCHE M. HAINES, M. D., DIRECTOR, MATERNITY AND INFANT-HYGIENE DIVISION, CHILDREN'S BUREAU, PRESIDING

The CHAIRMAN. We shall follow the plan that we had this morning, and consequently we shall expect you to keep note of the first paper as well as the last, and be ready to discuss all of them at the same time.

There has been a rather general desire for something on vital statistics in relation to the infancy and maternity program, and we have asked Mr. Henry Schultz, of the statistical division of the Children's Bureau, to speak to us on the use of studies and graphs in this connection.

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STATISTICAL STUDIES AND GRAPHS

By Henry Schultz, Director, Statistical Division, Children's Bureau, United States Department of Labor

An ex-president of the Royal Statistical Society is reported to have justified the very abstract and mathematical nature of his presidential address on the general theory that there ought to be at least one paper at every convention which no one, or hardly anyone, can understand. I suppose that those responsible for this program must have taken a leaf out of Professor Edgeworth's philosophy, otherwise I can not explain my presence here to-day.

Statistics to most persons is the driest, the most uninteresting of all imaginable subjects. It is commonly supposed to be nothing more than a mere collection of figures, rows and columns of them—the dry bones which are juggled by liars, pleaders for special interests. That statistics is also a body of laws and principles, a method of procedure which guides, or should guide, the collection, analysis, comparison, interpretation, and presentation of numerical data; that statistics is also the handmaiden of the social sciences; that statistics is, in short, a new method of acquiring knowledge, an explorer, occupying a position something like that of the telescope in the physical sciences, has not been so very well known—not even among the rank and file of the social workers.

To a certain extent this condition may be explained by the training and attitude of mind of most social workers. The social worker is primarily a case worker. That is to say, he is a particularizer more than a generalizer.

When a mother brings her infant to the child-health conference you examine him. You weigh him. You measure him. You try to find out everything about his physical well-being, and you advise the mother as to his care and his general welfare. Another mother comes with her baby, and the same procedure has to be followed. To act on the experience of the first child would of course be ridiculous.

When a youngster is brought to the court on charges of juvenile delinquency modern methods require that everything that caused the delinquency, his home and social surroundings, and his inherited traits, be carefully looked into. Some agencies even require that he be given a psychological as well as physical examination in order to discover what remedial measures may be applied.

When a family applies for relief to a charitable organization that family becomes a case for investigation. Every effort is made to find out why the family is in the condition in which it finds itself; whether, for example, it is due to the illness or incompetency of the wage earner or to other causes. Inquiries are also made as to the age, sex, and schooling of the dependent children, and as to many other factors which will throw light on the needs of the family under consideration. To act on the basis of the previous history of

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another family would, of course, not get us very far. Each family must be treated separately.

The foregoing examples illustrate the method of the case worker. It studies the characteristics peculiar to the case in hand. It is the only method available for the purposes in view, and no criticism is intended on this score.

But the statistician is interested not so much in individual differences as in the characteristics common to the group as a whole. He has no quarrel at all with the other methods of approach. They have their place; but a stage arises in every investigation where none but the statistical method can be used to advantage.

Let us say that you, as a physician, are called upon to answer the question whether a given child is normal or abnormal as regards weight, height, or any other characteristic. You can not possibly decide this question on the basis of individual experience. Such a question requires a statistical approach. You must weigh and measure thousands upon thousands of children to find out the average weight or height, determine by how much the weight or height of the child under consideration differs from the average, and then apply statistical methods to discover whether the difference is significant or not.

That is to say, the statistician overlooks a good many individual characteristics, in order to be able to discover those characteristics which are common to the group as a whole. If the case worker may be conceived of as looking at the trees rather than at the forest, the statistician may, in contrast, be pictured as training his telescope on the forest and not on any particular tree.

If the two types of workers could carry on their work without ever coming in contact with each other, no difficulties would arise. But most problems, especially those relating to the social sciences, are interrelated, interconnected. A stage arises where the social worker must become a statistician or must seek the aid and advice of one, and it is at this point that many difficulties arise. The social worker is apt to carry over to his statistical work a good many of the characteristics or habits of thought and action common to case work. It is not at all surprising, therefore, to find that many of the "statistical" reports of social agencies are nothing more than compilations of case records. I dare say all of you will find, if you take pains to do it, "statistical reports" which are filled with such material as the following:

> One parent was found to have deserted the family, another ill. One child was in a reformatory; another ran away from home. The youngest girl was rather pert.

Now, there is really no reason why statistical reports should be cramped with all that detail. One often asks himself after reading page after page of such material, "What of it? What is the bearing of all this upon the topic under discussion?"

Perhaps the construction of an ordinary graph will serve to illustrate, if we give wings to our imagination, the main differences between the two points of view that I have been comparing. For this purpose I have taken the liberty of enlarging a few charts which appear in that excellent little volume "Vital Statistics," by Whipple.

[Technical explanation of charts on wall of conference room was given]

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What conclusion may be drawn from the difference in the attitude of mind of the case worker and of the statistician for the work that we are all engaged in? If you are going to make any investigation of a statistical nature—again I wish to emphasize that no criticism is intended of the case method where it is applicable—the first thing to do, it seems to me, is to write out—I repeat—write out the questions which your particular study is supposed to answer. Examine these questions. See that they mean something definite and concrete to your friends and associates as well as to yourself. Then, most important of all, decide on the base of the particular study. Find out to whom that study ought to apply, what years it ought to cover, etc. Having decided upon this, get up a provisional schedule and be sure that each and every question appearing on your schedule covers a specific point. Be careful to define every term. Do not use vague and indefinite terms such as "normal child," "normal," "shape," "family," or "household," if you can avoid them. They are treacherous, they are misleading, they do not mean the same things to all persons.

Having carefully defined each and every one of your terms, having planned a preliminary schedule, have it criticized by competent people. See to it that all constructive criticisms are incorporated. Send a few schedules out into the field with instructions to your agent to fill out a few—say, 100 schedules. You will find that your agent will probably make certain suggestions that you will want to incorporate. You will find that you may have to reword your instructions, revise the schedule on the basis of these suggestions, draw up a new set of instructions to agents. Then, and only then, should you proceed with the printing of the schedule and with the field work.

After your data have been gathered and brought to the office, after they have been classified and listed, the first thing to do is to get a few summary tables; not detailed tables which simply recapitulate the actual data—you may just as well use the schedules—but a few tables which actually summarize, which bring out the most important items under consideration. When you have done this, express your results in terms of averages, standard deviations, or coefficients of correlation. Do not use vague terms. If for the particular purpose in view a summary of certain case records is necessary, make such a summary, but do not confuse the statistical part of your study with this case description.

Now, why should the statistician ask these things of the social worker? What has he to give in return? In the first place, the trouble will pay for itself. You will get scientific results. You will be able to answer certain questions which otherwise can not be answered. But, most important of all, you will be enabled to disentangle causes. It may interest you to know that it was to obtain a solution of certain problems in vital statistics and biometrics that modern statistical methods were invented. The problem is the old one of how to measure the effects of heredity and environment. To make it concrete, suppose that we are required to find the relation between infantile mortality and the alcoholism of the parent. Not being able to experiment with children as we do with guinea pigs in the laboratory, we have to go from city to city, from locality to

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locality, and note the infant mortality and the percentage of alcoholic parents in each locality.

Let us assume for the purpose of the argument that the figures show that as the percentage of alcoholism increases from community to community the rate of infant mortality also increases; 99 people out of 100 would conclude that there must be a definite causal connection between infant mortality and alcoholism. As a matter of fact such a conclusion would be entirely unwarranted. Why? Because, if the father is alcoholic, in all probability he does not work all the time. If he does not work all the time the mother may have to go to work. If the mother has to go to work the child is probably neglected. The family may have to buy a cheaper food supply. The milk may not be of the best kind. The family may need to live in poorer quarters where the child does not have the benefit of fresh air and sunshine. How much of the increased mortality is due to alcoholism in the organism of the parent, and how much of it is due to the environmental factors? Such a question could not have been answered in the eighties; the factors are too complicated. But in the nineties the statisticians, mathematicians, and biologists invented a new calculus which forms the basis of modern statistical methods. I may say without any fear of contradiction that within certain limits the statistician can answer this question to-day. All he requires is definite data as to the possible disturbing elements—size of family, father's earnings, milk supply, housing conditions, and all other factors that are related to infant mortality. If you can supply him with the requisite data, he can tell you how much, if any, of the increase in infant mortality is due to the alcoholism of the parent, how much is due to the poor physical surroundings, and how much is due to other factors.

In other words, when the statistician is asking you to see that the foundations—the data—should be beyond reproach, he foresees the vast superstructure which may be constructed on the well-laid foundation. By laying the proper foundation—accurate statistical data—and by taking advantage of the best that statistical theory has to offer, we shall succeed in doing a good deal for one who has not inappropriately been styled "our enemy—the child."

The CHAIRMAN. The next paper was to be given by Doctor Adair. In the envelopes that we have passed around this afternoon you will find Doctor Adair's study on infant mortality, stillbirths, and neonatal mortality. You have the information there, although no doubt he could have made it much more interesting if he could have been here to discuss it with you. We shall pass on then to the next topic, which is "How to make a study of causes of maternal mortality," by Doctor De Normandie. This seems to me to be very important at this time. We have arrived at the point where we feel that something must be done with the maternal mortality, and in order to work it out we must know a little bit more about the causes that lead up to it. Doctor De Normandie will tell us where to begin.

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HOW TO MAKE A STUDY OF MATERNAL MORTALITY

By Robert L. De Normandie, M. D., Instructor in Obstetrics, Harvard Medical School

In making a study of the causes of maternal mortality we follow the International List of Causes of Death and include all deaths of women due more or less directly to childbearing. The group under which these deaths are listed is called "the puerperal state," and "the word puerperal is used in the broadest sense, including all affections dependent upon pregnancy, parturition, and diseases of the breast during lactation."

In this group of the puerperal state there are eight divisions, numbered from 143 to 150, inclusive, in the last edition of the International List of Causes of Death. Let us go over these divisions quickly, for anyone making a study of maternal mortality must have the chief points clearly in mind.

143. Accidents of pregnancy.
    - *a.* Abortion.
    - *b.* Ectopic gestation.
    - *c.* Others under this title.
144. Puerperal hemorrhage.
145. Other accidents of labor.
    - *a.* Cesarean section.
    - *b.* Other surgical operations and instrumental delivery.
    - *c.* Others under this title.
146. Puerperal septicemia.
147. Puerperal phlegmasia alba dolens, embolus, sudden death.
148. Puerperal albuminuria and convulsions.
149. Following childbirth (not otherwise defined).
150. Puerperal diseases of the breast.

There is need of but little comment on this list. Statisticians would have much to say to you in regard to the proper grouping of the deaths. The only points to which I wish to call your attention are these. A criminal abortion resulting in death is not to be classified under the puerperal state. When a pregnant woman receives a serious accident which in itself is enough to cause death, the death is to be classified under the accident and not the puerperal state. When a pregnant woman suffering from a long-standing chronic disease such as tuberculosis or cancer dies such a death does not go in the puerperal state.

When a pregnant patient dies from certain of the acute infectious diseases the death is generally classified under this disease and not in the puerperal group. The only chief exception to this rule is with influenza. In the United States the death of a pregnant woman in the influenza epidemic was classified under the puerperal state, although in England the classification was just the opposite; and this explains why our puerperal mortality in 1918 jumped so. How the deaths are classified by the statisticians when two causes of death are returned may be learned by reference to the Manual of Joint Causes of Death. The reasons for these various classifications I know nothing about, and they are beyond the scope of this paper.

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The deaths classified under the puerperal state by the statisticians in the various divisions of vital statistics are the groups of cases which we must study in any analysis of the causes of maternal mortality. Whether all puerperal deaths are recorded depends of course upon the proper classification by the attending physician. Wherever there has been any accurate study of maternal mortality there has always been found a certain discrepancy when the deaths in the childbearing age (which is regarded as from 14 to 44 years) are checked up with the birth returns in the period under study. For some reason, either through carelessness or through some ulterior motive, physicians may cover up the fact that a birth has occurred. For that reason it is very necessary that whenever a death takes place following or during pregnancy, the word "puerperal" should be added to the death certificate in order that the death may be classified properly. It is obvious that if we are to have a complete study, not only must the death registration be complete, but the certification must be accurate.

In this list of deaths as obtained from the registrar of vital statistics the following must be obtained: The name of the woman, her home address, place of death, the name of the physician in charge, and the certification of the cause of death. If the death certificate was not signed by the physician in charge a note should be made of the name of the person who did sign it and the reason for it if possible. With the list obtained, the intensive study of each case begins. Frankly, I do not know what to say in regard to the importance of studying the social and economic condition of the woman and her family. I am sure, however, that to put any extended study on this part of the inquiry is not so important as the study of the medical care the woman had. I can not believe that the woman's birthplace or her race has any real bearing on the patient's death. How much income the family has is significant, of course; for the poorer the individual, the poorer the type of medical service obtained will be unless the patient happens to be in a community where charity cases are well looked after; and such communities are usually those where large medical schools exist and the cases are used for teaching purposes.

My advice is, that the investigator studying the deaths go at once to the physician who signed the death certificate and seek his cooperation tactfully and intelligently. You must be careful never to antagonize him, never to let it appear that there is criticism, for if you do rub him the wrong way once the information which you will receive thereafter will be of little or no value.

You will find in the majority of cases which you study that the physician has no history of the case and no record of the cause of death, no temperature charts, and little that you can go by except his memory. Here a difficulty arises, for all studies of maternal mortality take place from a year to two years after the deaths occur, and it is obviously difficult for a busy general practitioner to recall the details of a death which took place months ago. He may be willing and anxious to help you, but it is impossible for him to give you much information that is worth while. These are the two chief difficulties in studying maternal mortality—lack of records on the part of the physician, and the long interval between the death

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and the beginning of the investigation. Until we can impress upon all physicians that records should be kept and until we can investigate maternal deaths more quickly than we have in the past, our results of course will be unsatisfactory.

If the death occurred in a hospital there may or may not be satisfactory records to look over. The American College of Surgeons is doing a splendid piece of work in insisting upon satisfactory records if a hospital is to be classified in the class A group. The majority of patients, however, are not delivered in hospitals; and therefore we can not expect to find complete records on all maternity cases there.

There are certain items of each patient's history which we ought to know, if they can be obtained. We must know the number of her pregnancies, the character of her pregnancies, the outcome of each, whether the previous children were born alive or were stillborn, and the type of her previous deliveries. These all may have some bearing on the pregnancy which caused her death. Her medical history is very significant, especially in regard to the condition of her heart and kidneys. But it is in the last pregnancy that we are especially interested. A careful investigation must be made into the prenatal care received. It is not sufficient to ask the physician if she had such care, for many physicians will say "yes," but when you question further you will find that the care given consisted possibly of one or two visits before the delivery, and one or two examinations of the urine. That, of course, is not prenatal care; and although the physician says care was given, this must be classified as no prenatal care or at least as unsatisfactory care. We have already seen what prenatal care should be; and unless the physicians approach such a standard we can not classify their patients as having had such care. It is also well to find out whether the woman had any supervision by a visiting nurse, and, if she did, of what this consisted.

When we come to the delivery we must know whether it was normal or operative. If it was a normal delivery the number of vaginal examinations made should be found out if possible. It is obvious that no man will remember how many vaginal examinations he made on any individual case unless he keeps a careful record of each case; and that, as I have said, he seldom does. You can find out, however, what is his custom. Does this man make many vaginal examinations, or does he have recourse to rectal examinations entirely during labor? Also one must find out whether or not he uses rubber gloves and what his technique is. If it was an operative delivery the length of labor must be ascertained, the type of labor the patient had, and the operation that was performed. Find out whether pituitrin was used. A careful questioning regarding the third stage of labor will many times give you a clue to the cause of death.

These are all general points which must be found out and recorded. There are other more detailed points to be ascertained depending entirely upon the cause of death as given in the certificate or points to which the inquiry up to this stage leads. To this point the inquiry is applicable to any of the eight groups of the puerperal state, but from this stage the questions must be more specific

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if we are to find out accurately where the responsibility, if any, for the death lies.

Let me explain what I mean by this. If the cause of death of the case which one is studying is classified under 143, accidents of pregnancy, only thorough questioning can determine whether the abortion was spontaneous, self-induced, or criminal. Many times the fact that a criminal abortion has been done can not be established, no matter how searching the inquiry is. The real cause of death must be carefully sought since the great majority of these cases die from either hemorrhage or sepsis. It further must be determined whether a curettage was done following this abortion, and if possible it should be determined whether or not the patient had a temperature when the operation was performed, for it is well known that a curettage following an abortion in a patient who is running a temperature is a very serious procedure and may carry a very high mortality.

If the death is from ectopic gestation the onset and duration of the condition must be carefully studied, and whether the patient was operated upon must be ascertained, and whether it was an emergency or an elective operation.

In the third division under this section pernicious vomiting of pregnancy is the most important cause of death. Here it must be determined whether the death occurred because the patient refused operation on religious grounds, or whether the physician allowed the patient to become so seriously ill that when an operation was performed her death followed. The condition in which the patient was when the physician was first called should be made clear, for many of these serious vomiting cases are not seen until the patient's life is in jeopardy.

The so-called "therapeutic abortion" is not recognized in the classification of deaths, but in all studies on maternal mortality it must be noted whether one was done, what the reason was for doing it, and whether a consultation was held. The chief reason for doing a therapeutic abortion is a serious chronic disease which would jeopardize the patient's life if the pregnancy were allowed to go on.

Now in regard to the bleeding cases (group 144). Here it is important to find out how early in the pregnancy the patient showed any signs of bleeding; whether this bleeding recurred, at what intervals, and the amount of blood lost; what was done for her, or whether anything was done. Too many physicians regard slight bleeding in pregnancy as not abnormal, and make no effort to discover the cause of it. It must be thoroughly impressed upon both the laity and the profession that any bleeding by vagina in pregnancy is abnormal and must be investigated.

If the cause of death was postpartum bleeding we must carefully investigate the type of the patient's labor, whether she had an operative delivery, or whether any other abnormalities were present. Here again the management of the third stage must be carefully ascertained, for many times the bad management of the third stage causes a postpartum hemorrhage. Other questions that it is well to ask in regard to postpartum hemorrhage are how soon after delivery the physician left the patient and whether she was in satisfactory condition with a dropping pulse rate when he went. A

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secondary postpartum hemorrhage arises only when products of conception are left behind, and that can be obviated by careful inspection of the placenta at the time of delivery—a simple preventive of trouble which relatively few men carry out conscientiously. Careful questioning shows the type of puerperal hemorrhage of which the patient died, and we can determine accurately in which subdivision each death should be placed.

Section 145. Other accidents of labor. This you will remember includes Cesarean section, instrumental delivery, breech delivery—practically all operative procedures and difficult labors. If a Cesarean section was performed on the case in question, certain points must be carefully studied. First, what was the indication for doing a section? Second, was the Cesarean section one of election or of emergency? Third, did any vaginal examinations immediately precede the operation? Fourth, were the membranes ruptured before operation was performed? Fifth, was the patient in labor; and, if she was in labor, how long had she been in labor; and what was its type? It is a well-known fact that a Cesarean done by competent operators before labor begins or at the onset of labor carries with it a mortality up to about 2 per cent. But the moment that Cesareans are done following operative manipulations from below, vaginal examinations, or long labor with ruptured membranes, the percentage immediately rises to 10 to 15. There is no question that when Cesarean sections are done under these latter conditions it means that the patient has not had adequate prenatal care. At the present day no woman should go into labor unless a method of delivery has been carefully determined upon beforehand. By that I mean that if there is a probable disproportion present she should be sent where competent help can be obtained at once. This is why the previous history of multigravidae is so important. If a patient had a difficult labor in her first pregnancy, the physician should have found this out early in the present pregnancy. Many patients move out of rural communities to cities after they have had one disastrous obstetric experience.

If possible the temperature chart should be seen in regard to any death from Cesarean section, for by it one can very quickly deduce the probable real cause of death. Cesarean section of itself seldom causes death, the great majority of deaths resulting from sepsis; and if by inspection of the chart it is seen that the patient ran a septic temperature it is fair to say that the patient died of sepsis and not as three death certificates were signed (in Massachusetts) a short while ago when Cesarean sections had been performed—of ileus, paralytic ileus, and vasomotor paralysis.

In my opinion few deaths should be classified as due per se to instrumental delivery and other surgical operations. The deaths nearly always follow because of either sepsis or severe trauma to the patient's soft parts, not infrequently rupture of the uterus or bladder, with sepsis following. It is for this type of case that sepsis is not given as the cause, the death being attributed to a hard operative delivery. To determine under this heading the real cause of death is difficult because it necessitates determining the ability of the physician to do operative work. I do think, however, that it is perfectly fair, in regard to these deaths due to operative delivery, to question carefully the preparation of the patient and the technique. By that I mean,

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Did the physician have adequate help at the time of delivery, or did he first etherize the patient himself and then quickly do the delivery—an obvious possible mode of infection? What was the preparation of the patient? Was she shaved, and what methods of sterilization did he carry out? Did he have any sterile goods to cover the operative field? That perhaps would be a superfluous question in the majority of cases, because we know that such details are neglected very many times. But unless we question carefully the physicians who constantly have these deaths, unless they realize that they are going to be checked up, shall we not continue to have this unnecessary loss of life?

On the other hand, plenty of men trying to do honest, conscientious work get into serious difficulties now and again. How can it be otherwise, with the training that they get in operative obstetrics in the medical schools at the present time? Again, many physicians call for help too late in obstetrical work, for they think that the majority of cases will come through fairly well in spite of bungling operating and that a death will come to them but rarely. Because of this fact they hope to get by in every case. A death in this group usually means that there has been a lack of intelligent medical supervision of the patient and that an error was made in the method of operating—either the wrong operation was performed or it was badly done. Here again careful inquiry will show the real cause of death and indicate where the responsibility lies.

Now let us take up section 146, puerperal septicemia. When a death is recorded as occurring from septicemia there is no question that this is the true cause of death, for no man will sign a certificate "puerperal septicemia" if there is any possible opportunity for him to assign the death to any other cause. The deaths in this group account for 40 per cent of all the puerperal deaths in the country. Oliver Wendell Holmes said years ago, in speaking of the contagiousness of puerperal fever, "Whatever indulgence may be granted to those who have heretofore been the ignorant causes of so much misery, the time has come when the existence of a private pestilence in the sphere of a single physician should be looked upon not as a misfortune but a crime; and in the knowledge of such occurrence the duties of the practitioner to his profession should give way to his paramount obligations to society." There are, I am glad to say, no such terrible epidemics of puerperal fever now as there were years ago, but the fact remains that hundreds of women die each year from sepsis. Therefore when a patient is found to have died from sepsis it devolves upon the physician in charge of the case to prove conclusively that he delivered the patient according to good surgical technique.

It is along these lines that your inquiry must be laid. First we must know whether a case had proper prenatal care, for it is only by good prenatal care that we can eliminate the difficult emergency operating that carries with it a high death rate, usually from sepsis. Second, we must question the preparation of the patient. The investigator must know what proper preparation is and whether this preparation was carried out; whether the patient was shaved, whether it was a soap and water scrub or whether iodine or one of the newer preparations was used. It is also necessary to

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determine carefully the type of labor that the patient had, the number of vaginal examinations that were made, and the technique that was used. The burden of proving that he carried out a proper technique rests upon the physician, for we know that in all except a few cases sepsis is caused by poor technique and ought to occur very, very rarely in any physician's practice.

Any physician practicing obstetrics who has a death from sepsis every once in a while is a danger to the community, and I feel that we have a full right to question minutely his technique and his methods of procedure. He is not a safe man to have about, and it is by a study of maternal mortality that these men are discovered. If they have any conscience they soon see that they are being questioned and will attempt to mend their ways. It is true that any one of us may at any time have a case of sepsis. Occasionally we may lose a patient from sepsis, but only very rarely. The kind of man to whom I refer is the physician who is having more or less sepsis all the time, who is losing one or two or more patients a year from sepsis. In questioning this type of man you will meet with opposition, and you must question as tactfully as possible. Many men go through their medical careers without ever losing a patient from sepsis. Yet the medical profession at large is blamed for this bad situation which relatively few physicians are causing. These deaths are due to carelessness. The surroundings of the individual case, if proper technique is used, have little or nothing to do with the death. Of that I am confident, for each year throughout the country many thousands of cases are delivered where the surroundings are anything but sanitary, and yet deaths seldom follow.

The care the patient received after delivery is important. When did the physician see this case after delivery, how early did untoward symptoms appear, and what treatment was given, and was any intra-uterine manipulation of any sort done?

I would not give you the impression that for every death from sepsis the physician is to be blamed, for that is not so; but I do say that in the large majority of cases of sepsis the fault is with the physician. It is in regard to these cases that we must study the cause carefully, investigating the attendant most thoroughly, whether a physician or a midwife was present. I know of no way to improve this situation unless there is an investigation of these maternal deaths. A step in improving this condition unquestionably is making sepsis reportable. It is now reportable in only 16 States of the country, and in these States the law is not enforced.

In section 147 are those deaths which are classified as sudden deaths or from embolus. It would seem that these deaths could be studied quickly and readily; but upon a little thought it will appear clear that under this classification are put many deaths which should go elsewhere. The investigator of these cases must be very tactful and circumspect. There would seem to be little doubt, if a patient had developed a phlebitis and in the course of this phlebitis suddenly showed respiratory distress and died, that the death was caused by an embolus; or, if in the course of a normal puerperium the patient suddenly became cyanotic and died, that this death also was caused by an embolus. Such deaths as these

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are among the tragedies in obstetrical work. On the other hand, some patients die in the course of a hard operative delivery, oftentimes before it is accomplished; and the death is put down to an embolus. That may be the true cause of death, but my own opinion is that many more such cases die from a rupture of the uterus or some other severe traumatism than from an embolus. Yet the death certificate is signed "embolus," and it is accepted without question by the registrars. It is obvious that since this cause of death is accepted without question it not infrequently covers up bungling operating, and only by careful inquiry will one be able to determine the real cause of death. Even then one would not be sure of the accurate cause unless an autopsy had been obtained, and autopsies are asked for and obtained relatively seldom in obstetrical work.

Section 148 includes the cases dying from puerperal albuminuria and convulsions—that is, the toxemias of pregnancy and eclampsia—and there are certain leading questions which will clear up the responsibility for a death under this condition. First, was the patient under any medical supervision before the convulsions appeared? If the patient was not under supervision the medical profession evidently could not be blamed for such a maternal death. Unfortunately very many such cases occur, and until we can educate the women of the country to the point of realizing that medical supervision is necessary for their well-being, we shall continue to have these deaths. If the patient has been under supervision you must find out how long she has been under care; and what specific care she had; what her condition was when first seen; how often the blood pressure was taken; and how often urinary examinations were made; and at what time before her death she first showed troublesome symptoms. It is well known that a woman under proper supervision, although she may develop a toxemia of pregnancy, will seldom develop an eclampsia and die. This is shown by the fact that in two large hospitals in Massachusetts the total number of cases of eclampsia in 20,759 deliveries was 91, and of this number only 20 had received clinic care. There were only 3 deaths among these 20, whereas the number of deaths among those 71 patients who had received no clinic care was 27.

We must determine how cooperative the patient was in carrying out the physician's orders. On the other hand, it is just exactly as important to find out whether the physician in charge gave adequate supervision after the patient put herself under his care. We must further find out whether the patient was put to bed as soon as troublesome symptoms appeared, whether she had hospital treatment early, or whether she was rushed to a hospital when she was in extremis. Careful questioning readily discovers where the responsibility for the death lies. It is much easier to place the responsibility in this group than it is in almost any of the others. If we find that the responsibility lay with the patient we must be frank and say so. Many times, however, we will find that it is the physician's fault and that he has given no adequate supervision. It must be remembered that in the rural communities where physicians are far removed from their patients a close supervision of the pregnant patient is very difficult. It can, however, be carried out much better than it is at the present time if we constantly reiterate to the physi-

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cians and to the laity what the causes of maternal mortality are and how they can be prevented.

The last two sections, 149 and 150, need very little explanation or questioning. They include but few cases, and it is easily discovered why these cases are so classified.

You will find in the course of your inquiries that many of the deaths occurred in hospitals. If a patient dies in a hospital you must ascertain whether the patient was rushed to the hospital at the last moment because of trouble which she had developed outside or whether the patient had planned to go to the hospital anyway. You must find out the standing of the hospital in which the patient died, you must know whether it is a well-run institution with a separate maternity service, whether it has a delivery room, whether it has a training school for nurses. All points which would have any bearing on the patient's welfare must be carefully investigated. If the patient died in a hospital from some form of sepsis you must find out if other septic cases were there at the same time. The preparation of the patient must be inquired into, and whether there is proper supervision of the nurses doing the nursing work. Technique in hospital work must be excellent or sepsis will creep in, and sooner or later it will become virulent with dire results.

Some of the States require all maternity hospitals to be licensed by the State, but the supervision maintained is not always what it should be, and the results of the treatment in them are not carefully investigated.

I have gone over many points that should be developed in any study of the causes of maternal mortality. To what do they lead? What can we do with the results after we have obtained them by weeks of painstaking investigation? I assume that the object of analyzing the causes of maternal deaths is to determine wherein lies the responsibility for them. In other words, are any of these deaths preventable? I have gone over with you briefly the various points I think important to have recorded. To be of value these points must be gathered in a schedule or outline so that they may be tabulated and analyzed. These tables should show the number of deaths in each of the eight groups of the puerperal state. If we have been successful in our investigations an analysis of these tables will show many points which will help to answer our question, "Are any of these deaths preventable?" It will show us who looked after the patients—whether the attendant was a physician, a midwife, or merely a man midwife. It will show us what sort of medical supervision the patient had during her pregnancy—whether it was intelligent medical supervision, or whether she had the supervision of a visiting nurse with a doctor in nominal attendance, or whether she had no supervision at all.

The deaths following operative deliveries can be studied intensively, and it can readily be discovered where the responsibility lies. Analysis of the bleeding cases will show which were the placenta prævias, which were the separated placentas, and which women died from postpartum hemorrhage. It will show the treatment given to each patient, and whether the attendant lived up to the best or even to good obstetrical teaching, or whether he neglected his patient. In the same intensive way the deaths under the other headings are all

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studied and analyzed. There is no need of going over each one, but I do want to say a few words about the deaths from sepsis and from puerperal albuminuria and convulsions. These two causes include about 65 per cent of the deaths of women who die in childbirth. We know the number of these deaths would be much reduced if the women had had adequate medical care.

The responsibility for sepsis lies with the attendant at the delivery in by far the greater number of cases. The technique at delivery is faulty. How can we improve this situation, which is a reproach to America? The only way I can see is to have the maternal deaths investigated each month, and when sepsis is found to be the cause to summon the attendant before some board for explanation. Something radical like this must be done, for in 1921 in the death-registration area 6,057 women (40.3 per cent) died from sepsis. We have failed to profit by what Doctor Holmes said long ago.

In regard to the eclamptic cases I feel less strongly, because many times there are extenuating circumstances and we must not be too harsh, especially as the cause of this condition is not known and the treatment varies greatly in different parts of the country. But for those physicians who still persist in refusing to give intelligent prenatal care to their patients I have no sympathy. I believe these men must be supervised more closely. We must appreciate the fact that the standard for obstetrical work in any given community must be a reasonable one. What is right and reasonable here in the East can not be demanded in a homesteading community in the West or among the colored people of the South. We know that the only way to prevent this terrible maternal mortality that is present among us is to have skilled medical care for every woman during her pregnancy and puerperium. That does not exist to-day. It will not come for years. The sooner the laity is acquainted with these facts the sooner will it demand better obstetrical care. Any community obtains about the type of medical work for which it asks. If a community is satisfied with midwives, no good physician will go into that community. Therefore, as I see this situation, to improve it is to educate the laity to demand better service. Then the deaths that are chiefly preventable will be wiped from our mortality lists. Remember, it is not the physicians in the remote towns of our country whom I criticize. They do the best they can without hospitals and without nurses to aid them. These are not the men that need supervision. They do need help. The only way they can keep out of serious difficulties at times is to send their patients to a city. Yet that is not always possible, and then they do as well as they can—possibly better than many of us would do who are accustomed to have everything ready for us in well-regulated hospitals.

Intelligent prenatal care and clean hands will do much to lower the rate of deaths due to preventable causes. There is no doubt that a slight general decrease in the death rate in the puerperal state has taken place, but it has not decreased as it should have. I am confident that constant study and analysis of the deaths with well-guided publicity for the results will cause great improvement to take place.

The mere enumeration of the number of deaths is of no avail. Careful analysis must be made of each death in the manner I have suggested. Facts are what we must have, incontrovertible facts, and

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these can be obtained by such an analysis as I have outlined. With the facts before us we can go into a community and say "here are your results for the past year." We can then point out which are the deaths that should have been prevented, others which with our present medical knowledge could not have been prevented, and a third group which might have been prevented had skilled care been available more quickly. Let the medical societies take action, call the attention of their members to the results, and insist that better work be done. Is not such action within the province of the various societies? Let the medical profession make the criticisms quietly and within its own meetings, but let us begin to do something constructively, and not let thousands of women die each year without a more serious effort to improve a condition which many of us feel is a blot on the name of our country and on humanity.

DISCUSSION

The Chairman. We have now some time for discussion of the two subjects that have been presented this afternoon.

Miss Abbott. We had several inquiries during the past year with reference to possible studies along the general lines that Doctor De Normandie has outlined. I wish to ask whether he thinks that if a State director wishes to make a study in two or three places—or in one place—a continuous study of births and deaths as they occur should be made or whether they should try to do them for a year or two years previous. We could have a much larger number if we included past deaths. Next I should like to know whether the personnel to undertake it ought to be a physician or physicians. If it is done currently it is not possible to use a full-time worker on it in the usual community.

Doctor De Normandie. I think we ought to have a continuous study. I think this occasional study in Massachusetts, another one over in Washington, and another one down South is not advisable. It ought to be a continuous study if we are going to accomplish anything.

Miss Abbott. The health officer can make a continuous study, but if we wish to get something to report on, what period of time ought it include?

Doctor De Normandie. I think it ought to be several years, not just one year. I am sure physicians should do it. You have no right to send a social worker to quiz a physician on a death. A physician will likewise resent having a nurse come in. But he has no right to object to having the case studied by another physician. I am perfectly sure that we can study these deaths if we have physicians do it; but they must know what they are talking about. They need to ask searching, technical questions. If the work is undertaken I should like to see it done on the standardized questionnaire, not in a haphazard way in one State and then another. I am certain that it must be done continuously, and we must let the men know that they are being checked up. If the men who are getting the bad results realize that they are being checked up, they are going to mend their ways.

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Doctor NOBLE. May I inquire whether it should ever be done under the State offices, or whether it should be done under the medical profession as an organization?

Doctor DE NORMANDIE. I think the State has a perfect right to do this.

Doctor NOBLE. Will the State stand for it? Pennsylvania would not.

Doctor DE NORMANDIE. You mean the medical men would not stand for it?

Doctor NOBLE. Yes. They would not stand for it as coming from the State. At least, that was the only explanation. We had the machinery ready.

Doctor DE NORMANDIE. I dare say they won't stand for it at present, but you must keep at them till they do. I think the medical society wishes this to originate from within the medical profession; otherwise the medical profession is going to be driven to do something that they do not care to do. Do not misunderstand that. We shall be made to clean house. As I have stated, I do not think the rank and file of the medical men are doing this bad work; but you do not know who is doing the bad work, nor do I.

Doctor NOBLE. Well, we knew. We got the list. The point was that we got the list all ready with the names and addresses of the women and of the physicians who attended them, and we had the letter written; but we could not go on.

Doctor DE NORMANDIE. I think a mere letter will not do it.

Doctor NOBLE. No, but that was another thing I wished to ask—whether you thought any of it could be done by correspondence.

Doctor DE NORMANDIE. We did some investigation of maternal mortality in Massachusetts by questionnaire. That method is very unsatisfactory, and I think if we had had a physician go around the State to investigate and to meet these various men we should have gotten very much further.

Doctor NOBLE. Did not Massachusetts do just that?

Doctor DE NORMANDIE. Well, we did for a while, but we have not done it as a continuous study. Only last week I made this same suggestion in a city in Massachusetts—namely, that the medical society have a standing committee to investigate these deaths month by month—but the suggestion fell on barren ground.

Doctor CRUMBINE. When I was a State health officer in Kansas we had a little experience in an effort to study maternal mortality, and we were entirely unsuccessful. I think we made every reasonable effort in the collection of data and preliminary steps and sending physicians, and still it was a failure. We selected Shawnee County including the rural districts as well as the capital city of Topeka. We advised the county medical society—we did not ask their permission, as we did not wish to bring it up for discussion—but in a friendly way we advised the county medical society that we proposed to make that study and asked their cooperation. There was no dissent from that announcement, yet we found when our medical man went to investigate these cases at the home or the physician's office (he went first to the office of the physician in charge of the case) we were utterly unable for a majority of the cases to obtain data really bearing on the subject. We were put off with one excuse

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or another. It was impossible to obtain reliable information, and the whole experiment failed. I think Doctor De Normandie has told us the only way, and that is a long way off, I fear; namely, by the medical men themselves. I am sure that we made no error in our approach to that subject. We tried it very thoroughly and sincerely, yet it was an absolute failure.

Doctor De Normandie. I think we ought to go to our various State societies and say, "There are 25 men in this community that will not give information," and then see whether the best men in the community will not say, "Who are those 25 men?" In every community there are men who desire to have good work done and who will support an investigation. I know if we tried in Massachusetts some men would fight it and might give us false information, but we would very soon find out who those men were; and I believe that the medical profession can do it.

Miss Abbott. Doctor De Normandie, I am not quite clear as to your position. Just what should the State do and not do?

Doctor De Normandie. I think the States can do these things; Doctor Crumbine thinks they can not. I should like to ask Doctor Lakeman, who is here from Massachusetts, whether she thinks that we can do that in Massachusetts. I do not know how different Massachusetts is from the rest of the country.

Doctor Lakeman. We met a great many obstacles in Massachusetts and had a great many difficulties and a few stumbling blocks. Only a very few physicians objected to being interrogated, and in each case where it was followed up it was found that at least something might be said for the physician. Two of our three investigators never had any trouble whatever.

Doctor De Normandie. I can see why one might develop a good bit of trouble by asking too pointed questions. An investigator might be a good investigator, but she might have made the physician angry, and that is no way to find out things.

Miss Marriner. About seven years ago I made a few of those investigations in Alabama for the Children's Bureau, and also in Peoria, Ill. In an entire year I met only one physician who objected in the least to the questions I asked him, and before I left the office he told me the whole story and took the blame of the woman's death on his own shoulders. I have not done such investigating since I have been connected with the State board of health, but I believe that it could be done whenever we wished to make an investigation of maternal deaths in Alabama. I believe we could do it and that the physicians would support us in it. At the present time our State medical society has a committee on maternal welfare, and its chairman is working in the closest cooperation with the State bureau of child hygiene and public-health nursing. Whatever field work he wants done we do through our State board, turning the results over to him; and we are assembling the statistics and data for a report at our next medical association meeting in the Spring.

Doctor McCornack. We have reduced the mortality in the hospitals of the State of Washington, but I believe it is not possible for private practice. We have no hold on the physician at all. We have not his records nor anything of that sort. We have followed out very closely the requirements made by the hospital standardization

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committee, so that every death in every one of our hospitals is thoroughly investigated. The physician has to give an explanation of the deaths. At first this criticism was resented very much, but where the records show what a physician has done then he has to face the record—for instance, giving pituitrin at the wrong time and other things of that sort. In our hospital meetings, which are quite friendly, the men have had to explain these things. They have been told by the obstetricians that pituitrin was given at the wrong time, or that this case should not have been curetted at that time, or something of that sort; and this has greatly decreased our hospital mortality. A physician thinks twice now before he gives pituitrin, and he thinks two or three times before performing an operation. But I think you can not do very much outside where you have no hold whatever on the physician. I known there are some places in our State where I would want a good heavy bodyguard along with me if I went to ask a physician why his patient died.

Miss ABBOTT. Most of these committees appointed by the medical societies to make an investigation will not have any money to make the investigation with, nor any organization for doing it. I wonder whether it would not be possible for some kind of combination to be made between the medical society and the State agency whereby the investigation could become a joint piece of work with the professional organizations directing or helping to direct the investigation in a way which would make for medical support of both method and findings.

Doctor DE NORMANDIE. I think that is an excellent suggestion, Miss Abbott. Of course we have not the money, and they do not like to put the money out in such a thing.

Miss ABBOTT. I know. They have relatively a very small amount of money for all the things they want to do.

Doctor DE NORMANDIE. If the Federal Government should undertake this, and a first-rate physician—not of the community—who knew the obstetrical questions to ask and the routine to be gone through should do the investigating, that seems to me far better than having a local person do it. A local physician objects to having others know too much about the ins and outs of things that go wrong with his practice, whereas if you have outsiders go in they do not remember so long.

What Doctor McCornack said about this hospital in Washington is exactly what happened in Massachusetts. Those of us who are connected with class A hospitals are very careful of what we do; and if the men who come in there are not careful and conscientious and if they make one mistake, they are hauled up before the staff meeting and are held to strict accountability. For example, one man did a Cesarean the other day with no indications whatsoever, and the woman died; I saw that man walking around before the staff meeting, and I never saw him so uncomfortable in my life. That man will never perform another Cesarean without some indication. That hospital is the one where those three cases I have referred to—ileus, paralytic ileus, and vasomotor paralysis—occurred. Because of those three cases there is now on the wall of the surgeon's room of that hospital a notice "No Cesarean shall be done without consultation with another member of the staff." In other words, they are talking over their cases.

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The CHAIRMAN. What do you think about making puerperal sepsis reportable in the States?

Doctor DE NORMANDIE. I really do not know what to say about that. I know that things are unsatisfactory now. I think it is a step, and if it is enforced it might help. Of course we do not know exactly what to report as sepsis. That is the great question. For instance, I have a patient now running a septic temperature, but I am confident that she has not uterine sepsis. Whether that should be reported is a big question. I should like to know how it works out in the States that have had it reported. From what I have read it works out pretty satisfactorily in England. New York has it, I think, but I do not know what New York thinks of it.

Doctor GARDINER. I suppose some cases are not reported, but we are getting better and better reporting of both cases and deaths in New York.

Doctor DE NORMANDIE. What do you do after they are reported?

Doctor GARDINER. We send an investigator. The local district State health officer investigates those cases. I do not know just what effect that has in reducing the number.

In any of the larger States which have good vital-statistics departments the studies could be carried on perfectly well. But after you get all this information accumulated and tabulated just how are you going to proceed next? Those facts are matters that we want brought home to the private physicians and in their own communities. Shall we separate it into counties so that they can be handled in county societies? Or shall we proceed as has been suggested and perhaps subsidize a State society to conduct some of these investigations? I think we might do that in New York State, but doubtless more than one State ought to be doing it at the same time and in the same manner, as part of the same schedule.

Doctor DE NORMANDIE. They should be on the same schedule so that the statistics may be comparable.

The CHAIRMAN. Is anyone here from any other State that reports puerperal sepsis?

Miss LOCKWOOD. I can not tell you anything about what we do in Delaware after they are reported, because I think that up to the present time nothing has been done; but I think it very likely that the machinery of the State board of health will move in that direction before very long. We are now getting State board of health service on a new basis, and there are many things to be taken up. That is one of the things that has not yet received attention. However, if there is any case of that kind in a district the nurses in that district immediately make an investigation. Of course that does not go very far; there is a great deal more to be done; but to have somebody looking into it does help considerably.

Doctor GARDINER. In New York we publish a little card of pocket size and send it to every physician in the State, giving the causes of death that are really puerperal according to the national classification. There is a very long list, and we found a great many cases. The deaths were not being reported, evidently because the physicians did not understand them to be puerperal deaths. Since we sent the cards out we have had very much better reporting, and that is a simple thing for almost any division or department to do.

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The CHAIRMAN. Another question that comes to my mind is whether we should make a study of neonatal mortality at the same time as the study of maternal deaths and with the same personnel.

Doctor DE NORMANDIE. I think they are two entirely different studies. Neonatal deaths, which I should think would include those at two weeks, is a very much bigger study than the maternal death rate; that is, a much larger, much more important, much more difficult study must be made. There are a greater number of deaths, and the cause of death is less known. There comes in a new question. Mr. Schultz, inanition is an accepted form of death in a newborn infant, is it not?

Mr. SCHULTZ. I think so.

Doctor DE NORMANDIE. Now that is an accepted cause of death, and you can not go farther than that. You can not find out anything more. I should not like to see the two studies done together, because I fear we should not get anywhere.

May I ask Mr. Schultz to answer some of my questions or criticize one or two of those statements that I made. Should criminal abortion be regarded as a puerperal death?

Mr. SCHULTZ. I am not sure of it. I remember having had a communication from the Public Health Service as to changes in the classification, and I can not say just exactly how these changes will be carried out; but I do know that an attempt is being made to work out a standard definition in connection with the health office of the League of Nations.

Doctor DE NORMANDIE. I know that, but I was wondering whether you know anything about the question of criminal abortion and about an accidental death if the woman was pregnant.

Mr. SCHULTZ. I think you are right about the second, but I do not remember the first one.

Doctor DE NORMANDIE. I hoped if it was not so you would say so frankly, because we had several of those deaths in Massachusetts. We have about 600 deaths a year, but a very few (I think something like 30 cases) were nonobstetrical deaths, and of course it helps if 30 of those 600 can be eliminated. For instance, we had one case of a woman who died who had a miscarriage at five months just before she died. She had a carcinoma of the larynx, yet the case was classified as puerperal death. That is wrong, is it not?

Mr. SCHULTZ. I think that is wrong, but there is no way of telling just what kind of classifications are followed by the various States. I know there is confusion worse confounded.

Doctor DE NORMANDIE. That is what we found in Massachusetts. What is a maternal death? That is what they got mixed up on.

Doctor STADTMULLER. In California we tried to investigate about 500 deaths that we had one year. On some of the deaths we did not attempt to go out and visit the physicians, and that point came up. I wrote to the Census Bureau and was told those deaths were to be included in the maternity mortality. I thought that we might eliminate some of those early deaths from the number; but I consulted three different people and wrote the Census Bureau, and they wrote back that they should be included. Of course they are not criminal, in the sense that we could not prove that they were.

Doctor DE NORMANDIE. I understand that they make a distinction between self-induced and criminal abortion.

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Doctor Stadtmuller. That may be the point, then; but they wrote me a rather general answer that abortions were included, and consequently I assumed this to mean either self-induced or criminal.

Doctor Boyton. I should like to ask if anyone can give a good reason why our maternal death rate is figured on 1,000 live births instead of 1,000 total births including stillbirths?

Mr. Schultz. That question has been discussed time and time again, but I may say very briefly that expediency had a good deal to do with it. It is practically impossible to ascertain the exact number of stillbirths. What is a stillbirth or what is not a birth at all entered into this question, so that, taking into consideration what we can obtain and what we can not obtain, this seemed to be the best basis to use.

Doctor Knox. I should like to say a word in reference to this very unsatisfactory classification of early or neonatal deaths. I do believe they are different, and they ought to be considered somewhat separately from the maternal deaths. But certainly in the future we are going to consider the condition of the mother in determining the cause of death of the child in the first two weeks, and I believe that the Census Bureau's method of classification will have to be altered to some extent to take into consideration the condition of the mother. Whether that mother has had a serious hemorrhage, even though she lives or dies, may determine the neonatal death of the child from inanition, if you please, or from congenital debility; and so we can not intelligently increase our knowledge regarding the cause of neonatal mortality until we link it with the condition of the mother very much more closely than we are now linking it in our vital statistics.

The Chairman. It is too bad that we did not have Doctor Adair's paper along with this discussion, because so much comes out in that in regard to the study of neonatal mortality and its relation to the type of care the mother has had, the type of delivery, the trauma and the like. Has anyone else anything to ask or to suggest in regard to making this study?

Doctor Underwood. Of course we know that the State has a right to insist that mothers have the best prenatal care and a right to make this study; and if it is to be made I believe there is a proper place to begin. I am sure that it is some one's duty to arrange this, but I do not think that a committee from a medical society, State medical association, or local medical society can accomplish it satisfactorily. We have had such committees appointed in Mississippi by local medical societies (I know of none being appointed by the State association), but these committees do not function. They have no funds, and the members have not the time to devote to this work.

I am sure that the Children's Bureau, in cooperation with State boards of health—say, through the division of maternity and infant hygiene—should inaugurate such a study, engage some person or persons to do this special work, and let them go before the medical societies of the State, the local component societies of the State association. Explanations should be given as to just what the work is and what information is wanted, and the cooperation of each

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society should be requested. I am certain that cooperation will be granted cheerfully in most instances, and if at first we can not succeed we would succeed later, if we kept hammering away at it. The State board of health could do this work through its bureau of maternal and infant hygiene with the full cooperation of committees appointed from local medical societies. I am sure we could make a success of this study, and it is high time we began.

In Mississippi for several years we have had puerperal sepsis reported, but nothing has been done about it. The physicians in each county report to the county health officer each month the number of cases of puerperal sepsis. The county health officer makes a report to the State health officer once a month. We have the information, but we have done nothing about it.

The Chairman. Doctor De Normandie, have you any idea of the cost of such a study?

Doctor De Normandie. No, I have not the slightest idea. It all depends upon your personnel, I should think. You must have first-rate personnel or you are not going to accomplish much. May I ask Doctor Underwood whether there were more deaths from sepsis in Mississippi than were reported?

Doctor Underwood. I am very much afraid so.

The Chairman. Is that true in New York?

Doctor Gardiner. I think that is the feeling.

Doctor De Normandie. So it is not very satisfactory?

Doctor Gardiner. We are doing it now by questionnaire, and we do get a great deal of information; but we also get a little side-stepping.

Doctor Lakeman. It might possibly help to answer the question concerning the expense of the study to know that our 984 cases were studied in about 1½ years by three people working very nearly full time. They did a few other things.

The Chairman. And they were all physicians?

Doctor Lakeman. All physicians.

The Chairman. Did you have the cooperation of the State medical society and the local medical societies?

Doctor Lakeman. We had the cooperation in the way that was mentioned, and I think Doctor Crumbine said that it was announced that we were going to make the study. The announcement was received in a perfectly friendly fashion. [Laughter.]

The Chairman. Then the way to begin these studies is to begin, is it not? Well, I hope we can all begin.

Doctor McCornack. I think if you announce that you are going to do this and then ask for cooperation you will be more likely to receive it than if you become involved in a discussion as to whether it should be done or not.

[Meeting adjourned.]

TUESDAY, JANUARY 12—MORNING SESSION

MISS MARIE T. PHELAN, EXPERT IN MATERNAL AND INFANT CARE, MATERNITY AND INFANT-HYGIENE DIVISION, CHILDREN'S BUREAU, PRESIDING

The Chairman. Some of the directors have asked that we have a roll call this morning, because we do not seem to know one another

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very well. So we will begin the meeting by asking the various directors to stand up when their States are named.

[The chairman called the roll of States and directors]

The subject for this morning's conference is maternity care and the infant and the child of preschool age. Doctor Levy, of New Jersey, will be the first speaker. He will discuss the midwife problem and the method of handling it in New Jersey.

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MIDWIFE CLASSES

By Julius Levy, M. D., Consultant, Bureau of Child Hygiene, Department of Health, New Jersey

Recognizing that there are large differences among the various States I have thought it best to indicate in a very broad way the nature of New Jersey's program in organization and something of its results, hoping that you will bring out in your own questioning whatever special information you may desire, or in whatever way we can be of service to other States who are interested in this particular problem.

It may help you for me to give a little picture of the State of New Jersey, which is relatively a small State sandwiched in between New York and Philadelphia. Some people claim that all the good things go through New Jersey. Some of us think that some of them stay.

New Jersey consists of 21 counties, the largest of which has 810 square miles and the smallest 43. The population is a little more than 3,200,000. The largest population in one county is 652,000, and the smallest is 19,400. The smallest county (that of 43 square miles) ranks second, with a population of more than 600,000. This is due to the fact that it is an industrial center just across the river from New York. There are 5 cities, each with a population greater than 100,000; 12 cities of more than 25,000; 18 cities of 10,000 or more, and about 785 municipalities of 2,500 or less. New Jersey has about 3,000 physicians. There are 69 large general hospitals with free clinics, including prenatal clinics, which are being developed throughout the State. There are 7 State hospitals to care for tubercular, feeble-minded, epileptic, and insane persons; and about 30 small private hospitals and maternity homes. The number according to counties ranges from 1 small private hospital to 14 large general hospitals. In one county there is no hospital of any kind.

The number of births in 1925 was 76,530. The maternal mortality rate was 6 and the infant mortality rate 70. That may give you a very superficial picture of New Jersey.

Now in regard to midwives. The law requiring the licensing of midwives was passed in New Jersey in 1892. The licensing and the suspending and revoking of licenses are under the control of the State board of medical examiners, not under the State department of health. When we reorganized our child-hygiene bureau the State department of health, quite of its own volition, without the request of anyone or specific authority from any source, undertook the supervision of midwives. It has been generally held by those who know us that we are not a very law-abiding bureau; that is, we felt that the supervision of midwives was a necessity for the protection of child life, and we merely went ahead and supervised them. Some people still question our authority.

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In order to give you a clear picture of the supervision of midwives I think it desirable to sketch in a rapid fashion the child-hygiene program, because to my mind—as things apply in New Jersey—the midwifery program should not be thought of or undertaken as a separate activity or entity. As I have said, we were interested in supervising midwives merely because we considered it essential and necessary for the proper protection of child life. We had no preconceived notions and no convictions about the midwife. We knew that when we started work they were attending about 30,000 births a year, which represented about 42 per cent of all the births occurring. We knew that they had an immense influence upon not only the newborn baby but also upon the mother's attitude toward this baby; that the midwife, being often of the same race and nationality, with the same traditions and prejudices, would have an immense influence for good or evil in the later care of this infant. So I wish to make clear that our work with midwives was prompted wholly by our feeling that she exerted a highly important influence upon the survival of the infant and upon its proper care. We would not consider establishing a midwifery program except as part of an organized child-hygiene program.

In organizing the child-hygiene program in New Jersey we thought that the most economical and efficient way of protecting child life was to place in a limited area one nurse who would be responsible for all the important factors that enter into the health and life of the child. That included prenatal care, and care of the newborn baby, the preschool child, and the school child. You know that we have designated that as the continuous child-hygiene program.

Having placed a nurse in a definite, limited district to undertake these activities and certain related activities, such as the supervision of boarding homes, of unmarried mothers, of the prevention of ophthalmia, we then developed the idea of a district supervisor of nurses, having one nurse direct the activities of as many nurses as we thought she could supervise.

The district supervisor then is responsible for all the child-hygiene activities in her district, and these include the activities of the midwife.

In the central organization we have an assistant who supervises the midwifery activities of the district supervisors. I believe that in the field there should be one person taking care of all the activities, whereas it may be desirable to have in the central office some person who is a specialist in one of the activities of the field.

I think with that sketch I may indicate to you what we believe have been the results of this field of activity and something of the methods. Perhaps the clearest way is to contrast the conditions that we found in 1919 with the conditions that we are able to report in 1925. Inasmuch as I shall be dealing with figures, I want to assure you that we have made every effort to have these figures be facts. I mean by this that we have not permitted our assistants to report impressions of midwifery activities. They are allowed to tabulate only those things that they could be confident were true, and they have taken the time to make surveys of specialized types of midwifery activities so that we could assure ourselves of the status of the midwife's work.

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In 1919 the midwifery work consisted of having one supervisor covering two counties. In 1925 there were 12 district supervisors working in the 21 counties. In 1919 licensed midwives numbered 946, and 450 of these were active; in 1925 there were 398 licensed midwives. In 1919 they delivered 42 per cent of the births; in 1925 they delivered 23 per cent of the births. This change in percentage of cases delivered is partly, I have no doubt, the result of supervision, but it is also partly the result of restricted immigration.

In 1919 there were 262 women practicing without a license. In 1925 there were 11 unlicensed midwives, all of whom have been referred to the State board of medical examiners for prosecution. I frankly admit that before 1925 we did not refer these 11 midwives for prosecution; that is, they were working in areas where we thought they were needed. Since that time either licensed midwives have come into the district, or transportation has become of such a nature that we think the midwives are unnecessary, and we have then moved for prosecution. In other words, we have not been influenced altogether by the legality of the question; we have been influenced by what we considered the practical indications of the situation.

This question of unlicensed midwives and how to get rid of them may interest you considerably. In the first place, we feel that you should not make it a principle to get rid of all unlicensed midwives. Some unlicensed midwives are better than licensed midwives. We think it should be settled on a practical basis. If a study indicates that a certain woman renders very helpful and useful service in a district, we would supervise her and direct her work just as if she were licensed, merely waiting for the time when we think she is unnecessary and then telling her she must either obtain a license or cease practicing. We have not had very much difficulty in the elimination of these 251 unlicensed midwives. A great many gave up their practice as soon as they realized that they were going to be very closely watched; some gave it up just as soon as we could show them that we had considerable evidence against them; others gave it up when we explained to their families (they were often comfortably placed) that midwifery was an undesirable activity for the mother and might lead her into serious trouble. So we have had many women cease voluntarily and others as a result of prosecution, although we have relied very little on the law and on prosecution. We have come to this conclusion as the result of very interesting experiences. We have one midwife who is prosecuted about every six months; and every six months she pays a fine of $250. Every once in a while she goes to jail six months, and when she comes out she practices again. In such a case prosecution is absolutely useless. We can not persuade her to quit; we can not force her to quit; we can keep on punishing her. It is somewhat analogous to our general criminal procedures. We have very little confidence in them.

In regard to some of these check-ups whereby we try to determine the status of midwifery: In 1919 the midwives hardly knew that the law required them to use silver nitrate in the eyes of the newborn, and cases of ophthalmia were frequent, although such a law had been on the statute books for years and an appropriation of $2,000

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had been made for the purchase of silver nitrate. In 1925 it was definitely proved that 98 per cent of the midwives used silver nitrate in the eyes of the newborn, and we seldom hear of ophthalmia any more. That is the result of a very intensive investigation of the activities of each midwife. The investigation may consist of questioning the mother of each newborn baby at certain times of the year or in certain districts and areas, but the statement is based on the result of a very intensive, and so far as I know, an honest investigation of the facts. Ophthalmia is practically unknown in New Jersey. I mean now the ophthalmia of gonorrheal nature. There is a certain amount of general ophthalmia, of course.

In 1919 the survey showed that about 32 per cent of the midwives carried a spare bag and equipment—and that word "spare" is very loosely interpreted. In 1925 a recent check-up showed that 87 per cent of the midwives carry very good bags and equipment. Now we mean a very definite thing by the term "good bag and proper equipment." It must include: A leather bag with three removable, washable linings, a ¼-pound package of sterile cotton, 1 yard of sterile gauze unopened, umbilical dressings in sealed envelopes, cord tape in sterile bottles, umbilical scissors, two clamps, baby scale, thermometer, boric-acid powder, lysol, fluid extract of ergot (1 ounce), rubber gloves, clean all-over apron, nail brush and wooden stick, liquid green soap in shaker bottle, silver nitrate, midwife's case-book, and a card for reporting an abnormal case. Before we classify that bag as good it must contain all these things. If any one of these things is absent it is not counted a good bag.

This results from the inspection of the bag in the home—not merely on display where a midwife can perhaps substitute a fancy-looking bag. It is the result of the investigation of the bag in the home as the midwife uses it.

The midwives in New Jersey are using this uniform equipment. We have arranged through the midwives' association that they shall purchase at wholesale prices from one of our large cotton-manufacturing houses sterile goods of a uniform character.

It was found in 1919 that 21 per cent of the midwives carried various instruments, such as a speculum, wired catheters, curettes, and hypodermics, and prescribed drugs such as morphine, laudanum, paregoric, iron, arsenic, and strychnine. In 1925 we still occasionally discover a midwife who will give a hypodermic—but this is usually at the suggestion or request of a physician, especially in the foreign groups—or she will prescribe cathartic pills, but very rarely. For a little while they were using hypodermics of pituitrin, but we feel quite confident that it is extremely rare for that to happen in New Jersey to-day.

In regard to the clinical thermometer, which is so very important from the standpoint of the detection of early sepsis and fever, it was found that many midwives carried thermometers but could not read them, and never attempted to read them. They do that to impress themselves. [Laughter.] In 1925 we can definitely state that 80 per cent of the midwives have their thermometers and actually and regularly use them.

Seventy-seven per cent of the midwives call physicians on abnormal cases. In speaking of abnormal cases, I do not mean difficult labor;

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but any abnormality, whether in pregnancy, in labor, or in the newborn infant.

You may be interested in this fact which makes clear this point: Physicians were called in for 476 of the 540 abnormal cases actually reported in 1925, on forms supplied for the purpose. The physician's own observation and report was made on many of these reports.

I think these facts are enough to give you an idea of the definiteness of our procedure with the midwife. We have clearly in our minds the things we wish them to do and the things we do not wish them to do. The supervisors are required to report definitely on the things they do and the things they do not do. It is not merely general educational propaganda or campaign work. It is a very specific and definite procedure.

You will be impressed by the amount of time which the district supervisor gives to this work. It can only be estimated, but it appears to us that about one-fourth of the district supervisor's time is given actually to the supervision of the midwife. Our report shows 3,473 visits made directly to midwives; 2,015 prenatal cases reported by midwives to the supervisor or to prenatal clinics; 54 puerperal deaths investigated, also 33 infant deaths, and 62 stillbirths. These investigations are made merely to give the district supervisor detailed information in regard to the midwives' methods and procedure, and not to fix responsibility looking toward prosecution.

The midwives are organized into county associations entirely under their own control. They elect their own officers and conduct their meetings, with the advice and guidance of the district supervisor; but it is an absolutely autonomous organization, as you will readily see when you note some of the czar-like things that are done once in a while. Last year they held 83 monthly association meetings with an attendance of 1,075. At these midwifery meetings an attempt is made to have a regular course of lectures. We suggest the list of subjects to the district supervisors, who are then expected to talk it over with the county medical society, in the hope first of familiarizing them a little better with what the health department is doing in midwifery work, and, secondly, to have them suggest the best physicians for delivering these talks. They are of very fundamental character, such as: The importance of the prenatal period, a normal pregnancy, labor and delivery, asepsis, the premature and immature baby, venereal diseases and their control, the nurse and the midwife, and normal nutrition in the infant.

In 1924 we held our first State-wide conference of midwives. You will be very interested to know that it was held in the Academy of Medicine. That was quite a victory. We even got the president of the State medical society to come and address the midwives. He was a little shocked and surprised when he saw them all there. We also had the director from the American Child Health Association there. I think he got a few surprises. The midwives came from all over the State. They wore white uniforms, and they had a very lively discussion. You may be interested in one point they made: They had been instructed by us to refer all abnormal cases to physicians, and one of them got up and said, "That sounds perfectly proper and good, but if it is, we think that the doctors ought to be compelled to refer all normal cases to us." [Laughter.] From some of the statistics we have

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elaborated on maternal mortality we are almost disposed to agree with them. The midwives now look forward to this annual conference as a regular event.

The most recent development has been getting the midwives to do urinalysis on every case. They are able to purchase now at nominal price a urinalysis outfit, and to date they have ordered about 100 sets voluntarily through their own organizations. I always wish to emphasize that. It is not something we are giving them or anything they are being ordered to do. These things are done of their own accord as the result of persuasive pressure.

To show what can be done with midwives I wish to mention briefly a recent development in Newark. You know that infant mortality to-day simmers down practically to neonatal mortality. In all the States and cities that have done any kind of intelligent child-hygiene work the deaths of infants under 1 month constitute about one-half of the deaths under 1 year of age; and the deaths under 1 week constitute about one-fourth of the total. That being so, there will be no reduction of infant mortality unless this early mortality can be attacked.

It occurred to us that it would be very fine if we could get a record of births the day the babies were born. At a conference with midwives we explained the situation to them. We had a postal card printed with the department's address on one side, and on the other a blank for merely the date, name, and address of the birth. We are receiving to-day the cards for about 90 to 95 per cent of all the babies delivered by midwives within 24 hours after their birth. That is in Newark, not in the State as a whole. I think by just mentioning this incident I have made clear what can be done in active cooperation with the midwife.

DISCUSSION

The CHAIRMAN. We have found that there are in the United States about four types of midwives with which we are dealing; namely (1) The foreign-born midwife, who has been discussed in Doctor Levy's paper; (2) the Mexican midwife, who is found in the border States, such as Texas, Arizona, New Mexico, and California; (3) the American-born midwife, who has no training, who is a good friend and neighbor, who is helping her friends and neighbors where there is a lack of medical service, and who does not pose as a midwife nor receive pay—and I will cite my own State, Michigan, as having a goodly number of those—and (4) the Southern midwife, who is usually a negro. I am going to limit this discussion by calling on some of the people who can tell us of the type of work done with each of these groups.

In the Children's Bureau we have a negro physician who is helping in the South. She has been in Tennessee and is now working in Georgia, and I am going to ask her to talk to you about the negro midwives for just a moment.

Doctor WHIPPER. The midwives in Georgia are rather hard to find because they live at such great distances and in such places that one would hardly know anyone lived there. It seems that many of them would like to deny doing the work, but after you get in touch with them and let them understand that there is no harm coming, that you

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are really going to help, and probably show them pictures of some of the other midwives, they respond readily and are very easy to teach. Many of them can not read nor write. Some can sign their names, others can not; but they are very anxious to learn. We teach them by demonstration, and as soon as they are taught they are as eager as little children to come up before the class and show that they know how to do the work. Frequently they can not tell you how—at least they think they can not—but after a while you get them to talking freely and they get the work done, though their English is not always the best.

I wish to tell about a piece of work that was done in Atlanta. There were 84 midwives in that class. I had taught them to do the prenatal work, to tell the women just what to do during the whole time, to get in touch with them as soon as possible, so as to give them all the information possible. I had a nurse who was very good in assisting, and I had a prenatal clinic formed there. The negro physicians in the community came in and helped out. About 15 or 20 women came each week, and while each patient was being examined I talked to the other women about prenatal care. We had a social-service club connected with the church in whose parish house we were working. They taught the people how to make the children's clothing and the obstetric package, and how to make the things out of virtually nothing. They were poor people, and we told them to bring anything and we would show them how to make something out of it. They did. When we were through with that we got the midwives really to do the work we were trying to accomplish. They were telling us they were doing it, but we saw that they did; and when they took blood tests we would take the specimens to the city laboratory and have examinations made.

The CHAIRMAN. Doctor Smith, will you tell just a little about the American type of midwife and how you are reaching her?

Doctor SMITH. We have a difficult problem among the midwives in Michigan. By a survey we found that in 1923 about 1,113 midwives were reporting births. Some of these are under supervision, and, especially in Detroit, they are very well supervised and are under local regulation. Just recently I succeeded in getting the rules and regulations approved by the State council, and they have gone to the printer; so we are hoping to send a copy of the State rules and regulations to all midwives in the State very soon.

Although the midwives are not licensed in Michigan—that is something we have to look forward to—we are holding what we call midwife classes throughout the State. We have a physician and a nurse who go from county to county holding classes not for midwives alone, but for all women, but we are urging the midwives to come. At these classes we take up prenatal care and child care and also demonstrate the preparation of obstetrical kit and layette and of the various things necessary for home delivery.

We find it very difficult to get the midwives out to these classes, but the numbers are increasing. I think our problem relates to the foreign-born women in the upper peninsula more than to our American-born midwives, and there we are trying to do some intensive work.

We have found that where the midwives are operating the maternal mortality has not been affected, but we do find that the infant mor-

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tality appears to be higher in the parts of the State where the midwives practice. So we are hoping to do still more work among the midwives this coming year.

The CHAIRMAN. Miss Anderson, will you tell us a little about your work in New Mexico?

Miss ANDERSON. During the past year through the courtesy of the Children's Bureau we have been loaned a midwife instructor for our Spanish-American midwives. We have very many of them because the population of New Mexico is largely of Spanish and Indian descent.

Our midwives are a necessary evil because we have extremely isolated districts. Our mountain districts are very numerous, and in the winter they are snowed in. They may be 80 to 100 miles from any ethical physician or a physician of any kind. Physicians charge $1 a mile, so that is prohibitive, and we have been very appreciative of the work that is done with our midwives. They can not read nor write nor speak English, so you see we have a great problem there. But we teach them as the negro midwives are taught, by demonstration; and we have gotten them from the stage where they were dirty and carried no equipment but their hands, and might cut the cord with the carving knife as the only instrument available, to at least some equipment and to wearing an apron and washing their hands before instead of only after the delivery.

The CHAIRMAN. Does anyone wish to ask any questions of Doctor Levy before we call upon him in this discussion?

A DIRECTOR. I should like to ask what program his is in regard to instituting breast feeding for the babies cared for by midwives and in regard to continuing it.

Doctor BRYDON. I was very much interested in what Doctor Levy said about having midwife education constitute a part of his child-welfare program rather than a separate and distinct unit. In speaking of the child-welfare program do you mean the whole maternity and infancy program, or do you mean that part which we usually speak of as the child part in contradistinction to the maternity part of the program? The reason I wish this made clear is that I feel so positively that the midwifery-education program should be a part—should not be separate, but should be a part—of the maternity program; that if we get the program well under way it will include prenatal midwife education, education of the mother, and a campaign against neonatal mortality and infant mortality.

Doctor NOBLE. I should like to ask Doctor Levy what he thinks about the automatic elimination of the midwife in the course of time if immigration is not renewed. In Pennsylvania the age of the midwives, as we gather them together and see how very old some of them are, shows very clearly that they can not go on practicing much longer. New midwives are not being licensed, and the children of the present foreign mothers are not going to wish to call in midwives. This should result in an automatic elimination. Does he not think this reasonable to say to the physicians who wish to eliminate the midwives?

Doctor VEECH. I should like to know his standards for granting a license.

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Doctor Koenig. If we are going to try to eliminate the midwife (which we are gradually doing in Arkansas) and to raise her standards and to prevail upon the physicians to tolerate midwives in a State like Arkansas, where they really are a necessity—I wonder if it would not be better to instruct the midwives to take the urine to a physician, as we are doing. I should like also to ask whether Doctor Levy has other classes of instruction between the monthly meetings, and who conducts them. We have nurses and physicians conducting our classes in the county.

The Chairman. Doctor Levy, will you respond to these inquiries?

Doctor Levy. I shall do the best I can. I believe the first point to make is that with the reduction of cases delivered by midwives there has been no reduction of maternal mortality. Now do not forget that point. It will influence considerably your attitude toward the midwife. If at any moment we had knowledge or experience that would demonstrate that with the elimination of the midwife we were reducing maternal mortality we should have a magnificent impetus to hurry her elimination.

Some one (from Michigan, I think) stated that the highest infant mortality seems to have been found among the cases delivered by midwives. I should be interested in getting those figures. Throughout New Jersey the lowest neonatal mortality rates are found among the women delivered by midwives.

Doctor Noble. That is the case in Pennsylvania also.

Doctor Levy. I am not saying it is because they are delivered by midwives; therefore you must not give the impression, either to yourselves or to anyone else, that when you say you had a group in which the highest neonatal mortality was among those delivered by midwives it is because they were delivered by midwives. Let us try to keep the facts straight because that is the fundamental basis of the whole discussion.

In regard to instruction on breast feeding—that will, I think, help the answer to Doctor Brydon's question: To our minds the midwife question is merely part of the child-hygiene question. The establishment and maintaining of maternal nursing depends very much on the instruction the mother receives in the first two or three weeks after the baby's birth. Her attitude is determined—her attitude is influenced—immensely by the midwife, so that our supervisors are expected to instruct the midwives just as intensively in regard to the proper care, nursing, feeding, and management of the baby as in regard to the prevention of sepsis. After all, when you think that, for instance, with 12,000 births there are 85 maternal deaths, but there are 12,000 babies whose lives can be affected, you will realize that numerically the great problem is the baby and not the mother, although dramatically the death of the mother is a much greater thing. Your only hope at best is to prevent maybe 10 deaths of mothers; but by the instruction you give in the nursing and care of the baby you are influencing the whole health and life of 12,000 babies.

So we have a very definite, positive instruction. The midwife must teach the mother how and when to nurse, and if the mother can not nurse the child then the midwife must consider that an ab-

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normal case and not advise the woman what to do but merely advise her to consult a physician. That applies to the premature baby, the immature baby, and you see how it comes in now with that 24-hour notification. The nurse is there in 24 hours, and if the midwife does not report it the nurse will, and this will be counted against the midwife.

About the automatic elimination? I have taken a very fatalistic attitude toward the midwife question; that is, I have said it is quite outside of my control. All I know is that there are midwives delivering women, and our job is to make them as good as possible. Whether they will increase or whether they will decrease is quite aside from the question. You may be interested to know that some time ago a very violent attack was made on the midwives in Philadelphia, and they were all dumped into the Delaware River, which is rather close to New Jersey [laughter], but no constructive program has been offered yet. So I myself never waste time discussing whether midwives are going to increase or decrease; I am interested only in the fact that as you eliminate the woman who engages in midwifery you naturally reduce the number of midwives; yet if the physicians continue running up the fees to $300, $500, $1,000 a case, there may come back an altogether different type of midwife, charging $25, $50, or $75; and she will be a highly trained woman whether she be a nurse or not.

As to the standards for licensing: To my mind they still are not what they should be, but New Jersey requires two years' training in a recognized school. I think it is a lot of paper talk, about the recognized school. It is so arranged that she can spend a day a week in a school, which I think is all wrong. To my mind Bellevue is doing the best piece of work in that direction by requiring continuous attendance for at least six or eight or nine months. The objection made to that is that it makes it difficult to take the course. Well, the more difficult the better, because then only the worth-while persons do it. Then they must pass an examination conducted by about a dozen physicians who ask them very, very difficult questions in anatomy and physiology; and if they pass these it does not indicate that they are going to be any better midwives than if they did not pass. That is true of a lot of physicians who have passed. I mention that because if I can make clear (and I will bring that out in another point) that the only thing that is worth while—and I am talking a little bit in an exaggerated fashion when I say "only"—is close follow-up after the midwife is practicing.

I do not care very much about classes. I care about following the midwife into her home on her postpartum case, on her delivery, on her patient's baby. You have the best example in physicians; they have had the best instruction in the world, yet see how few Doctor Noble finds she thinks she can trust to take care of the babies in the State of Pennsylvania; and Doctor Knox finds it very difficult to find pediatricians to go down and examine babies in Maryland. On that score we feel again that such work is fine, but the results will depend on what you get the person to do who is there all the time, not the person who makes a nice State visit once in a while.

So the standards are high, but I want you not to be deceived by standards. Do not think that if you make standards for your State

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you are going to eliminate midwifery. You need standards to enable you to prevent certain types of women from practicing, but the results will depend on how closely you follow up the midwife all the time. Specifically, we conduct no other classes than these lectures, and at the monthly meeting of the midwives with the district supervisor she constantly discusses with them their own detailed cases.

About urinalysis: My attitude there again is a practical one. If you believe that your purpose is to eliminate the midwife, the worse you can make her the sooner you will eliminate her. Perhaps you might be prompted to go at it in that way. We are prompted merely by the problem, since physicians will not do urinalyses for their own prenatal cases, how are you going to get the midwife to do them? One of the great difficulties we have in prenatal work in New Jersey is inducing the physician to do something which makes it worth while for a woman to go to him after the nurse has prevailed upon her to go. So we believe, from a practical standpoint, that if we can get the midwives to make urinalysis for albumen and sugar, which is very simple, we will get them to send abnormal cases to the physician—which I want to say is our basic attack. Make them realize that it is to their own advantage, if they wish to continue in the profession, not to mix themselves up with abnormal cases. Therefore we must help them to identify abnormal cases, to recognize them, and to refer them to the physician.

The CHAIRMAN. Our next speaker is Doctor Eliot, of the child-hygiene division of the Children's Bureau. I think there is a little misunderstanding in the field about these two divisions of the Children's Bureau. The child-hygiene division is concerned with research work, whereas the maternity and infant-hygiene division is responsible for the administration of the maternity and infancy act. Doctor Eliot is in charge of the rickets study which is being carried on in New Haven and she will give us many helpful suggestions.

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A DEMONSTRATION OF THE COMMUNITY CONTROL OF RICKETS

By Martha M. Eliot, M. D., Director, Child-Hygiene Division, Children's Bureau, United States Department of Labor

In October, 1923, the United States Children's Bureau undertook in New Haven, Conn., in cooperation with the department of pediatrics of Yale University, a three-year demonstration which had for its main purpose the prevention or control of rickets in a city community. For some time it had been known that rickets could be prevented in animals by the use of cod-liver oil, sunlight, or artificial ultra-violet light; but little had been done to show that similar means could be used to prevent or control rickets in infants. Because of the great number of factors involved in the development of rickets and the complexity of the problem a great many theories had been advanced with regard to the etiology and cure of this disease. Not until a short time before the demonstration was started had the facts about the effect of sunlight and cod-liver oil become sufficiently clear to warrant a study such as has been undertaken in New Haven.

Rickets was first described as a clinical entity by Glisson [1] about 1650. Until that time, and indeed for a long time afterwards, rickets was confused with other conditions such as scurvy, scrofula, rheumatism, and other diseases of the bones. It was true that children suffering from scurvy or scrofula were frequently the victims of rickets as well, but not until late in the nineteenth century was rickets clearly defined as a separate disease. Its treatment has been as varied as the theories regarding its etiology. Cod-liver oil [2] was originally used as a medicine by the fishermen of the northern European countries, but its therapeutic value was not recognized by the medical profession until much later. The first report of the administration of cod-liver oil by a physician was in 1766 in England, when a case of severe rheumatism was cured by its use. In 1822 it was known to be in use in the Netherlands for rickets and scurvy, and shortly afterward reports of the cure of rickets with cod-liver oil came from France and Germany. In the last half of the nineteenth century it fell into disuse, and its efficacy in the treatment of rickets was not widely appreciated again until the early twentieth century. That poor hygiene and bad housing had much to do with rickets was generally believed, but the specific effect of ultra-violet light was not known until quite recently. In 1919 Huldschinsky [3] reported the cure of rickets with artificial ultra-violet light, and in 1921 Park and Howland [4] published a report showing that cod-liver

[1] Glisson, F., et al.: De rachitide, sive morbo puerili qui vulgo "The Rickets" dicitur, tractatus. Second edition. London, 1660.

[2] Guy, Ruth A.: "The history of cod-liver oil as a remedy." American Journal of Diseases of Children, Vol. XXVI, pp. 112–116.

[3] Huldshinsky, K.: "Heilung von Rachitis durch künstliche Hohensonne." Deutsche med. Wochenschr., 1919, Vol. XLV, p. 712.

[4] Park, E. A., and J. Howland: "The radiographic evidence of the influence of cod-liver oil in rickets." Johns Hopkins Hospital Bulletin, 1921, Vol. XXXII, p. 341.

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oil has a specific curative effect upon rickets. The proof of these observations was demonstrated by Roentgenograms of the rachitic and the healing bones. Since then there has been much investigation showing the curative and prophylactic value of sunlight and cod-liver oil in rickets of animals and their curative value in human rickets.

The district of New Haven selected for the demonstration has a population of approximately 13,500, one-third being Negroes and two-thirds a mixed population of Italians, Irish, Polish, and native Americans. This selection was made because it is well known that Negroes and Italians are particularly susceptible to rickets. The staff consists of two full-time and one part-time physicians, three visiting nurses, two social investigators, an X-ray technician, and two clerks. The office is located centrally in the district and is equipped with an X-ray machine and a mercury-vapor quartz lamp. The cooperation of the health department of New Haven, the State board of health, the New Haven Medical Society, the Visiting Nurse Association, and other social agencies was sought at the beginning of the study. Without their assistance much of value to the investigation would have been lost.

The daily routine of the demonstration has been comparatively simple. The board of health has sent to the Children's Bureau office the birth certificate of the babies born in the district during the period of investigation. If a local physician had signed the certificate one of the Children's Bureau physicians called to explain to him the purpose of the demonstration and to ask his cooperation. In this way many of the physicians of New Haven have become familiar with the demonstration at first hand. After the physician has been seen once the receipt of further birth certificates is reported to him by letter. The staff has made constant effort that these young babies should not be brought to the Children's Bureau office to be examined without the knowledge and consent of the family physician. When the nurse delivers the birth certificate to the mother this gives an opportunity to tell the mother about the Children's Bureau and to make an appointment to have the baby examined. General nursing advice about the care of the baby is also given at this visit. The first examination is made as early as possible, preferably before the end of the baby's first month of life. An attempt has also been made to have monthly repeat examinations throughout the first year, and examinations once every two months throughout the second year. Each time a thorough physical examination is given, including weight and measurements; and in addition a Roentgenogram is taken of the bones of the baby's wrist. The physician gives to the mother general advice on feeding and care of the baby. Cod-liver oil and sun baths are recommended at the first examination and at each subsequent one; and the mother is urged to return regularly for the repeat examinations. The nurses make follow-up visits at the home to see that the physician's advice is carried out as far as is possible.

It is of great importance to demonstrate to the mother how to give cod-liver oil and sun baths to the baby. Unless she is actually shown how to hold the baby to prevent his spitting out the oil she probably will not succeed in giving it. The nurse demonstrates this

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either at the office or in the home. With the baby lying across her lap she pours out the proper dose, holding the spoon in her right hand. With her left hand she holds the baby's mouth open by pressing the cheeks together between her thumb and fingers. The oil may then be poured little by little into the baby's mouth. If his mouth is not held open until the oil entirely disappears the baby will spit out what is left. It is frequent for babies to spit out oil not yet swallowed, but it is rare that one actually vomits the oil. As the baby grows older it is more difficult for the mother to give the oil. It is best to teach the baby to take it directly from a spoon and not mixed with other food. Some babies will learn to take cod-liver oil if it is always followed closely by orange juice. The cod-liver oil may be mixed with orange juice if this is done just before it is given. Other vehicles may be tried, but they are not very successful. Determination on the part of the mother to teach the child to take the pure oil is far more important than any vehicle.

The demonstration has brought out the fact that almost all babies can take cod-liver oil. Many babies do not like it and have to be taught to take it. The chief difficulty is not with the baby but with the mother. It is often difficult to make the mother realize the importance of giving this oil; but if she can be convinced of its value there is usually very little actual difficulty in administering it to the baby. It is best given before the bath in the morning and before the baby is put to bed at night. It is remarkable how willing many babies are to take cod-liver oil, and many children learn to like it. The oil should be given by the spoonful and not by drops. If it has been recommended first by drops a considerable effort may be required to wean mothers away from this method when larger doses should be given. The fact that cod-liver oil is a food, supplying elements for normal growth, must be explained clearly to the mother. She must be taught that including cod-liver oil in the baby's diet is as important as including orange juice in the diet. Babies 2 weeks old can take a half-teaspoonful of pure cod-liver oil twice a day; babies 2 months old can take a teaspoonful twice a day; babies 3 months old 1½ teaspoonfuls twice a day, and even 2 teaspoonfuls may be given twice a day without digestive disturbances. Cod-liver oil may bring about constipation in some babies. Experience has shown that even large doses of it have not been followed by diarrhea.

Cod-liver oil may be given the year around. During the hot summer months, when babies are receiving long sun baths, the oil may be omitted. If it is omitted during July and August it should be started by the first of September and continued throughout the winter.

At the time of the first examination the physician describes to the mother how to give sun baths to her baby. More important than this is the actual demonstration by the nurse in the baby's home. In the South the outdoor sun baths can be given all the year around, and in the North they can be given from March until November. During the winter in the northern part of this country it is impossible to expect mothers to give extensive sun baths to their babies out of doors. At this season indoor sun baths may be given inside an open, sunny window—preferably in the morning. It is important that the baby lie in the patch of sunlight coming through the open

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space. On sunny winter days the baby may often take its nap outdoors in a place protected from the wind but receiving the full benefit of the warmth of the sun. Throughout the spring, summer, and autumn the mothers can be taught to expose their babies daily to the direct sunlight out of doors. All babies should be tanned on their faces, arms, legs, and bodies by the middle of June.[5]

As the demonstration is not yet completed no final conclusions can be drawn. There are, however, some findings at the present time which are of interest. In approximately 90 per cent of the group of little babies which have been followed from month to month a very slight degree of rickets has been found by Roentgenograms before the infants reach the age of 6 months; and 65 per cent of this group have shown this first degree of rickets before they are 4 months old. These earlier manifestations of the disease, therefore, have not been prevented by the amount of cod-liver oil and sunlight given. If, however, the mothers have continued to give these babies cod-liver oil and sun baths as advised, this first degree of rickets has not increased but has been kept under complete control. Although clinical evidence of slight rickets has appeared as these babies have grown older the deformities have not been of a marked degree. If the treatment had not been begun until after the babies had reached 6 months of age it has been difficult to control this first degree of rickets; and some of this group of babies have developed more marked clinical evidence of the disease. This slight degree of rickets as shown by Roentgenogram may appear in the breast-fed babies as well as in those fed artificially. It occurs in white and negro babies alike, in the moderately well off and in the poor.

Two control series of children have been studied. The first is a group of children under 5 years of age living in the district at the beginning of the demonstration. The second is a group of babies born within the period of the demonstration but living in other parts of the city and receiving no antirachitic treatment. It has been found that about 35 per cent of the first control group have the deformities of either moderate or marked rickets at an average age of approximately 30 months, and 27 per cent of the second group have already developed moderate or marked rickets at an average age of 10 months. Only 4 per cent of the group of 116 children averaging 13 months of age reported in May, 1925, who received adequate antirachitic treatment showed more than a slight degree of rickets. Careful inquiry into the history of the control group reveals the fact that 4.8 per cent had convulsions previous to the time of examination. Only two children in the group who have received cod-liver oil have had convulsions to date. One did not receive treatment until after he was 6 months old, and the other was treated with cod-liver oil of unknown source. Up to the present time no convulsions have occurred in children who have taken adequate cod-liver oil and sun baths.

In the light of these facts it would seem important that cod-liver oil and sun baths be given to all infants at the earliest possible age and continued regularly through the first two years of life. Though the children of the dark-skinned races perhaps need more intensive

[5] For details see Sunlight for Babies (United States Children's Bureau Folder No. 5, Washington, 1926).

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prophylactic treatment because of their great susceptibility to rickets the children of the fair-skinned races must not be overlooked. Large, rapidly growing, breast-fed babies and premature babies are also very susceptible to the disease. It is not possible to tell which child may advance from the almost universal slight degree of rickets to a more marked degree of the disease. Sun baths are accessible to everyone in the spring, summer, and fall; and apparently cod-liver oil can be taken by nearly all babies whose mothers learn to give it.

DISCUSSION

Doctor Blachly. I should like to ask what is being done, or has been done, in regard to feeding the mother before the baby is born for the prevention of rickets.

Doctor Koenig. I wish to inquire—because we are constantly asked this—what kind of cod-liver oil to give to children. Not only the mothers but also the physicians ask us. We have assumed in our work in Arkansas that the cod-liver oil was given in the way of treatment, and in advising that the child have cod-liver oil we have suggested that it be given under the supervision of a physician, in that way gradually gaining the confidence of the physicians. Is that the best way to proceed, or should we tell the mother right out to use cod-liver oil?

Doctor McCornack. I should like to ask Doctor Eliot how she gives cod-liver oil. In the State of Washington we believe so thoroughly in orange juice and cod-liver oil that in our private practice we make it a rule that every case that comes into our office, no matter whether a breast-fed baby or not, gets cod-liver oil after it is 2 weeks old. That is absolute routine. But the physicians in our community consider that when we give any medicine at all we are practicing. So we have decided to put in our next list—and I am very happy to see it in this list that was passed around here to-day—a recommendation that cod-liver oil be given, I think this list says after the first month. That takes it out of the scope of a medication and puts it in the same position as orange juice. It is an actual necessity for the child to have orange juice for his artificial diet, and especially is it necessary for him to have cod-liver oil not as a medicine but as a food; and the physicians have readily accepted that attitude and appreciate now all over the State that we are not prescribing when we give cod-liver oil; that it is a matter of routine of our private practice.

Probably nothing is more embarrassing to a pediatrician who sees a child a day or two after it is born and follows him right along through the first year than to see rickets develop right under his nose—and it does. The first time such a case came to my notice I was very much embarrassed about it. I happened to be with a physician a few days after that and told him about it, and he just laughed it off, saying that of course that happened all the time. There is more to rickets than sunlight and cod-liver oil. We may possibly find later that an intestinal affair is contributory after all.

Doctor Knox. I should like to ask if anyone here has any data as to how many obstetrical operations, or what proportion, are necessary because of rachitic pelvis?

Doctor Eliot. There are some data on that subject.

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Doctor KNOX. I think that is an exceedingly important point for us to remember when people pooh-pooh at rickets as a disease that will cure itself a little later as the child grows up. We must remember that we can not, maybe for 15 or 20 years, see the results of rickets.

The CHAIRMAN. I wonder if anyone has made any study in regard to that. Have you done so in Massachusetts, Doctor Lakeman?

Doctor LAKEMAN. We have made no study of that. I think it is an excellent suggestion. We have some material that might help us. I am very much interested in sunlight treatment for pregnant mothers, and I wish Doctor Eliot would tell us what they have done along that line.

Doctor ELIOT. In answer to the first question about the prenatal treatment of the mother I should like to say that we are making some studies along that line. We have been following a number of the pregnant mothers in our district and ascertaining what they are eating. We are advising certain improvements in their diet. Some of the mothers have taken our advice, others have not. We have really been making more of a study of what they are doing than making a great effort to change their diet. We are anxious to make a special study of the babies of this group of mothers. I can not give you any data on this study yet because we have not finished it.

With regard to the use of sunlight for pregnant mothers I would also say that during last summer we carried on a study with a small group of women. We had them sun themselves thoroughly; but what the outcome for that particular group of babies will be I can not tell you yet.

Doctor McCornack has really answered the question as to whether cod-liver oil should be considered food or medicine. When we speak about it we always consider it a food just as much as olive oil is a food for adults. Many times one can get the idea across to the mothers, especially Italian mothers, who say, "We give olive oil. We don't need to give cod-liver oil." We say, "yes, that is good food for you, but for the baby cod-liver oil is better food." We always urge cod-liver oil as a supplementary food, and we tell the mothers that it is just as important food as orange juice. They will accept cod-liver oil as an important part of the diet just as they now accept orange juice. We have included cod-liver oil in the standards (see p. 79), and we have emphasized that it is a food.

When the baby is 4 or 5 or 6 months old administering the cod-liver oil becomes more difficult. Up to 4 months of age the baby can usually be handled by force if you wish, but after that you may have to teach the mother to roll the baby up in a sheet, if he is really very obstreperous, or to give him cod-liver oil in some other way. We use various methods. Sometimes we mix it with the orange juice. That works in a good proportion of cases. Sometimes we suggest a little molasses with the cod-liver oil, but we do not encourage the use of anything sweet. We use that as a last resort because it is much better to teach the mother that the baby must learn to take it plain. The baby who once learns can go on taking cod-liver oil until he is 2 years old without any difficulty. I know some children in New Haven who do actually cry for it. A woman came into our office one morning not long ago with a baby about 19 months

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old, and she said that the first thing this baby said in the morning was "oil, oil, oil." But they can be taught to take it, whether they like it or not, and of course the whole thing is teaching the mother that the baby must take it whether the baby likes it or not.

Doctor KNOX. When, with reference to the feeding time, do you recommend it, Doctor Eliot?

Doctor ELIOT. We give it almost any time in reference to the feeding. If it is a breast-fed baby, frequently 5 or 10 minutes before the breast feeding, sometimes immediately before the breast feeding. Some mothers are more successful in giving it after the breast feeding. If it is an artificially-fed child, we give the oil with orange juice.

I do not know any recent figures with regard to difficult labor as the result of rickets. I do know, however, that in France approximately 90 per cent of difficult labors are said to be due to rickets. In this country the textbooks state that 40 to 50 per cent are due to rickets, and yet many obstetricians believe that these figures are too low. On many of the rachitic children whom we have examined in New Haven we are making incidental studies of the development of the pelvis. One of the obstetricians in New Haven has become interested, and the material which we have now will be followed, I hope, through 10 years, possibly 15 years, from now.

Doctor NOBLE. You did not tell us the brand of cod-liver oil, Doctor Eliot.

Doctor ELIOT. There are two American companies (whose addresses I can give you) putting up oil from fish caught on this side of the Atlantic. Those two oils are undoubtedly fresh; the supply is not so great but that when we buy it we get fresh oil. The oil that comes from Norway is undoubtedly excellent oil when it leaves that country. Up to a recent time (whether this is still going on I do not know) it has been imported in large hogsheads the extra space in which is filled with air. A certain amount of oxidation of the oil may take place in these hogsheads. I have been informed that importing companies are now bringing in their oil under nitrogen so that oxidation shall not take place. Whether this will actually improve the quality of the Norwegian oil as it is used in this country I do not know. Norwegian oil is probably very good. The ordinary cod-liver oil procurable in a drug store and bearing only the drug store's name I think is not satisfactory for our purpose. But I believe we are safe in prescribing oil bearing the name of any of the large reputable firms of this country.

Doctor BRYDON. How about emulsions?

Doctor ELIOT. I would not recommend emulsions. We do not know what effect combining cod-liver oil with other things has upon the antirachitic factor in the oil. Some antirachitic factor may remain, but we do not know how much.

A DIRECTOR. What is the antirachitic factor in cod-liver oil? A radioactive substance from the sun transferred to the oil or a vitamin?

Doctor ELIOT. It is probably a radioactive substance of some sort.

A DIRECTOR. We have been using sun-treated oil in order to increase that property and using smaller amounts; and we find that it apparently does almost as well.

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Doctor Eliot. I have made no attempt to use any oil treated with sunlight or with artificial ultra-violet light, so I can not discuss it. Furthermore, I think we do not yet know how long such oil should be treated in order to give it the highest potency.

The Chairman. Doctor Haines has asked me to call your attention again to the film in the south room showing a series of pictures on rickets which is very interesting.

At the conference of the State directors last year the bureau was requested to appoint a committee to formulate standards for the examination of children at the child-welfare conferences. This request was referred to the advisory committee on pediatrics, and the standards are ready now and in the hands of the printer. I believe Doctor Haines said there are several copies of the proof here to-day, which will be distributed, and Doctor Knox will now dicuss the suggestions with you.

[Copies of page proofs of Standards for Physicians Conducting Conferences at Child-Health Centers (United States Children's Bureau Publication No. 154) were distributed]

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ITINERANT CONFERENCES—STANDARDS OF EXAMINATION

By J. H. Mason Knox, Jr., M. D., Chief, Bureau of Child Hygiene, Department of Health, Maryland

Itinerant child-health conferences generally are understood to be conferences held at successive places, the stay at each place being comparatively short with no definite arrangement for return to that given place in the future. These conferences can be held in a health-mobile or in a suitable room in a schoolhouse or other building. They should always be attended by the local nurse and conducted by a physician of considerable experience.

The itinerant conference differs in certain particulars from a permanent child-health conference. In the latter, usually at the same hour each week or twice a month, a definite, standardized child-health conference is held. The conferences conducted at such frequent intervals can and should assume responsibility for the routine care of children attending them. They are usually attended by children who can not afford to have their own physician examine them. These conferences are for the most part limited to large towns and cities. A complete examination of the patient is made, if not at the first, at subsequent examinations. An examination is supplemented by a complete history of the family, even including a great deal of information concerning the social status of the parents. Supplementary home visits by the nurses are an integral part of these conferences, and aid in reaching a diagnosis can be obtained when necessary from near-by hospitals and specialists, so that the object of these conferences can be said to be to make a complete physical examination and to provide a life plan for each patient.

The object of the itinerant conference, on the other hand, is to a large extent to arouse the community to the importance of such examinations—not primarily to study the children completely but to examine thoroughly a great many in the community who are not now under satisfactory medical supervision. Such a conference thrives best in new territory, seeks children not at present being seen regularly by their physicians, gives them the "once over," urges parents to take them to their own family physicians, and at the same time brings to the physician's attention the advisability of supervising well children.

The need for this kind of service is very real, for at present in the rural districts of our State a large number, certainly the majority of children, are now growing up after infancy without adequate medical supervision. We need to meet and conquer the inertia of two groups. One consists of the parents. This is largely a problem of information. Most parents do not understand how much their children are suffering through neglect of medical oversight. The other group whose inertia must be overcome consists of the physicians. Here we meet a real obstacle. The whole of the physician's training and experience lies in the field of diagnosis and treatment, and not in

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the field of prevention; and for the physician to attempt to persuade people who think themselves well to come to him at regular intervals would be misconstrued in many instances as an attempt to "drum up trade." Just at this point the sympathetic health officer can be of real service. He has no axes to grind, is not in any sense benefited, and can do his utmost to persuade the laity to demand from the medical profession protective care while they are well. In overcoming this inertia in both directions the itinerant conference can play an important rôle. Parents are invited to come with their children. They can give the history briefly, see the examination, and then have a few minutes alone with the physician, during which time he can particularize concerning the specific needs of the individual child.

A caution should be given here: In making the examination the position of the family physician must be constantly borne in mind. A diagnosis which perhaps he has failed to give the mother must not be made to her; if possible, it must be made only to the physician himself. Nothing should be done to undermine the standing of the physician upon whom the whole family must depend in case of sickness; everything must be done to strengthen his hands.

Local physicians are invited by letter to attend these conferences and see the work carried on. They are informed also that the physician conducting the conference can serve as consultant for any case that they may bring in person or send with a note; and after the conference is over each local physician receives a personal note from the bureau with an outline of the result of the examination. The nurse assisting with the conference receives a copy of this note so that she can use it to urge cases to return to their own physicians. It is hoped that the physician will have the note on his desk when the patient consults him. At these conferences it should be intimated that diagnoses depending upon blood or laboratory tests are not attempted. The conference is a kind of screening process by which the abnormal or handicapped children are detected and put in the way of having these handicaps removed.

We understand of course that to refer a handicapped child to a general practitioner may not always be of great assistance; but we are thoroughly convinced that in the long run this is the best procedure, as the standards in hygiene in any community can never be lifted higher than those which the physicians can be persuaded to apply themselves. The bureau works with and for the physician; it aids him, if necessary, to obtain a hospital bed for his patient and assists him also to obtain special services when required. One should be able in such conferences to determine:

1. The nutrition of the patient, using the height and weight cards as rough indexes, remembering always that the diagnosis of nutrition rests upon the skillful weighing of a number of factors and that this is one of the most difficult diagnoses to make except when malnutrition or overnutrition is marked.
2. The presence or absence of rickets. Here again judgment in incipient cases is difficult.
3. Whether there is disease of the heart.
4. Whether there is disease of the lungs.
5. Whether there is disease of the abdomen (including an estimate of the size of liver and spleen).
6. The position of the urinary bladder.

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7. The presence or absence of hernia; phimosis; abnormality of genitalia.
8. The condition of the nose and throat. In cases of obstruction, whether there are adenoids or hypertrophied tonsils, enlarged turbinate bones, or deflected nasal septum.
9. The condition of the teeth. This is the more important because it is often an index of the social habits of the family. Parents, as well as the children themselves, can be graded on children's teeth.
10. The condition of the eyes and ears in older children.
11. Vision and hearing. Rough tests for these may profitably be made in the preschool year.
12. The state of the nervous system and the child's mental age.
13. Whether the child has been vaccinated and whether he has had the toxin-antitoxin treatment.

If as a preliminary to this brief examination the nurse or her assistant has recorded a short history of the child, including a record of the character of his birth, his feeding history, any intercurrent diseases, his appetite, amount of sleep, and condition of the bowels the examining-physician has sufficient data to confer helpfully with both the mother and the family physician. It goes without saying that the more experience and skill the examining physician possesses, the more he can make out of an itinerant conference.

The permanent value of such a conference depends largely upon the tact of the physician conducting it; upon whether or not he is able to "sell" the idea of good health to the parent and to the family physician. It depends in almost equal measure upon the efficiency of the service of the public-health nurse. She must be relied upon not only for advertising the conference before it is held but also for assisting parents to take their children to their physicians to carry out the corrective measures suggested.

DISCUSSION

Doctor BLACHLY. I should like to say in support of Doctor Knox's paper that we have tried the itinerant conferences in Oklahoma with the most happy results so far as we now know. I wish also to say that I started my work in Oklahoma on this principle: I went before the annual meeting of the State medical association, at their invitation, and stated that to my mind obstetrics could not be practiced by correspondence, nor pediatrics over the long-distance telephone, and that these two things had to be done by the man on the job; and that my position, as I saw it, was to bring about a more wholesome, closer, sympathetic relation between the physician and the patient. As the result of that, never a day goes by that I do not have some commendatory letter from some physician, and innumerable ones from the mothers themselves. I have had one letter from a physician criticizing the stand that he thought I was taking, but he had wholly misunderstood the purposes of the bureau, and when these were explained to him he became my friend. When I took over the place in Oklahoma there were very few hospitals. Since then a number of splendidly equipped hospitals have been built. The X-ray hospitals are the best. They have all necessary apparatus and equipment.

About two years ago an effort had been made to introduce graduate work for the physicians in the rural sections, without success.

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No interest was taken in it, but now that is going over, and going over big. The physicians of the State have asked that graduate work be given in connection with the medical schools in Oklahoma City, and we have tentatively arranged a program in maternity and infancy work that the physicians who need and want that instruction may have close at hand so that they will not have to be gone very long from their practice.

We also had Doctor Dodson, the chief of the bureau of medical and health education of the American Medical Association, come to our State and give a number of very helpful addresses.

The prospects, from the standpoint of the physician, seem to me excellent, so far as cooperation is concerned. I wonder sometimes if those of you who have not always found it as easy as I have found it to work with the medical profession possibly have some of that difficulty because of not really putting yourself in the other fellow's place. If we fully understood, as Doctor Knox so beautifully brought out, the position and the ideals, the hopes and ambitions, and the problems of these rural physicians it might be just a little bit easier for all of us to get the cooperation that we must have if the mothers and babies are to profit by the work.

The Chairman. The get-ready-for-school conference is becoming a more and more popular part of the child-hygiene program, and we find in some of our cities that school boards are putting that program into effect. I think Doctor Stadtmuller, of California, probably had the vision of what this program would mean to the future school children when she initiated the program two years ago. We are very glad to have Doctor Stadtmuller here this morning to talk to us about the examination in the sixth year.

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EXAMINATION OF THE CHILD IN HIS SIXTH YEAR, BEFORE ENTERING SCHOOL

By Ellen S. Stadtmuller, M. D., Director, Bureau of Child Hygiene, State Board of Health, California

During April and May last year a campaign to provide a physical examination for every child who would enter school the following fall was carried on in California. Several considerations gave rise to this campaign. In the first place six years had elapsed since the 1918 Children's Year campaign, which had been notably successful in California, and it seemed fitting that the infants examined that year should have an opportunity of being rechecked before entering school. We hoped to benefit the children themselves by giving an opportunity for improvement in hygiene on the part of the mother, and by the correction of defects, where necessary, during the interim between the examination and the opening of school. At the time of this campaign California had only six full-time county health departments. We felt that our bureau would benefit by having contact with groups of individuals in the various counties who were interested in child health and that such persons would assist materially in developing our prenatal program in subsequent years. We also hoped to interest the medical profession in preventive examinations for children, as in many of our rural areas the physicians have no adequate conception of this type of work.

With these objects in view we called a meeting in San Francisco of individuals who could be helpful with suggestions and whose positions would give weight to our campaign. These included the heads of the department of pediatrics of our two medical colleges, the State supervisor of physical education (this being the department in California in touch with health work in the schools), the president of the Parent Teacher Association, the chairman of child hygiene of the Federated Clubs and of the Parent Teacher Association, the director of the health-center work of Alameda County, which has a well-defined program in active operation in Oakland (near San Francisco) and in the communities close to Oakland within the county—one of the members of our own board of health most interested in child hygiene. It had been my first intention to pay pediatricians to conduct the examinations during this campaign, but after the meeting of this group that plan was abandoned. We decided to address the county medical societies rather than the State medical society and to do so only in the counties where we intended to conduct our first year's work.

In planning our organization work we selected the 26 counties of our 58 in which we felt that we could conduct the campaign successfully, believing that an initial success would permit us to enlarge our territory in the succeeding years. The factors which we judged necessary to make the campaign a success included a friendly medical organization, a county superintendent of schools interested in health (where consequently there would be public-health nurses employed),

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and an interested group of laywomen who would undertake the requisite committee work. We had in our office a list of all persons with whom we had had any correspondence on child hygiene as well as a list selected from newspaper clippings pertaining to the same subject. Thus we were in a position to start with a possible source of committee material. In many counties the home demonstration agent of the farm bureau had started work by conducting nutrition classes so that the public was already alive to the school child's need of suitable diet.

The part which our bureau was to play in this campaign corresponded very closely to that which the Children's Bureau played in the National Children's Year. We furnished organization work through our own staff and by the help of a clubwoman especially employed to form committees; publicity material both for newspapers and for use by word of mouth in talking to groups of men and women; and printed forms for the actual examination, including mimeographed copies of height and weight charts. Where the medical society of the county requested it we also furnished a pediatrician to assist them in conducting the campaign.

Our initial step in organization was to address a letter to the county medical societies stating that the estimated number in need of corrections was 30 per cent of all school children, a conservative figure obtained by the results of two years' work in San Francisco in a similar campaign. We asked the medical society's indorsement of the work in its county and the appointment of a member of the society to act on the central county committee. The same procedure was followed with the dental societies. As the health officers in rural communities are often laymen these officers were not included in the county committees the first year. This omission of the county health officer from the committee was a mistake; he should be included beside the representative of the medical society, or, where a medical man, acting in both capacities. Our central county committee consisted of a chairwoman, usually from the Federated Clubs or Parent Teacher Association, an active worker interested in the health of children; a representative from the medical and dental societies; the county superintendent of schools; a public-health nurse representing her group (in many counties there was only one nurse employed). A member was chosen to handle the publicity, either the editor of a local paper or some one from the chamber of commerce. The duties of this committee were to assist us in deciding on the location of the centers for the drive—spot-mapping the county, as it were, in selecting local personnnel and in distributing the material that we furnished to the local committees. Some expense was involved in this work as there was mailing to be done, and occasionally it was necessary to print in blank spaces left in our publicity material the dates and places of the local conferences. Often this expense was met by volunteer printing on the part of the local newspaper or other printing establishment. Although this was our skeleton plan it had to be modified in certain areas. We found, especially in counties where there were two rival towns of the same size, that one might not operate under the chairmanship of the other; in such areas we abandoned the county formation and occasionally developed local

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committees in small counties, forming a committee in each of our union high-school districts.

We found the school organization most helpful in that it had well-established channels of communication out from the county superintendent's office to the schools. Wide publicity therefore could be given to the campaign with the cooperation of the county superintendent of schools. A California law requires the registration of minors during the first week of school, so that there was available in the superintendent's office a list of all preschool children. In this way the individual sheets with notices of the examination were distributed through school children to the homes. The large majority of the conferences were conducted in the school buildings. We fostered this idea as much as possible. In California the schools receive subsidies from both the State and the county, based upon average daily attendance. Necessarily they benefit by the superior physical condition of the children examined in such a campaign. Most people will go naturally to a school building where they might be reluctant to attend a conference in a privately owned building. In one county the superintendent of schools urged upon teachers the necessity of obtaining, by questioning the pupils, an accurate list of children entering school. You will note among the literature handed to you the forms which were perfected by her office. She also assisted by calling together representatives from every organization in the county to attend a central meeting at which the object of the campaign was explained. As this county was small and road facilities radiated from the county seat it was arranged to bring all children there by automobile from outlying districts rather than to attempt transporting them across intervening mountainous country. This also conserved the time of the physicians, most of whom lived in the county-seat.

Only 1 of the 26 counties originally selected was so uninterested that we abandoned the plan of a campaign there. We were obliged, however, to forego it in a number of others on account of an epidemic among cattle. There was some danger that this epidemic might be spread from farm to farm if people congregated at a central point. For every county so eliminated from our list another came forward and asked that it be given the opportunities of such an examination. Consequently we finished with the number of 26.

In our second year's plans we benefited by the experience of the first year in starting the work of organization earlier and in adding to our staff a speaker who could go out to address local groups after the initial formation of committees had begun. This year we selected 31 counties and employed three people during February and March to revive the committees of the first year and to form new ones. Many communities were ready to conduct this campaign without our having to do the organization work, writing in to ask if we were ready to furnish material such as they had used the year before. This year we included the health officer and were more active in reaching the dental societies in planning our central committees. We also furnished motion-picture slides to be run the week before the campaign. These stated briefly the need for such a physical examination, the local time and place being added either by hand or on the typewriter. This proved a most successful method of reaching

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large audiences who spread the news of the local arrangements. We plan this year to have slides containing less writing material and including a picture of a child being examined, in order to indicate the type of work done.

We realize that these examinations were probably not as uniform as they would be if they had been made by trained pediatricians; but we believe that the interest and stimulus given to the local physicians in regard to the health of children might be of more benefit than a more careful initial examination made by a stranger who left the community. I might say in passing that during the 1924 campaign only 18 days' work was needed from pediatricians paid by the State; 12 of these days were spent in one county at the request of the health officer of a full-time county unit. The director of the bureau did 11 days' work scattered in three counties in assisting in the campaign. In 1925 only 11 days' work from employed pediatricians was necessary, although the territory was at least one-third larger than that covered the year before. The medical staff of the bureau put in 6 days in assisting in the campaign. The second year, however, we endeavored to have our organizing nurses return to the counties during the week of their campaign and assist the local nurses in conducting the conferences.

We estimate roughly that in each year's campaign we reached one-sixth of the actual number of children entering school. In the first year 4,552 children were examined, and last year 8,193 were examined. Although four counties did not report we have a list of 363 physicians, 111 dentists, 178 public-health nurses, and 481 lay workers who assisted during the 1925 drive. I am sure from conversations with the local physicians that they see the impetus which is given to their work by such a campaign. The comment, "I was very rushed for two weeks after your spring campaign," indicates that parents are anxious to build up the health of their children and consequently do have many of the indicated corrections made.

California has largely centralized its school system, and with the transportation by bus the children come from long distances to the high school. Consequently we found it very feasible to make the union high school the center for the particular district in which it is located.

If you will notice the publicity material that I have handed to you, there is what we always speak of as the yellow sheet. That was used for advertising purposes. It has been criticized as being "scare headlines." We rather hoped it would be. We wished to make people, if possible, apply these questions to their own children. These were distributed for the most part through the school children. It had been my original idea that these would be wrapped up with packages in the grocery and put into library books distributed from our branch county library, but that plan did not work out so well. They really were distributed better through the schools.

Now, I wish to show you a plan of the territory we covered [showing map]. The different colors mean the different people in the organization. The white areas were those that were not covered; those are our very high mountain ranges, mountainous districts where the population is very sparse. In many places half the population moves down into the valley or to the coast for the winter. So

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we felt that in omitting those areas we were not really slighting a very large proportion of children. This year we have nurses in some of those counties and have put the campaign on there.

I am not going to give you very much about the statistical material because I think figures are very hard to carry in one's mind. But for every 100 children in this last year's campaign we found an average of 260 defects. Of course many of these were minor, teeth defects predominating very largely.

In California we have no compulsory vaccination law, and the first year we found a little less than 10 per cent of the children entering school had been vaccinated. We have had a very virulent type of smallpox this year, and at the end of this year's campaign we found approximately 20 per cent of the school children vaccinated. This is double the number for last year but still far below what it ought to be. I did not collect figures for the immunization, but that has been done very actively among the school children; however, not so actively in the preschool group.

I wish to show you one chart here. [Indicating.] The first year in many of the rural communities if a mother came in with a number of children they were all accepted. We had intended to limit the campaign to the group aged 5 to 7 years, but older children were not turned away, and we were able to make this graph of the increasing defects in children from 1 to 8 years of age. This represents about 100 children, and this represents 341, the larger number being scattered in this intermediate group that we were trying to meet [showing chart]. We found that 75 per cent of the children had some need for medical work and in the 8-year-old group 82 per cent were in need of it. So we feel that there is a great deal of work ahead, both for the medical profession and for ourselves.

I have been very specific in telling just what we did, because I always find that in these conferences I get more when people tell me exactly how they proceeded. I have not gone into theory at all. I have here a book containing all the material—publicity and other items—that we used in conducting this campaign in rural California; this might make my paper more intelligible if anyone cares to look it over.

The CHAIRMAN. I think we all agree that the itinerant conference is one of the best ways of stimulating interest in the medical supervision of babies and preschool children. We all have the vision of the day when we shall have a permanent program in every county in this country; and in making arrangements for the itinerant clinic or conference we ought to keep in mind the fact that we are building the foundation for that future program and try to leave behind some permanent piece of work which the community can carry on. This may need to be done through the help of the State bureau of child hygiene and probably with volunteer workers to a certain degree. If there is a permanent nurse in the community have her do the follow-up work as Doctor Stadtmuller has done in California. Sometimes we can find married nurses in a community. That has been the case in many eastern States.

Pennsylvania has been able to establish a good many permanent centers and Doctor Noble will tell us how Pennsylvania has won the support of the community in this work.

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PERMANENT CHILD-HEALTH CENTERS IN PENNSYLVANIA

By Mary Riggs Noble, M. D., Chief, Preschool Division, Bureau of Child Health, Department of Health, Pennsylvania

From the beginning of child-health work in our State department our chief aim has been the establishing of permanent centers where complete physical examinations could be given and mothers could be instructed in infant care. This could be done only if it were wanted in the community because the value of it was seen. To make it wanted then became our ambition. In establishing child-health centers we had certain resources on which we could rely:

1. There were already public-health nurses in the field under the State and other organizations, tuberculosis workers, socially minded people in the federated clubs, parent teacher associations, and the like.

2. Rent-free quarters could usually be found apart from other State clinic rooms (where although space was sometimes available it was not always suitable). It shortly became apparent that churches, private homes, and physicians' offices were less desirable than certain other places until to-day our first effort is always to see if the school building can house the center two hours a week. Many schoolhouses to-day furnish space and the elementary needs in the way of furniture (seats and tables), and there is a growing feeling on the part of school superintendents, principals, and teachers that to pay attention to the infant and preschool work eventually lightens the teachers' task. Libraries, mayors' offices, courthouses, department stores, fire-engine rooms, American Legion rooms, empty stores, Red Cross, and tuberculosis headquarters are among the available sites.

3. Physicians willing to conduct the examinations must be found. This has been the hardest problem, but as we look back over five years of work we realize that professional resistance has distinctly lessened. Among the younger physicians particularly, if we can succeed in getting them to take charge of the centers, we have the most wonderful cooperation; and even among the older members of the profession there is an increasing eagerness to engage in this phase of preventive pediatrics.

Our present policy is that we believe it to be the prerogative of the local group of physicians to determine which of their number (one or more) can do the health-center work most suitably. There are still local prejudices which stand straight across our path. There are towns with but one much overworked general practitioner, where no physician can be found to give center service. Misunderstandings of our aims are still rife, but slowly decreasing as we contrast the present with five years ago. Although we state it as our desire to have the local group settle the question as to which physician shall serve it is very often impossible to get them to make the actual decision

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about this. Then it devolves upon our field worker to visit the physicians one by one in their offices, preferably taking with her some local person, either one of the child-health committee or the prospective nurse. They go from office to office paying the friendly call. Each physician receives the individual explanation as to the meaning of the work. It is still the most important thing in this interview to dwell on the exclusively educational feature and to make perfectly plain that there is no possibility of its overlapping private practice and, therefore, poaching on the preserves of any physician. If before this round of visits is made there has been some indication as to which one or more physicians should be definitely requested to serve, our worker is in that case the one to make the request. We are not in any official sense "appointing" physicians from the central office.

It has often been hard to get a square deal for the babies and at the same time have the full cooperation and friendship of the physicians. Everyone knows that to ask a group of mothers to meet a different physician every week is almost enough to kill any new child-health center! One physician on a long term of service, or two or three serving turn about for three or four months at a time, as on a hospital staff, is best.

4. The final essential is a lay committee, preferably consisting of women willing to consider the health center a regular and exacting engagement, who shoulder certain definite responsibilities with regard to its equipment, its clerical and small financial needs, and the managing and hostess work during the two hours each week. This committee saves the time of physician and nurse, gives additional help for the smooth running of the whole when attendance is large; and, which is also most important, makes a yeasty nucleus in the community by which popular interest is fomented and information spread about. Very often a women's club which undertakes to sponsor the baby work as one of its particular undertakings is back of the committee.

The child-health center is not fully organized until all these factors have been made sure. The field worker often has to camp down in the place and work several days to settle all details. Personal interviews take much time. Committee meetings must be called and publicity started; the clergymen must be visited to get their cooperation promised; school people must be interviewed, and it must be made certain that they understand the enterprise and will back it by their personal effort. I have heard our workers say again and again that it was no use to go through all the motions of organizing unless the actual opening date was set and things were started on the move toward "the day." The culmination of the plans is usually the house-to-house canvass by the local committee, which is the first turn of the wheel of the machinery. This canvass means ringing every door bell, inquiring about the presence of infants and preschool children, noting the name and address of each child, and leaving with the mother the personal invitation and information as to the day and hour of opening.

Far and wide over the State so much seed has been sown in good ground and sprouted for us that it is not a matter of visiting towns for scouting purposes to arouse interest; but rather we receive spon-

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taneous and unsolicited requests in our office for organizing help in starting work for an already recognized need. The department supplies literature and record forms without cost. The organizer becomes a father confessor and periodic visitor for stimulation and help over the rough sledding through which many centers pass when the first interest threatens to wear off—when physicians fail to come dependably, or the committee grows lax, or the nurse fails to spend sufficient time visiting the homes.

The last point is one of the main ones for emphasis. No center can succeed without a home-going nurse. It is generally true also that extra incentives must constantly be thought up to act as a fillip. It is tiresome to go every week to dress and undress a baby "just to get it weighed!" So the alert committee and the nurse must have new attractions, prizes for attendance, Christmas parties, valentine parties, May days, summer pageants, campaigns, or must arrange for instructive talks that really amount to something. In multitudinous ways the ball must be kept rolling.

There has been considerable shifting of control of centers from State to non-State control. For example, one southeastern county near Philadelphia was turned completely over to local organizations and independent self-support in 1924. The Wilkes-Barre baby work now is all under control of the Visiting Nurse Association, the last State center being due to close January 30. There are well-attended and well-conducted centers in Scranton and Erie where the chief portion of the work is under local auspices, notably of the visiting nurse associations. The exact number of centers thus transferred is not recorded. In Dauphin County, after stormy history and with much changing back and forth, 11 centers are now firmly established under either the Red Cross or the Junior Red Cross, 5 of them being supplied with our special maternity and infancy nursing service.

To summarize, the main points in a permanent first-class center are: Adequate space and equipment; a local physician attending regularly and giving complete physical examinations; a public-health nurse who spends sufficient time making home visits; filled-out records; a functioning volunteer committee; monthly reports to the central office—and children to examine.

Pennsylvania is at present paying a small stipend of $1.50 an hour to physicians whose eligibility for the pay roll can be established. Eligibility depends upon a center adequately housed, complete periodic physical examinations of the undressed child, the taking of full records, and an attendance of not less than 12 babies per month.

Paying the physicians was planned to arouse local interest in such manner that the community finally would be responsible for the entire fee. Our policy was to pay for 12 months and at the end of that time have a 50-50 arrangement for the second 12 months. We made no restrictions as to how the community should secure its half, whether by private subscription or otherwise. At the end of two years our pay would cease, and the community would pay the whole amount. Our pay roll at present is carrying 20 physicians at $1.50, of whom 15 are serving in their second year and on half pay. Six physicians have served two years. Sixteen have refused of late to

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send in vouchers. Calculating from the beginning, 60 have sent in vouchers, 45 served without pay, and 7 who were originally on the list resigned, making a total of 112 physicians.

It has not been smooth sailing. Committees are slow to see their duty and with 12 months before them do nothing. Then at the end of the year when the communication goes forward to them they are taken by surprise. We are convinced that neither the physician nor the nurse should be burdened with the hunting up of ways in which this small fee can be met. I am not convinced that very much has been accomplished in arousing local initiative to carry on conference work wholly on local resources. Many have taken pay while it lasted and are perhaps worse off to-day than if we had not started a pay roll.

DISCUSSION

Miss Lockwood. I should like to ask Doctor Noble how Pennsylvania is providing for the health centers. In Delaware we usually have maintained the center through State funds. We have no county health units. We have called on some communities to furnish the center, but we are really very unsuccessful in having center work kept up by the local community. After a little while when the community interest more or less lags—it may not be because the center is not frequented by the people that need it but because of local situations such as that the money is not there to be gotten for some reason or other—we have to close the centers. Can anyone offer a real panacea for that situation and suggest how those centers can be kept up? We have several places where we have been in a continuously upset situation and where nurses have really given up and gone away because they could not stand the constant closing and opening and having their work in such jeopardy.

Doctor Noble. The cost of a child-health center in Pennsylvania is almost negligible except for the salary of the nurse. We have now, I think, by the last reports (they are given to me fortnightly) 418 centers; and it is just about 50–50 between State and non-State. A State center has a State nurse operating in it. A good many centers have been given over entirely to local control and the State nurses withdrawn. If we could find any of those workers that I named this morning, a local nurse of any sort to give it two hours a week and the necessary home visiting, with free quarters—we will take the easiest case—and a physician giving volunteer service, almost the only cost after the first equipment is for a little janitor service and the keeping up of such clerical supplies as will be necessary. I do not quite see why Miss Lockwood should have such terrible difficulty if it is purely financial. Is that your difficulty, Miss Lockwood?

Miss Lockwood. Yes.

Doctor Noble. With free quarters and a physician who is paid the small sum of $1.50 an hour or who gives his services? Your scales do not wear out easily; and the measuring board was made to start with; and if you supply the literature I do not see why your financial difficulties are so very great.

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Miss LOCKWOOD. We have no trouble while we are furnishing the whole amount, as we do in every county; and in the city of Wilmington, where we have our own health centers, we furnish everything. Naturally the work goes on there without giving us a bit of trouble.

Doctor NOBLE. We have never furnished a pair of scales nor even a measuring board. We do not supply any little paraphernalia, even a wash basin. We say that all this must be furnished by the community before we begin. The only thing we supply is literature and organization of the service. That, we realize, must be supplied continuously.

Miss LOCKWOOD. Our situation and conditions are all so different. We have no county health units; we have no nurse that belongs to any organization doing any work south of Wilmington.

Doctor NOBLE. Have you no Red Cross nurses or community nurses?

Miss LOCKWOOD. Not one. We have one community nurse above Wilmington, and we have a Visiting Nurses' Association in Wilmington, but none below. We have a few health centers that are operated by having the community provide a center. There is constant turmoil about it and the raising of the money for it. People are not going to do this all the time; they will do it for a while only, and we have no way of continuing that volunteer service.

Doctor NOBLE. We have found in our health work that one of the good results of all the things we are doing is the arousing of sufficient local interest to get a community nurse. A goodly number of Pennsylvania's communities have now their own community nurses because of the interest in health which has come about through the various things done by the State department. I do not see, Miss Lockwood, how you can do it without having a community nurse or some kind of nurse available.

Miss LOCKWOOD. We have only State nurses, you see, who do not live in that community. But we can not get the people even to furnish centers.

Doctor NOBLE. Let me send one of my workers over to show you how we do it.

Miss LOCKWOOD. I wish you would.

Doctor STADTMULLER. I will tell you how we have maintained them in California. We never open a center unless the community will assume financial responsibility. If we have to put in a nurse we will pay only part of that nurse's salary, or else we put in whole-time nurses and have the community pay the transportation. We make the community responsible from the beginning for a certain amount of the financial upkeep of that nurse. We put a State nurse in and contribute only a part of her salary, deriving the rest from Red Cross, tubercular, or school funds, or a combination of all of them, with the understanding that the State part is going on for only one year. We usually do continue beyond the end of the year somewhat, but it is understood at the beginning that the State share of the responsibility will terminate at the end of a year, and we do not put a nurse into a community unwilling to meet us half way.

Miss LOCKWOOD. Some organizations did that with us, but when they were through with their program, the program ceased. The

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child-welfare work in Delaware had a very large appropriation in the first place, and we furnished too much, I think; and since the appropriation has been cut we are still asked to furnish everything.

The CHAIRMAN. I wish to hear from Doctor Allen, of Wisconsin. Doctor Allen is a new director, and she has some new plans for making the centers a community responsibility.

Doctor ALLEN. For two years I had the permanent centers throughout the State of Wisconsin. We hold the conferences in them only once a month. We organized first in 16 counties with the intention of staying one year; and at the end of that year the people were expected to maintain these centers themselves. That worked out fairly well.

We have six centers conducted by local nurses who are either county nurses or industrial nurses. The examinations are made by local physicians or by physicians hired by the State and also by part-time physicians paid by the local people. In the little town of Fennimore (which has 760 inhabitants, I think) they even paid the transportation from Madison and paid our physicians $15 a day. They have carried their center themselves for two years at this rate, partly by private subscription and partly by Red Cross funds. Our centers have been very well patronized; the mothers have been very well satisfied. We have overcome a great deal of opposition from our physicians, after we have been there long enough for them to know that we were sending work to them instead of taking it away.

When Doctor Haines visited us in October she felt, as I have felt for two years, that we were not leading the communities directly enough toward the ultimate assuming of local responsibility. She suggested that the State try to carry at least part of the traveling expenses of the physician by having an extra part-time physician on the staff and letting the localities that wished to do so hire this physician; and if they were having any local opposition they should hire their own physician for carrying on their own permanent centers. So we tried one center under local men with the local service, but the plan did not work well. The county nurse wrote to ask if I could not do something for them, and finally I told her we would furnish her a physician for $15 a day if she wished, while we were up in that same locality. She accepted the suggestion so quickly that I am minus a physician now and must hunt up another. In the last month that I have offered this we have had two centers take advantage of it, paying $15 a day out of local funds for a physician to spend one day a month with them.

Two other places are just waiting until I can find some other physician to put in for them. Now, we are carrying the work on with our regular State physician. We are going up into the neighborhood of Wisconsin Rapids to conduct conferences there in three centers a week, and we have just given Wisconsin Rapids the opportunity of hiring this physician. We are also going clear up into the northern part of the State to Rhinelander, where they could not afford to pay all our travel expenses; and we have incorporated their center into our regular itinerary. They are paying $15 a day to the physician. Our problem is not to get the $15 raised; that is done through many fraternal and other organizations and through the women's clubs; but our problem is to get a part-time physician to fill the place.

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The nursing service is carried on almost exclusively through a county or industrial nurse. We have very few State nurses, and I have only two maternity and infancy nurses.

Doctor Haines, when you asked me how many centers we had I mentioned only the one carried on as the result of our permanent center work; there are about 45 or 50 other centers, but we are not responsible for very many of those. Of course cities like Milwaukee, Racine, and Kenosha are carrying out their own under their own local physicians.

The little center at Janesville has been very successful. It is staffed entirely by physicians chosen by the community through the medical society.

Mrs. Mathews. I wish to speak about the itinerant traveling clinic which we have. We think it is too bad if anyone who comes to Colorado does not see our clinic because we have such a wonderful one. We have a group of 12 traveling now. It has grown since I was here two years ago and told you all about it.

We charge the community $50 for putting on the clinic, and they believe they are getting something very valuable for it. We go into a community with a pediatrician to whom we pay $50 a day for the work. We have our two nurses, a representative of the State board of health, the head of the State tuberculosis association, and a dentist who is paid and sent in by the State dental association. A gynecologist is sent in by the State medical association, and we have the director of the State psychopathic hospital and his psychologist, so that we have a full, well-rounded clinic. The tuberculosis people handle the weighing and measuring. Then the local physician makes the entire physical examination, and next the child is examined by a pediatrician. Mental cases and children with temper tantrums or anything of that kind are referred to a psychiatrist. We have several psychiatrists, but they can not handle more than 10 cases a day. We find that if we are examining about 100 children a day just about 10 per cent of these children will have to be referred to the psychiatrist. It is a pity though, by the way, that we have to send those children to the psychiatrist in order to get the mother there. [Laughter.]

We never enter a community without the full cooperation of the local physician. We send a bulletin to all the physicians, and if they can not come to the clinic, if they are not working with us, we do not enter their community. The whole idea is that we are there to help that physician; we are not there to establish maternity and infancy work on the face of it at all; that will come later. Then that physician is going on with the work after he sees the need and after it is established.

We do not go in without a corps of 20 local women who will supervise and take care of the work at that time, receiving their instructions as to the carrying on of the permanent clinic. Usually we get all the nurses that we can, including the married nurses in the community, to work with us. I think the whole success of our traveling clinics has been due to the fact that a month from the day after our traveling clinic has gone our return nurse enters that same community and checks up on every child who was brought into the clinic. She finds out the number of corrections made on

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teeth, throat, and eyes, and the entire amount of work that has been done in that one month. It would interest you to know the number of corrections made. In Leadville, for instance, we examined 245 children; and when we went back a month later 117 had had teeth corrections, there were 22 tonsillectomies, 3 circumcisions, 2 herniotomies, besides orthopedic cases, and 2 psychopathic cases. Of course the physicians felt there was something really worth while because they performed the operations. No child was taken outside that community unless the physicians requested it. If they did request it for special cases, such as orthopedic cases, we furnished transportation through the courtesy of our railroads back and forth to the big general hospitals. So we were working with the physician in the community.

We have these cards [indicating] and the idea is that when our specialists go into a community and find something wrong with the eye, or whatever it may be, they put down just "plus, double plus, three plus," after the word "eye," etc. When the local physician sees that card he knows there is something wrong with the eye, the throat, the heart, or whatever it may be; but the mother does not know. She has to go to her family physician, the local man, to learn what that finding is; so it really goes back to him in the long run. The very last part of the card is the historical side on which we take as complete a family history as we can possibly get of the individual taking the child to the clinic. We accept no child at the clinic that is not accompanied by his parents—and it is not only infant and maternity work, but it is also infancy and paternity work, because the fathers come too. The father is almost as much to blame as the mother, you know, if the child is not in good health. It takes the time of four women to get the history while one pediatrician is busy. Our histories are as complete as we can make them, so when the child gets to the head physician (the pediatrician) he looks on the chart and sees exactly what that child had for breakfast, how much milk he drinks, how much sleep he gets, whether he has been eating pancakes and the like, and he does not need to question the mother at all. He can put in his whole time with the examination because the history of the child has given him some background, you see. So when he advises tonsillectomy he advises it on the idea that there is a tonsil trouble in the family—the father or mother had tonsillitis—here is the history; or the father had tonsil trouble, and the mother had throat trouble—something of that kind—all in the family history.

When we leave a community the entire summary of the investigation and the diagnosis of the findings are sent to the local physician.

The Chairman. We are glad to hear all of this good news about Colorado. I want to say just one word, however, in defense of the provisions that appear in the standards for the examination of children. That is supposed to take care of the baby from the time it is born until it enters school. You understand that that was the proof that was given you this morning. It will not be nearly so voluminous when you get the printed form. I am sorry more could not have been said about it. Doctor Eliot, who is on that committee, is here; but I think she is not in the room.

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TUESDAY, JANUARY 12—AFTERNOON SESSION

MRS. ELEANOR T. MARSH, SPECIALIST IN PUBLIC INFORMATION, EDITORIAL DIVISION, CHILDREN'S BUREAU, PRESIDING

The CHAIRMAN. Although most of the afternoon session is to be devoted to discussion of publicity and exhibits the first person on the afternoon program is Dr. William H. Davis, chief statistician for vital statistics of the Bureau of the Census, who will speak on birth-registration problems. I am very glad to introduce Doctor Davis.

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STIMULATION OF BIRTH REGISTRATION

By William H. Davis, M. D., Chief Statistician for Vital Statistics, Bureau of the Census, United States Department of Commerce

To obtain good registration of births, two things are essential: Good registration laws and good enforcement of these laws. The need of good registration laws has already been recognized by nearly all the States, and good laws based upon the model law have already been enacted. But the second essential, good enforcement of these laws, is lacking to-day in many States. No one remedy can be recommended, for the causes of the nonenforcement differ in the various States. But let us discuss briefly some of the difficulties which exist and attempt to find remedies. First of all, to narrow the field of discussion, let us assume that the State board of health and the State registrar are alive to the desirability of securing good birth registration and are willing to do their best to enforce the law. Let us assume also that they know how the registration machinery should be run, both in the central office and throughout the State.

Then there remain four main questions for consideration:

1. Is the difficulty a matter of inadequate appropriations so that the State registrar does not have enough clerical help to ferret out the weak spots, or perhaps after ferreting them out has no field agent to investigate further and to remedy the situation?
2. Is the difficulty a matter of carelessness on the part of the physicians, midwives, and parents?
3. Is it a matter simply of indifference or perhaps actual hostility on the part of the physicians, midwives, and parents?
4. Is the State registrar following too lenient a policy in delaying prosecutions for a long time in the hope that persuasion will prove effective?

Considering first the matter of expense and adequate appropriations: In this country the local registrar outside of the large cities is paid, as a rule, 25 cents for each certificate of birth or death which he receives and transmits to the State registrar. In England the local registrar usually receives a little more than 1 shilling for similar service; so this initial expense to the taxpayer is about the same in both countries. Twenty-five cents seems to be a reasonable fee for the local registrars. Certainly it is not excessive, as is clearly shown by the extreme difficulty which some State registrars have in finding responsible individuals willing to undertake the work. Unless a State is willing to pay such a reasonable price for the collection of its vital data no continuous plan of registration is feasible. The State pride of individuals may be appealed to effectively for limited drives, but it is too much to expect anyone to serve as a local registrar for a prolonged period of time without pay. Of course there must be other funds to run the State registrar's office, to bind the returns, to provide fireproof vaults, to print necessary blanks and reports.

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To cover all these additional items a tentative estimate has been made of 10 cents per certificate. The remedy for inadequate appropriations is primarily publicity—publicity which will impress upon everyone concerned the value of the work being done and the very much greater value of the work which could be done with larger appropriations.

Considering next the matter of carelessness on the part of the physicians, midwives, and parents: These persons should first be impressed with the value of registration, and then they should be shown that they individually are important cogs in the registration machinery provided for by law.

If the difficulty seems to be indifference or actual opposition on the part of the physicians, midwives, and parents, it would be well at first to follow a policy of patience until the registrar has abundant proof that he is not dealing simply with carelessness. If, however, he should be once in possession of such proof he should have prosecutions made without delay. Otherwise the registration official will lose everyone's respect, and registration itself will certainly not improve. But let us go into a little more detail regarding this matter of prosecutions, and at the same time let us consider the question already proposed as item 3: Is the State registrar following too lenient a policy in delaying prosecutions for a long time in the hope that persuasion will prove effective? Surely care should be taken not to prosecute a physician who usually reports his births well but who in the rush of business has simply forgotten to make a report. The prosecution of such a physician would be regarded as persecution, and it would do much more harm than good. On the other hand, there ought to be by this time almost everywhere a strong public opinion in favor of prosecuting the physician who refuses to report births or who is so careless that he fails to report many.

Still there is much to be said in favor of a lenient policy in some sections. There is much truth in the old saying that you can trap more flies with molasses than with vinegar. Moreover, the good fellowship which exists everywhere in the medical profession makes it extremely repugnant for one medical man to prosecute another, especially if there is any alternative. It is conceivable also that the State registrar may know the political situation so well that he realizes the great risk there would be to the health appropriation bills if certain prosecutions were made. Notwithstanding the fact that State officials upon taking office swear to perform the duties of their positions, many things are left to the good judgment and common sense of these officials; and the proper course to pursue in this matter of prosecutions is one of them. Yet officials who constantly neglect to make prosecutions where they should be made must accept the blame for the poor registration in their States and must not expect to shift the blame to the shoulders of others.

Ordinarily the proper course would seem to be persuasion first and then prosecution for any who still remain indifferent or who defy the law and refuse to report. But there is no denying the fact that there is probably less uniformity in the various State offices in regard to prosecutions than in regard to any other feature of birth registration; and there is no denying the fact also that this absence

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of a fairly uniform firm policy regarding prosecutions is one of the greatest drawbacks to good registration to-day.

There seems to be no direct remedy for the unfortunate situation; nevertheless there does exist an indirect remedy. As you know, the birth registration law in many States requires the attending physician to report a birth within 10 days. The reason for a short time limit is obvious as the attending physician is in close touch with the family for about 10 days and is therefore presumably best able at that time to gather the facts. Certain legal cases came up in Pennsylvania in which the birth records involved were declared void because the birth reports filed by the attending physicians were not sent in within the 10-day period required by law. To preserve the legal rights of the child involved in such a case as this, the State registrar, with the indorsement of the attorney general of the State of Pennsylvania evolved a plan to require the physician to make out an affidavit giving the reason for the delay in filing the original certificate and swearing that the facts therein stated were true and correct. If the physician objected to filing the affidavit, he was given the alternative of going into court. Let me read to you a copy of this affidavit:

PENNSYLVANIA STATE DEPARTMENT OF HEALTH

BUREAU OF VITAL STATISTICS

STATE OF PENNSYLVANIA,
County of----------ss:

Personally appeared before me--------------------------------, who being duly {sworn / affirmed} according to law, doth depose and say that the facts within his knowledge appearing upon the birth certificate of------------------ born in {township / borough} of------------------ county of---------------on the ------day of---------------, 19--, are true and correct; that the other facts appearing thereon are correctly recorded from information supplied to him and that the reason for failing to file same within ten days of the date of birth as required by the registration law was--------------------------------------
----
-------------------------------------[SEAL].

Affirmed
Sworn to and subscribed before me this------ day of --------------- 19--.

This affidavit must be taken before an alderman, justice of the peace, notary public or any other person competent to administer oaths.

Each affidavit costs the physician about 50 cents, whereas a conviction in court might cost him from $50 to $100. Consequently these affidavits not only improve the legal records for the child registered but also serve as a mild form of prosecution. As an affidavit is required for every case for which a report was not sent in within the legal time limit the physicians and midwives of the State are kept constantly on the alert to make their birth reports promptly. In fact, this simple affidavit to protect the rights of the child has done wonders in Pennsylvania toward improving birth registration.

Real ingenuity has been displayed in the application of this affidavit plan in Pennsylvania to secure better birth registration. Let us

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suppose that the State registrar has evidence of six unreported cases against one physician. Instead of immediately demanding birth reports and affidavits for all six cases the State registrar submits two of them to the physician, stating that he has evidence of other unreported births also. Thereupon the physician acknowledges his error, sends in the reports and affidavits, and says that he will supply the reports for the other cases if the State registrar will send him the names. But the State registrar does not send these names to the physician. He tells him it is necessary for the physician himself to go back over his books for the past year and send in all the unreported births he can find. In this way the State registrar has been able to unearth scores of births of which he had no knowledge whatever.

No law can be enforced unless some penalty is provided for its infraction, and this affidavit plan offers a minor form of penalty which can be exacted at the option of the State official, instead of the more severe penalty provided for in the registration law. I have dwelt upon this particular remedy at some length because I believe it is one of great promise.

Many excellent devices have been and are being used to stimulate birth registration, but I fancy you are so familiar with them that it will suffice to mention merely a few such as baby books, an attractive certificate of birth to each mother of a newborn child, brightly colored posters in the post offices telling why births should be registered, health trains, health automobiles, lecture campaigns with motion pictures, well-advertised tests of birth registration by mothers' clubs, the Children's Bureau, and the Bureau of the Census.

To-day 32 States send out to each mother of a newborn infant some form of notice that the birth record of her child is on file. This notice or certificate has proved of value, and its use should be continued. Of the 15 States now outside the birth-registration area there are 8 (Arkansas, Colorado, Idaho, New Mexico, Nevada, Oklahoma, South Carolina, and Texas) that do not send out certificates.

Good evidence has been received recently that one of the most effective ways of stimulating birth registration is for the State registrar to send periodically a letter to each physician, giving him the number of births with which he has been credited so far for the current year and asking him to verify the number. Naturally every physician wishes to receive full credit so he goes over his records.

The Bureau of the Census is planning to ask each State registrar for a monthly tabulation, by counties, of deaths of infants under 1 year of age for whom birth certificates are on file. It is estimated that in a State with a population of 1,000,000 such a continuous test of birth registration will require the service of one clerk one and one-half days each month; but what an excellent searchlight will be focused on registration conditions in every corner of every State. The State officials will know to a nicety just where the weak spots are month by month, and they will know whether their drives for better registration in a given locality show results or not; and the Bureau of the Census, which must insist that good registration be maintained, will be in a much better position than at present to follow registration conditions constantly.

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To summarize briefly: To stimulate birth registration you must—

(1) Make plain to all that good birth registration can be accomplished only through a good registration machine. You must have a good State registrar and a sufficient number of clerks to carry on the work so that at all times the central office will know where the weak spots of registration are and will promptly attempt to remedy the defects.

(2) Sell the idea of better registration to the physicians. Sell the idea of better registration to the chambers of commerce. Sell the idea of better registration to the general public. Sell the idea of better registration to the individual mothers.

(3) Let the women's clubs and the chambers of commerce which are really in favor of good registration of births not rest content with a passive indorsement of birth registration. Let them insist on better registration. Let them insist that the State registrar compile and publish monthly the percentage of deaths of infants under 1 year of age for which there were no corresponding birth certificates on file. Let them insist on a reasonable enforcement of the law. Let them stand solidly behind the State officials when they prosecute physicians or midwives who have persistently and flagrantly refused to report births.

In closing, let me sketch briefly the outlook of the present campaign to enlarge the birth-registration area: With 33 States already in the area and only 4 with unsatisfactory laws (Nevada, South Dakota, Georgia, and Texas) there remain 11 which should be ready soon to enter the area if active cooperation with the campaigners is maintained. This outlook is by no means too optimistic. The State officials are alive, the Children's Bureau and the Bureau of the Census are ready to do all they can, the American Child Health Association, the health section of the Rockefeller Foundation, and the Tuberculosis Association are all assisting. The vital-statistics section of the American Public Health Association recently appointed a committee to do everything possible to make the registration area complete before 1930, and recently the chairman of this committee, Doctor Dublin, sent word that the chambers of commerce were ready to help. So with this general indorsement from all sides there should be no question regarding the outcome.

Let me repeat once more the slogan and appeal: Every State in the registration area before 1930. Your help needed.

DISCUSSION

Doctor Schweitzer. In Indiana the law requires registration within 36 hours, and the law also states that a physician who fails to report births within that time can not legally collect his fee for attending a maternity case.

Doctor Barnett. I should like to make a correction about sending out formal notification to each mother in Texas whose child is registered. That is done by the bureau of child hygiene, not by the statistical division.

The Chairman. Doctor Davis, would you like to reply to any of these suggestions or to say anything more?

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Doctor Davis. I think not. I am very glad to hear this statement from Indiana. I did not know about that. The Texas situation I did not know about. Our records show that Texas was not sending them out. I am glad to hear that the work is being done in this way.

The Chairman. The next part of the afternoon session is to be devoted to a discussion of publicity and exhibit methods. When Doctor Haines asked me to preside during this afternoon's meeting I felt that it was both a very great honor and a very unusual experience. A great honor because the publicity director, press agent, or whatever he may be called, is very much in the position of the old-fashioned child; he is seldom seen and almost never heard. [Laughter.] His job is to get other people into the papers but to keep himself out, and so it is quite unusual for a press agent or publicity agent to speak in public. It is also an honor because publicity is comparatively a new profession. I don't mean to say that nobody has known anything about publicity until the twentieth century. That certainly is not true. All great men and women who have appealed to the imagination of people and left their imprint on history have known the secret of personal publicity, but as a profession it is comparatively new. This is undoubtedly because our audience to-day is so much greater than it ever has been before and so much more complex. It is also true because the various new techniques have been developed about which the publicity agent must know something.

Of course in the maternity and infancy program also publicity is an essential part. The program would fail if it did not succeed in reaching individual doctors, nurses, mothers, fathers, and caretakers of children, and succeed not only in reaching them but succeed in making them do the sort of things which it is known will make for maternal and child betterment.

The subject seems to divide itself rather logically into two parts—first of all, the appeal to the professional group; and second, the appeal to the general public. Doctor Alice Weld Tallant, a member of the obstetrical staff of Philadelphia Hospital, will discuss publicity from the professional-group point of view.

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INFORMING THE MEDICAL PROFESSION IN REGARD TO MATERNAL AND CHILD WELFARE WORK

By Alice Weld Tallant, M. D., Gynecologist and Obstetrician, Philadelphia General Hospital

I take it for granted that we have come together here united in the desire to promote the health of mothers and children, that we know our country has lagged behind in that work, and that we are all going to do our best to bring home to everyone the need for improvement.

My part in the afternoon's discussion is how best to bring this matter before the medical profession, and I believe the nursing profession as well, although I must say that in most of the discussions it seems to me to be taken for granted that it is the nurses who are bringing it before the physicians. I have seldom heard that nurses were delinquent; and I really have not thought that I need to present much on that line. Also I think Miss Van Blarcom spoke yesterday about methods of making appeals to nurses.

Now, how are we to interest the members of the medical profession? After all, there is no doubt that they are really spending their lives for the health of the communities in which they live, and it would seem to be the logical thing for them to welcome any agencies such as health organizations and Children's Bureau representatives, and to work hand in hand with them. Why then do we find so many physicians are apparently lacking in interest or even opposed to the extension of health work?

I suppose the simplest and most practical reasons are: First, that these physicians do not fully realize that the conditions of the communities in which they live are bad, or perhaps they have grown so accustomed to seeing bad conditions that they have become discouraged and do not feel that much can be done to better them. Or—and this is a very practical point—when they see organizations coming in to act in their field, they fear that it is only a movement to interfere with their practice and their means of earning a livelihood.

Now, it is the part of the health organization to lay before the physician in unmistakable terms the disgrace of our maternal-mortality reports and to urge him to do his utmost toward improving conditions. But it is by no means advisable for these agencies to go to him and say, "You are a disgrace, and we want to improve you," because that does not help matters at all. It is always much easier to feel that the disgrace belongs to somebody else. We are more likely to win the physician to our cause if we say, "Conditions are bad here; we know that it is not your fault and that you wish to help. You are doing the best you can, but do help us to see that things are improved."

It is also of prime importance to the Children's Bureau and the organizations of the States to convince medical men that through these organizations the aims and work of physicians can be furthered.

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I believe that this can be done first by finding out in what way physicians need help, and then by showing them that these organizations can help them in just that particular way. More than that, you must bring to them a realization that a want which they never knew existed is waiting to be fulfilled. The basic principle of the successful advertising of any commodity is to create a demand for it.

There is a story too good not to be true, that a certain well-known remedy came into being as the result of a bet that through advertising a demand could be created for something which did not exist. The winner of the wager had such a triumphant and unexpected success that he was forced to manufacture something. He put away a tidy sum as the result, and the product is still being sold.

The Children's Bureau and also the State organizations have wisely limited their work for the most part to the rural districts and the smaller towns. In the larger cities health activities are so many and varied that we really have to guard against overlapping rather than to bring in new agencies. For that reason perhaps the city physician might be supposed to fail to grasp the problem of the sparsely settled district. Yet I have a feeling sometimes that perhaps we really even overestimate the difficulties in comparing them with the conditions under which we work.

The points in preventive work which are probably the most stressed by the health programs to-day are: First, prenatal care for the mother; and second, the follow-up work for the babies, with all the instructions as to care and feeding included therein. I believe it is more my part to speak of prenatal care and the way to bring the necessity for it home to the physician. Work for babies has made a more popular appeal and does not need so much further emphasis. As far as prenatal care is concerned, if it is simply a question of putting the subject before the profession, preaching it, I am not sure that we shall get ahead very fast. I do not know how it is in the rural communities, but in most places where I have been the physicians seem to be pretty well fed up—to use that overworked term—on the subject of prenatal care. The younger physicians have been duly trained, duly instructed along this line in the medical colleges and hospitals, or at least in many of them. I believe comparatively few of even the older physicians entirely ignore prenatal care; but of course there are some who do, and to these we must appeal in some way. Perhaps as good a method as any is to bring forward a few impressive and unimpeachable statistics on maternal mortality in this country and its causes, and then trace clearly the relation between these sad figures and the lack of proper prenatal care. Few people can remain callous before such a presentation of the facts. After all, we physicians, even the worst of us, do not really wish to see our patients die; and I think that almost any of us would welcome aid in prolonging their lives.

If it is further suggested to these physicians that their help will be needed and greatly valued in the fight to improve conditions, I think many will do their best to respond to the appeal, because, after all, the first instinct of most people is to help anyone who is in trouble. If a person stumbles and falls in the street, everyone runs to his assistance, and I think criminals are just as likely as philanthropists to be among such would-be helpers.

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The physicians in the country districts may be fully alive to the importance of prenatal care yet unable to live up to their own standards because of the great distances which must be covered in their practice. Moreover, on account of the small fees paid for confinement cases, they may be actually unable to afford to give the requisite amount of care to their patients. I know that someone spoke this morning about fees of $200, $300, $500, $1,000, but I do not think that these large fees are charged so frequently as might be suggested by that paper.

This matter of small fees is not limited to the rural community; it is a problem in the cities too. The sum of $25 to $35 seems to be the accepted fee for the earners of small wages in the cities. I know that in the Italian quarter of Philadelphia the families who are living on a small though steady income almost never expect to pay more than $25 for a confinement case. An Italian woman whom I know brought her daughter to me the other day, to see if I could get a physician for her in her approaching confinement; I said conservatively I thought I could find one for $35. She said she knew a physician who would do it for $20 but thought maybe I would know somebody nicer. I do not know whether "nicer" meant cheaper or referred to personal qualifications only.

It is perfectly true that $25 or even $35 barely pays for the confinement and aftercare of a patient. I think any of you will admit that. Just the wear and tear on the physician (or even the blowing out of a tire) will completely use up any profit there is in the case. When we consider the number of visits that are made $25 or $35 is really not a large sum; and when the patients are unable—or unwilling—to pay extra for prenatal visits we really must not blame too severely the physicians who seem to grow lax in their care of pregnant women. The most skilled and conscientious obstetrician must falter before the utter apathy and even antagonism of a public who see in prenatal visits only a waste of time and a physician's device for extracting more money. I think that by gaining the interest of the community we shall indirectly make the physicians see the value of prenatal care.

I remember a paper that was presented before the Child Hygiene Association about five years ago by Dr. Lottie Bigler of Dakota, a former student of mine. In it she set forth in much picturesque detail the discouragements and difficulties besetting her attempts to do conscientious obstetrical practice, difficulties which were due not at all to the limitations of the pocketbook of the patients but to their ignorance and prejudice. If the Children's Bureau and other health agencies will put forth continued efforts until people realize the value of proper obstetrical care to the point of demanding it and paying for it, they will undoubtedly help the conscientious physician to maintain his standard and will bring the careless one up to the mark.

Many a physician would welcome the establishment of a clinic under the care of an outside physician, with nurses to visit in the homes, which would help him in the oversight of his cases and would report to him any complications—always providing that no one in that clinic casts reflections on his methods or weans his patients away from him. Right here is a difficulty which is hard to combat.

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Quite unintentionally the health clinics may give the impression that they are doing work in which the physician is not interested and that he is to be consulted only in case of sickness; whereas many of the general practitioners of the present day really care a great deal for preventive medicine and object to having the opportunity for it taken from them. I do not know just how this problem is to be met, but I trust that you all have the solution. If the health authorities could go to the physician with a clear-cut plan for such a clinic as I have mentioned and the assurance of their desire to help him in obtaining the best care for his patients, they should certainly stand a fair chance of winning his support.

Doctor Knox remarked that the health officers could urge upon communities the importance of routine examinations by their own physicians. I think that if these physicians felt that the nurses really would stir up their patients to come in for prenatal visits they would be much more sympathetic as to the importance of prenatal care. If we must appeal to the mercenary side let the representatives of the health organizations take with them some of those testimonials that we heard about this morning, which tell of the increase in the physicians' practice after the health demonstrations and clinics. That would be at any rate a practical appeal.

Moreover, suggestions from the profession should be sought and welcomed. It is always flattering to be asked for advice and suggestions. One feels that after all he must be worth more than he had thought. The representatives of the organizations and the bureau could do as Doctor Noble described this morning—visit the different physicians, go over matters with them, and show them just what is being done and how they can cooperate. Or small group meetings could be held, such as the smaller county medical societies, or groups of physicians in the different communities. Frank, informal discussions, with no long speeches, on such simple topics as: What the health organization can do for you; what you think it should do; and how you can help; the presentation of mortality records and other data, followed by requests for advice from those present as to ways of reducing mortality and improving untoward conditions—all of these ways are very practical. Comparisons, no matter how odious, could be made between counties and States. In this way the varying problems of the different localities could be attacked more successfully, for nothing is more fatal than to try to force a uniform plan of action, however well conceived, upon communities which differ widely in regard to the situation under which they must carry out their problems. Races, nationalities, industry, occupations, wages, conditions of transportation—all these and many other things enter into the calculations.

In some places, as was said this morning, regional conferences might be the best thing for the community; in others, itinerant clinics; in still others, permanent clinics. We shall have to work out with the physicians in some way the best methods for the given place. And if meetings of small groups are not practicable, then, as I said, calls can be made on the individual physicians, so as to talk the matter over informally, get their views, and win their friendly interest.

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From my point of view the questionnaire would be the last resource to fall back on. That may be because I have an inherent objection to filling out blanks. I have filled out so many that sometimes it seems to me I could not bear to see another; and I think the busy physician, overburdened with work, sometimes feels that the questionnaire is the last straw.

To repeat what you all know so well that it is almost idle to say it again, much can be gained for health work by making friends of the individual physician and small medical society in this informal way. I do not believe that the publicity obtained by bringing up the subject at large meetings is as helpful—for instance, at such meetings as those of the American Medical Association. The papers at those gatherings are many, the time is short, free discussion is limited, and those disadvantages largely outweigh the gain in the numbers who might be reached at a given meeting. Furthermore, I do not know whether it is your experience, but it has certainly impressed me that in State and national medical society meetings the tendency is for the physicians to go to the meeting where the most sensational, or let us say the most exciting, thing is being discussed. I think it starts with the student. I know that when I was teaching students the lecture which seemed to bring forth the greatest enthusiasm was the one which to me was absolutely unpractical; namely, the one on monstrosities. [Laughter.] The students would look at every two-headed baby; whereas I always had great difficulty in impressing them with the fine points of the normal placenta, something much more valuable for them to know. The rapt attention with which they walked around those jars of monstrosities always remains in my mind.

Of course this does not mean that we should not try to get such an organization as the American Medical Association interested. But I think we must present clearly the plain, cold facts with "before and after" pictures. We have talked a great deal about maternal mortality, but I think we have not enough figures yet—at least, I have not seen many—to show the maternal and infant mortality before good prenatal care went into effect, and after. We have these figures in hospitals, but we can not judge by hospitals. An actual demonstration is the thing that will appeal. When the physicians in the different regions are made to feel that we are all working together in this matter and when they realize how much good comes out of the combination I think they will wish to have the subject brought up in the larger meetings. They will get it on the program because it is wanted, and they will have some strong support behind it; and then it will go.

As far as the nurses are concerned I really have no special suggestion as to the best ways of bringing the importance of prenatal care before them. Only one thing occurs to me, which perhaps may have been brought out by others. Some training schools now provide for their pupils work with patients in their homes, a few months devoted to definite instruction in home nursing. I find in Philadelphia that the nurses who have had this opportunity come out with a far greater interest in health work of all sorts and consequently with more interest in prenatal care and the care of the infant.

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And finally, "my brethren and sisteren," as the old preacher said, I should like to leave two thoughts with you. The first is: Be not weary of well-doing. And the second is: Continual dropping weareth away a stone.

The CHAIRMAN. Mr. Chenery, who is editor of Collier's Weekly and also a newspaper man, and who in connection with the Children's Year campaign learned a great deal about the subject in which we are all interested, is going to speak next.

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HOW CAN POPULAR MAGAZINES AID IN CAMPAIGNS TO REDUCE MATERNAL AND INFANT DEATH RATES?

By William L. Chenery, Editor, Collier's Weekly

I have been told I may talk quite informally. The question is, "How can popular magazines aid in campaigns to reduce infant and maternal death rates?" I will say quite honestly that the kind of aid which the popular magazine can render depends wholly on the nature of the campaign. I hope you do not mind my talking very frankly.

When I was a newspaper reporter, a cub reporter, I had it in mind that an editor could put anything he pleased in his newspaper or magazine. There is no greater illusion. The editor forms an estimate of what people will read. If he forms the correct estimate he has a successful newspaper or successful magazine; if he forms an incorrect estimate his paper or magazine goes into bankruptcy, or the potential readers stop reading it. So he is himself edited steadily and constantly by his readers.

I myself keep in mind the picture that I saw years ago when I first reported a national political convention. If you have ever seen 14,000 or 15,000 people assembled, seen different types of speakers get up in front of them, you soon appreciate that few people have the gift of arousing, seizing, and holding the attention of a large mob, and the majority have not. In a political convention the crowd is usually very intolerant. They will give any speaker a minute or two. A woman is given perhaps a little longer time. If the speaker catches the attention of the audience in that time he has a respectful and friendly hearing, often an enthusiastic hearing; if he proves tedious or talks about something that the audience is out of sympathy with, or merely not interested in, he has a listless hearing at first, then a stamping of feet, then even more extreme measures are taken, if the gentleman does not sit down. The editors are confronted by exactly the same thing except that their mistakes are revealed in red figures submitted by auditors. If you print stuff that people are not interested in, people stop reading you; and pretty soon you have very large losses to report—a thing that nobody wants. Now that is the compulsion under which every newspaper and every magazine operates. We must interest our audience; we must on the whole give nothing that will not interest an audience.

A magazine differs from a newspaper in this essentially, I think: a newspaper can appeal to several audiences, whereas a magazine has only one audience. I am told that one of the most successful publishers in the country says nothing must go into his paper that does not interest 10 per cent of the people. That means in his case that it must be of interest to 50,000 people. If you operated on any such principle in publishing a magazine you would go on the rocks.

I should say that in the national popular magazine we can not publish anything that is not prima facie of interest to 25 to 40 per

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cent of our readers. I know we print a great deal of stuff that is not so interesting, but we do not do it consciously. That is one of our mistakes.

You must then relate your campaign for the reduction of infant mortality or maternal mortality to the interest of very large groups of people. Now here is what we know about the interests of very large groups of people. It can be put into a very few words. The story of one or two or three girls and one or two or three boys, in fictional form, published in any popular magazine is assured of practically 80 to 100 per cent reader interest. Everybody who buys the magazine, whatever his views on any particular subject, will be likely to read one of those stories. I should say that the same material put in abstract form and sent out from any Governmental department could hardly hope to have more than 25 per cent reading even though it were done in the best conceivable manner. The reason for that is very simple. The thing that we are all interested in is first of all ourselves; and secondly the fortunes or misfortunes of somebody else with whom we feel a certain bond of sympathy.

Everybody is interested in individual men, individual women, individual children, and only a very few people are interested in humanity or womanhood or infancy or any other abstract term. To the extent that you can make a campaign intelligible to people through translating it into terms of individuals, to that extent it is extremely easy for any magazine or any newspaper to cooperate with you.

Mr. Siddall, the late editor of the American Magazine, put the thing very graphically once when some one asked him to publish an article about the Brooklyn Bridge. He said the Brooklyn Bridge was interesting to engineers, although it was an old story; that the only story that he knew about the Brooklyn Bridge now, or then, that would be universally interesting would be the picture of a man or woman on that bridge doing some exciting act. A picture of a man on the Brooklyn Bridge in the act of committing suicide would have 100 per cent interest. Everybody in range would look at it and almost everybody would read about it; but to the degree that you toned down the activity of the person on the bridge, or if you removed him completely, by so much you would diminish the interest in anything you wrote or published about it. Now that is one of the fundamentals upon which the popular magazines act. We attempt in practically every case to translate everything into the personal story of some individual, not because it amuses us to do that but because we know that people to whom we have to appeal in the mass will respond to that kind of stimulus only.

There is another quite different principle that some of the magazines utilize—this is particularly the women's magazines rather than the men's magazines, although to some extent it operates there. In addition to the interest in stories as such, which is, of course, the fictional appeal, and the interest in the dramatization of any kind of story—even a story of abstract principles—people are interested in things they can use themselves or things that have some relationship to their own lives.

From the magazine-publicity point of view it seems to me that in considering infant-mortality or maternal-mortality campaigns you

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have to translate the material into such shape that the average person could see something of utility in it for himself. That is perhaps a base view of the reading public, but I believe that it is not a wholly incorrect view. You will find that the women's magazines especially have all sorts of departments in which they render "service," so called. They get experts of one kind and another who give advice on all kinds of subjects. So far as campaigns as to women and children can be translated into these columns of course they will have a ready acceptance in that type of magazine. Of course they will not have anything like as wide a reading interest as they would if you put them in another way.

There is one other thing to consider: If through statistical studies or any other way you discover some new principle or general truth which has genuine elements of novelty in it, that, of course, has profound influence. It is not referred to every day, but it operates through the magazines and colors them. It determines social policies.

The sort of thing that I have in mind is the conclusions arrived at by Miss Lathrop's series of mortality studies made during the early years of the Children's Bureau. A number of conclusions were outstanding, but the thing that always appealed to me most strongly was the fact that in some way poverty seemed to have a universal relationship with infant mortality; that if people were of a certain income group a certain number of children died; if they were of another income group another number of children died; that as you rose in the scale of prosperity the chance of life was better. Now that is one of these big, statesmanlike conclusions which, of course, influence everybody; and to the extent that you have them, of course you have publicity of primary importance.

Before you think that I have painted too contemptible a picture of our readers and of humanity in general I should like to ask you just to think back over the news of last year. There were two stories that stand out in my mind as peculiarly significant and revealing. You probably remember that in Kentucky a mountaineer named Floyd Collins was caught in a cave which he endeavored unsuccessfully to explore. For a day or two this was a column story in one or two papers. Pretty soon every newspaper in the country began to print it on the first page. They had one page, two pages, even 16 to 20 columns about this man. You had in that news story all the interest of the most successful novel. You had the picture of a man in danger and imminent jeopardy of death and always the possibility of saving him, although he finally died. There was the most acute suspense, and everybody in the country was interested in it. The papers had no choice about printing it. If they had refused to do it their readers would have demanded that they do it, or else they would have gone to other papers that did print it.

At exactly the same time that Collins was dying in that cave a large group of coal miners in Indiana, I think, were entombed. They died in a day or two. The story that related their tragedy was perhaps a half-column the first day, the second day perhaps an inch, and the third day it completely disappeared. Nobody was especially interested in them, in their fate, in their catastrophe. There was no class distinction between them. Floyd Collins was himself of the coal-miner group, but you had in one case a vivid

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personal story. Everybody knew the man, everybody was moved by the possibility of escape. In other words, you had suspense. In the other case there was no suspense, consequently there was no interest.

Now that, as we in the magazines and newspapers have discovered, is the way the popular mind operates. I do not say "popular" contemptuously; it is the way all our minds operate. That is what we are like, and to the extent that we can help in these campaigns we have got to recognize what we are. The campaigns that newspapers and magazines really succeed in putting over are the campaigns that they regard it as a great privilege to cooperate in. They regard it as a privilege only if they know that the interest in the thing is so great that they will at least keep up their circulation by cooperating in it.

These are fairly hard tests for a body of people who are constrained by scientific methods and who have—as I used to have—a very proper scorn for popularization; and yet they are vital tests for successful publicity.

Mr. Slosson, of Science Service, said the other day in a speech that he thought if a plebiscite were taken a very considerable majority of the people would be found to favor the view that the world is flat. I do not know whether that is true or not, but I think a pretty good case could be made for it. And the reason is, if it is true, that people who know have had to endure so much contempt from people who do not know. As a consequence they would not bother to translate their conclusions into terms understandable and interesting to the great public. A democracy can not operate on that basis. A number of us have been concerned at what is called the rise of ignorance. In my judgment the reason is that there was nothing else to take its place. We have assumed that a few people could put over good work, and that as long as the things were for the benefit of the great majority the great majority would swallow them. But the great majority will not swallow them; and often they are very resentful of things that they do not understand, however beneficial they may be.

So it seems to me that there is a serious obligation to undertake, so far as is compatible with the ends of the campaign, to translate your material into the kind of words, language, and stories which the magazines and newspapers have discovered will arouse and hold the attention of the general public, who must be influenced in any campaign if that campaign is to succeed.

The Chairman. In 1921 there was started in Washington a news service which was intended to take scientific facts and material to the newspapers in just the popular fashion that Mr. Chenery has been speaking of. This service is connected with the National Research Council, and the managing editor is Mr. Watson Davis, who will tell us something of their success in their work and something of what they have learned about furnishing the newspapers with popularized material on scientific subjects.

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SCIENCE AND THE NEWSPAPERS—INFORMING THE PUBLIC IN REGARD TO MATERNAL AND INFANT HYGIENE

By Watson Davis, Managing Editor, Science Service

I wish that Doctor Slosson could have been here himself to talk to you, because most of the inspiration of Science Service has come from him.

It is a wonderful job you have. The fundamental facts with regard to the way in which the ordinary person looks at your job and my job, that of telling people about what is being done in the field of scientific research and medicine, in order that they may live better and happier, have been very well summarized by Mr. Chenery. There are certain things, however, that no magazine nor syndicate such as ours can possibly do. There are things that must remain the function of the local daily newspaper, and it is in the contact with the local daily newspaper that the really interesting publicity work of the maternity and child hygiene and care movement can arise.

It seems to me that if I were, as I may some day be, in the position of running a local paper—it is a good deal of fun, a lot of work—I should like to get hold of a reporter who is interested in the job that you are doing. This reporter would necessarily know how to write, and I would tell him to go down to the hospitals, to your clinics, to your centers and keep in touch with you. I would give him the assignment of telling the human interest stories that are continually reverberating through your work, just as they do in the courts. Dozens of the newspapers of the country have a court reporter who has that human touch that makes the scenes in court alive for the reader. There is no reason why it can not be done in your child-hygiene work. Yours is a happier work, it has a much better light to it; it has not the shade of trouble that is cast over the courts and the police stations.

The fact that the ordinary person knows so little about the reason why the body functions as it does—and it is amazing how little he really does know—would only make more interesting the material that this specialist in human emotion would produce for the newspapers. And it seems to me that without even the initiative coming from the newspaper editor it might be possible through cooperation with the individual reporters that you come in contact with, to get one or two of them started locally into doing just that sort of thing.

Most of the propaganda—the publicity—I hate to use the word "propaganda," but that is what it is; it is a word that has been dragged in the mud a good deal—most of the publicity for the work that you are doing can best be accomplished by personal contact after all, by feeding interesting things to the competent reporters who do exist on newspapers.

In our work in Science Service, and the work of the other press associations, which I am glad to say are now taking a much more vital interest than formerly in reporting the progress of science and

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medicine, we must naturally, from the nature of our work and the geographically large area we cover, be confined to providing background material. We can put out the story of those great fundamental laws which Mr. Chenery mentioned, but it is very difficult for us to report, as should be reported and could be reported, the arrival of triplets, for instance. I think every arrival of triplets in any city would be a good story; there is no reason why it should not be. Then if you could get some modern sob sister to work with you it would be quite possible to have the mother of the triplets write a story on how she takes care of them or how she would like to take care of them. You have all the human interest there for a wonderful newspaper story, and there is no reason why the articles should not do a great deal of good. The probability is that 90 per cent of the people would read that story, whereas perhaps 10 per cent would read the cold, everyday hard facts about child care which are put into the usual textbook style.

As I said, the function of the syndicate is to provide the background for local news and to cover news of importance no matter where read, be it Hongkong or Oshkosh. It is very hard to get the human contact, the local human contacts into our work. There is one thing, however, that can be done, although it is very difficult. That is to make the average people thrill with science as the investigators themselves do. Pasteur, for instance, was a wonderful old man—young man at the time he did his work. He " scrapped " with many; he was quite normal in his emotions and human reactions. He was not a god although a genius. He did interesting work. He made mistakes. It is the job of such national publications as syndicates have become, and as magazines are, to give the background that makes Pasteur live. To-day we can tell the wonderful story of how Doctors Dick and Dick, husband and wife, at the Leander McCormick Institute of Infectious Diseases conquered scarlet fever, and the part that others are playing in the long struggle to overcome that disease.

It is the function of national publications and organizations to get into the public consciousness the idea that in science and research there is material that can be applied to improve the public health and welfare. Then with your work locally, in smaller geographical divisions, reinforced by the direct personal appeal of articles in the local newspaper, you can finally put to practical application and effect these great general laws of science.

I do not want to talk very much about Science Service. The work is a very large amount of pleasure, really. We have established a syndicate which specializes in science. We have the happy cooperation of the National Research Council, the National Academy of Sciences, and the American Association for the Advancement of Science, and with such cooperation we do furnish material to newspapers which they are eager to get, which they wish to publish—I will not say " eager to get," because no newspaper is ever eager to be sold any material.

I want to make it clear here that we operate semicommercially, that we are not a publicity organization. A job worth doing should support itself; and if this can be put into effect in any scientific endeavor, it is the best possible arrangement. Of course the work

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must not become grossly materialistic. Science Service is a non-profit-making concern, but we sell all our material and we pay for what we use. Such a policy forces a very good practical test of our ability to operate satisfactorily and to provide what newspapers want. Our principal activity is a general news service to newspapers, in which we carry a great deal of medical and health news. I made a survey of the stories we sent out, and I was rather astonished to find that so many of them, approximately 40 per cent of them, were related to hygiene, health, and medicine. Our unconscious judgment of what should go into the service had reflected the interest that everyone has in himself, and the way in which other people operate.

We have other features—one on the weather, one on nature, another on the stars. We have a very interesting little series of baby tests prepared from a psychological standpoint that we shall offer shortly. So many individuals and libraries have become interested in our work and desire to obtain a service directly from us that we have established an unpretentious weekly magazine—The Science News Letter—and I feel confident that as we grow, and as other agencies see the need of the field in which we are operating, our work and the work of others will reinforce the excellent work that you are doing.

The Chairman. One of the very interesting State exhibits that has been set up in one of the exhibition rooms for the conference is that of Texas, and one of the unique features of that exhibit is an invisible drawing board which will make anyone an artist. Mr. A. C. Mitchell, who is illustrator for the Texas State Board of Health, is going to demonstrate for us this drawing board and the lecture with which it is used.

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INSTRUCTION BY CARTOONS AND POSTERS

By A. C. Mitchell, Illustrator, State Board of Health, Texas

I can not agree with our chairman that publicity people should not be seen and heard. My job is that of being seen and heard just as much as possible. I can hold the attention of any audience, be it school children, politicians, or physicians, and I do it scientifically. If you do not agree with me after I have finished, I want you to tell me so.

Of course, I must tell you a little bit about myself. Public health did not discover me. I discovered public health. I am a cartoonist. For a number of years I earned my living by making political cartoons. I have worked on big papers from New York to New Orleans. The last one I worked on was in New Orleans, about 15 years ago. Then the president of the Texas State Board of Health requested me to come over and do some cartoons for him, and I have had a job there ever since. When I went there I found that they were using posters for which they were paying from 50 cents to $1 apiece—a prohibitive price. Yet the need of teachers to-day is posters. We can not keep up with our orders now; I suppose we are behind anywhere from 3,000 to 4,000, always behind. We just can not keep up with them. I informed our health officer that I could print these posters very much cheaper than he could have them made by the ordinary process of printing. I did not invent, I simply used an old system of stenciling which sign painters had been using for 100 years. They block out their design on ordinary window screen, then they paint through it on the paper, wood, tin, or whatever medium they wish to use. Instead of using wire screen I build frames and stretch on them silk bolting cloth such as millers use in bolting flour. I block out with a celluloid varnish everything that I do not wish to print. By means of an ordinary rubber squeegee of the kind you see men cleaning windows with we force the color through the mesh of the cloth upon the paper. In that way we print from 500 to 800 impressions an hour. Instead of using printer's ink at $3 to $10 a pound we use ordinary house paint costing about 7 cents a pound.

If you have not already seen our exhibits in the hall here and in the other rooms I should be glad to have you notice them. When you first look at them they look as if they were made by hand, and for that reason possibly you would not pay quite as much attention to them as ordinarily; however, if you find anything in there that is not worth while we would like you to tell us about it and we will throw it out. We have the "health fairy's house," which is a health game. We print an outline of a house. The teacher tells a pathetic story about the old witch Ignorance who has burned the health fairy's house down. The health fairy wishes to enlist the help of the school children to rebuild her house; and by observing the ordi-

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nary health rules (brushing the teeth in the morning, eating cereal, drinking sweet milk) they are allowed to color a stone or color a shingle, and in that way they rebuild the house.

I don't wish to talk too long, but I do wish to draw some pictures. I hold attention by drawing pictures. Anyone can hold the attention of any audience by drawing pictures.

When I proposed to print this matter at a fraction of the cost of ordinary printing they thought I was just about crazy. After I had made good on this I made another proposition; namely, that I could teach anyone how to draw and to illustrate his own lectures. Then, of course, they thought I was beyond all hope; but I did it, and I am sure that after I have finished this you are going to agree with me—I have told you that I was an artist, and I want you to remember that all along, because after I have finished you are going to lose all respect for me in that line. [Laughter.]

These lectures we use in our engineering department for putting over mosquito-control campaigns. We use them in the schools. We now have under preparation several lectures for children on the different diseases and things of that kind. We also use them for parent teacher associations and the like. This lecture that I am going to give you now is for highbrows, lowbrows, or school children. You can gauge it to your audience. It runs anywhere from 10 minutes to 1 hour and 50 minutes, but I am going to run mine just a little less than 10 minutes [making a charcoal drawing on a large sheet of paper.]

Now, we first ask the children—this talk is on malaria—if they can tell us how many catching diseases they have. They will mention measles, whooping cough, and others. Then we ask them, "Now, can you think of any other catching diseases that we might have?" Some little fellow will say "chills and fever." We say, "Chills and fever is right; that is malarial fever. Can you think of another one?" Another child will say "dengue fever." That is one that most of you know nothing about, but those children do. One name for it is "dengue fever," the other is "chills and fever." Then we say, "What do you call dengue fever?" "Breakbone fever," one of them will say. "Do you know how you catch chills and fever and breakbone fever?" They will tell you several different ways, from sneezing, or rubbing against someone, or shaking hands, or putting marbles in your mouth, or something of the kind. Then we tell them that the only way they can catch this disease is that a mosquito bites someone who has the disease and afterwards bites them; and in order to know how to destroy the mosquitoes that carry the catching disease it is necessary to know something about their life histories.

Of course the first picture that I am going to draw for you is the picture of the fellow that does not believe the mosquito gives you these two diseases [drawing a picture of a donkey]. That is a portrait of that fellow. And here is what I hope happens to him [drawing a picture of a mosquito on the donkey's nose]. I hope the biggest kind of a mosquito pops him right on the nose.

Now mosquitoes lay eggs on water just as a hen lays eggs, but a mosquito lays many more eggs than a hen ever does. She will lay 300 or 400 at one time. She lays them on top of the water [making an-

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other drawing]. That is the water line [indicating]; that is the egg raft of one of our mosquitoes. Their eggs are different, and this particular mosquito lays about 300 eggs in each raft, and they are glued together just like that. They are so tiny that with the naked eye you can hardly see the whole raft of eggs. Within three or four days—all depending on whether the water is warm or not—the little wiggle-tails begin to pop out of the bottom of this raft, and then they start out to look for food.

Now we have the two different mosquitoes, as I have said, in Texas—I won't go through this whole lecture, but I show the audience how to distinguish between the different species of mosquito, from the wiggle-tail up, from the eggs up [drawing a wiggle-tail]. Even the eggs are different. That is a wiggle-tail of the culex mosquito, which is harmless. He hangs under the surface of the water at an angle of 45°. This is his head down here [indicating]. He is now in a breathing position. He breathes through his tail.

This is the chills-and-fever mosquito [making another drawing]. He breathes parallel with the surface of the water. He lies right under the surface, and if you disturb him he wiggles off along the top of the water; the other darts down to the bottom of the water if you disturb him.

After three to seven days, depending on the warmth of the water, he turns into a pupa, corresponding with the cocoon stage of the butterfly. He neither eats nor drinks during that time, and he certainly is an ugly "varmint." This is what we call the "tumbler," or the pupa stage of the mosquito [making another drawing]. He is now breathing through his ears instead of his tail. The children enjoy all those little things. This is his leg case here [indicating]. His legs are all folded up in there. This is the wing case [indicating]. This is the eye. This is the abdomen. This little thing here is a paddle to tumble himself around in the water with. From that stage now we go to the adult stage. Of course it would take a little too long and I will skip that; but we now show the audience where the disease, chills and fever, or dengue, is taken from one man to the other. Mrs. Mosquito, not Mr. Mosquito, does the biting. Mrs. Mosquito has bitten an old friend of mine, and I want you to tell me who the old fellow is. It looks like a mountain. It is not going to be a mountain [drawing a picture of Mutt]. This is my old friend Mutt. He has been out with little Jeff, and Mrs. Mosquito found him and he is now laid up with a case of chills and fever. Another Mrs. Mosquito comes along and gets a nice load of blood from Mr. Mutt, and now she is going out to look for another victim.

This is also a friend of mine. He ran for the presidency, and is still running [drawing a picture of Andy Gump]. This is Mr. Andy Gump. Now, this is why Andy has such an agonized expression [drawing a mosquito on Andy Gump's head]. Old Mutt's mosquito found him. This is what happened to Andy [drawing Andy Gump in bed calling "Min."]. I could go on and draw these pictures, but I am going to tell you now how that is done. Every picture you saw me draw there was already printed on that piece of paper in a very light yellow invisible to you but very plain to the lecturer. Anyone who can hold a piece of chalk can draw these pictures very easily. If you look closely now you can see the yellow line.

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The best way to do this work is to put in a plant to do the printing. A manufacturer of paint (whose name and address can be obtained on application to the Children's Bureau) will send you a complete plan for a printing system costing from $50 to $5,000. Our plant cost us about $2,500, and we print all of our school games and school posters, and sets of these lectures. I have 3,000 sets ready to send out in April. We furnish the 14 pictures to this set and 3 colors of chalk with each set, also a mimeographed lecture with marginal pictures explaining each picture that the lecturer must draw. You see how easy it is for anyone to do that work, and the audience will always tell the story for itself by answering such questions as I indicated that the lecturer can ask. We are now preparing a lecture on the care of the teeth, to be delivered, like the mosquito lecture, by teachers or any lecturers.

The actual material for one of those lectures costs about 15 cents. I print for all the bureaus of the State board of health, consequently the expense for each department is not so great. Most of my work is done for the bureau of child hygiene, and we charge nothing for the school games we send out nor for any of the material. We send it postpaid to anyone requesting it, and send out many thousands each year. This is something that every State needs. It is surprising to me that no philanthropist has come forward and perpetuated his name by putting up a few million dollars for poster work—school work—something that is badly needed in this country.

The CHAIRMAN. I want for a few minutes to tell you a little bit about what we are planning to do and are doing in the Children's Bureau, and leave the question with you as to how we could cooperate best in working together. We recently sent out a questionnaire to health organizations and social-welfare organizations and commercial exhibits and motion-picture companies to make a list of all the health publicity material that was available. We sent it to something like 500 organizations, and nearly all of them replied. Nearly all of them sent very thick catalogues of material; you will see a number of them in our display—in our exhibit office—but the impression one gets on looking over that material is that there is a great deal of waste motion in publicity and popular education, and that if there was some profitable method of cooperating in the getting out of popular material, motion-picture films, and so forth, it would be much more effective and much less expensive.

Some of the things which the Children's Bureau is doing which may interest you are these:

In the first place, of course we send out to the newspapers the ordinary press releases based upon our reports.

In the second place we try to send out as often as possible our general popular press releases which are based upon the care of the mother and the child, and other child-welfare topics.

One of the things which we have had to do this year is this: We have taken several popular publications, notably "Child Management," by Doctor Thom (Children's Bureau Publication No. 143) and also our little folder "What Builds Babies," by Doctor Mendenhall. Instead of sending out a notice to the paper saying that we have published this folder we have taken the folder itself, broken it up into short articles of about 350 words each, taken verbatim

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from the folder, given each a heading, beginning, and ending, so that it stands alone, but sending the complete folder out broken up into short articles. For instance, we sent out 15 articles entitled "Child Management, by Doctor Thom," each with a little subheading and a footnote saying that this was a publication of the Children's Bureau syndicated.

Those have proved rather popular. It is just one suggestion of the method of getting something a little different from the ordinary press statement. A number of the States have asked for extra copies of those series and have sent them to their local papers. Maine, for instance, did that, and a number of other States.

It would be perfectly possible for us, if it would be helpful to you, to have additional copies of series like that when they relate to maternity and infancy subjects sent to the States for local distribution.

Some of the other things that we are doing are: First, in the field of popular material. Writers of popular articles often come to us for material about the maternity and infancy act. We have not just the sort of material that they would like to have, and if it were possible to get it from the States it would be a great help. We do not have nearly enough pictures. We have a great many pictures up here on the walls, which you have sent in, but it is always helpful to have more. We need especially the human-interest material about which Mr. Chenery has told you. That of course we can not get here in Washington sitting at a desk and making it up. It has to come in to us.

In the exhibit line we have one or two things which may be of interest to you. Last year we had made the model of the child-health and prenatal center which you have probably seen in our reception room. That model, which was worked out very carefully by an expert sculptor under the direction of the maternity and infancy division of the Children's Bureau, is available for loan for any exhibit that any State may care to call for. It has already been in a number of States and in fact I think received a gold medal in one State, which pleased us very much.

We also have a miniature nursery which is available for loan. That includes the walls of the nursery, which are collapsible and can be sent flat ready to set up, and the equipment for the nursery—table, bath, bed, play pen, toys, and two little dolls.

The child-health poster, which many of you became familiar with during Children's Year, we have had reprinted without the Children's Year wording on it. That, I think, could be purchased directly from the Superintendent of Documents should there be any demand for it. I can not give you any price on that at present because we should first have to estimate the demand there might be for such a poster before they could give a price. The price would probably be very low indeed since the initial cost has been met by the Children's Bureau.

In the motion-picture field you all know our two films, "Our Children," and "Well Born." We are also developing, or planning to develop, one or two other things that may be helpful.

We have recently purchased two machines, which you have doubtless seen in our exhibit rooms. These use film instead of the old-fashioned stereopticon slides. Our rickets film which consists of pic-

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tures taken by Doctor Eliot at the clinic has also been shown. We have a film on the care of the baby, which has been made up from pictures given by a number of the State bureaus and one or two other associations. We are also planning a film on prenatal care and on nutrition.

These rolls of film of course can be mailed very easily and shown in any one of these portable machines, and they will be available for sale.

I do not wish, and I do not feel qualified, to give a talk on publicity technique. You never know when you send out a story whether it is going to carry or not—at least, you do not know until after it appears in the paper. Yet I may mention one or two things that our experience has shown in regard to the publicity fields represented by newspapers, magazines, exhibits, motion pictures, and radio.

As far as the newspaper is concerned the technique of writing a newspaper story is fairly obvious to most people. This seems to me important—that in any community it is exceedingly worth while to go to the editors of the papers to discuss a program as a whole, not only just when you want a story the next morning. In other words, make friends with the editor, explaining the program, so that the editors have some conception of the whole scope and philosophy of the thing.

It seems to me that the most influential paper in the country is often neglected. That is undoubtedly the little county newspaper, probably the only paper which is read from cover to cover in the country. That paper can be reached, as you all know, I am sure, by a "boiler plate service" or directly. A number of the States have been doing that. Maryland, for instance, had a most interesting weekly series of health talks sent out by such a source.

I shall not presume to say anything about magazines because Mr. Chenery has covered that so well in his talk, and he is so much better qualified than I am to speak about it. This little additional footnote I should like to make to his speech, that one of the types of magazine that ought not to be neglected is the bulletin of the State Federation of Women's Clubs, what we might call the "party organ," the bulletins of the trade-unions, the bulletins of the teachers' federations, and the like. These are small and they reach only their own groups; but such groups are influential and sympathetic. It pays for instance, as I know Miss Crough did recently, to send an account of what the State board is doing to the State bulletin of the women's clubs, and undoubtedly most of the States are doing that. The professional journals are equally important, as Doctor Tallant pointed out; and as to exhibits the very interesting State displays in this building speak for themselves.

The two most important factors in a successful exhibit are motion and light—the two most important factors in attracting attention, at least. It is interesting to go to State fairs, or to exhibits, and I think it is very important for the people who are working along those lines to do that, to stand around and see what sort of thing the people look at. The first thing that is noticed is something that moves; the next is something that attracts attention by bright color or by light. That is not enough, of course. After you have attracted attention you have to convince; and after you have convinced you have to

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persuade to action. But evidently nothing can be done unless attention is attracted.

Another factor in the making of an exhibit, which is possibly worth handing on to you, was suggested to me by a publicity expert in New York City. He pointed out that in any local community an exhibit will be very much more interesting if the people in that community help in the actual making of it. So he suggested that any State or National group which wished to send pictures around quite generally should hire some one especially qualified and skilled to plan such an exhibit, and this person should plan it down to the last detail, even possibly making sketches for posters and working drawings for any model that is to be set up, taking pictures of other parts of the exhibit. Then let these pictures and his directions and estimates be sent to your local person in charge or given to the nurse or whoever is going to take charge of the local exhibit. But leave the actual making in the hands of the group in the community—the school, the women's club, or other group.

Just one more thing has seemed to me quite important. In addition to trying to put over the maternity and infancy program, the publicity connected with the act should have one other object. It seems to me that we have not only to meet the opposing factors of prejudice, perhaps, and indifference, and custom, and tradition, but that there has developed recently a still greater factor which must be contended with. That is a factor of opposition to Government activity itself. By this I do not mean criticism of governmental organizations or agencies or governmental officials, which may be necessary and wholesome; I mean something very much more serious, a more or less direct and concerted attack at the Government itself.

This point I can illustrate, perhaps, by one fairly typical quotation from an editorial in an influential paper. It describes the Government of the United States as an organization full of bureaus and swivel chairs at the expense of the tax-paying American people. It seems to me that this should be met by publicity about the Government; that it is just as necessary and legitimate for the Government itself to attempt to build up good will as it is for any business or public or private organization of any kind; and that it is very essential that Government bureaus tell about themselves as well as about their work; that they tell about the people who are in them, about their salaries, and if necessary about the cost of the service; that they also let their pictures go into the paper, which I know is something that is hard to do sometimes.

The sentiment of the editorials in the papers of the country is, so far as we can judge from the few clippings here, favorable to the maternity and infancy work. We analyzed clippings coming in recently from a number of States, and only one of all the clippings and editorials received was unfavorable. This would indicate that the act itself is understood and appreciated.

I hope that you will let us know if there is any way we can cooperate with you in the publicity. We shall be very glad to help.

I shall now turn over the meeting to Doctor Haines, who will take charge of the discussion.

[Dr. Blanche M. Haines took the chair]

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DISCUSSION OF PUBLICITY FOR MATERNITY AND CHILD-HYGIENE WORK

The CHAIRMAN. We shall have a little time for general discussion of publicity methods, and after that Mrs. Marsh will show you some pictures. But they are not quite ready yet, and in the meantime I will say that we have a distinguished visitor.

You all know what wonderful cooperation we have had from the General Federation of Women's Clubs in promoting our program under the Sheppard-Towner Act, and it gives me the very greatest pleasure to introduce Mrs. Walter McNab Miller, of St. Louis, Mo., the chairman of the department of public welfare, of that federation.

Mrs. MILLER. Madam Chairman, it is a great pleasure to be here with you and tell you that the federation is certainly behind the Sheppard-Towner bill. It certainly is behind the enactment, or rather the appropriation of money in the District, because we have watched the work in the States and the chairman of our child-welfare committee has been making a study which we are having published. We are hoping very much that through our official action we will get it into the hands of the President, showing that these 3,000,000 women of the federation are behind this work. We have watched it. We know what you are doing, and we are trying to help in every way possible.

Miss ABBOTT. I wonder if I could say, just following Mrs. Miller's statement, that I have had a telephone message from Mrs. Sherman inviting any of you who would like to attend to-night a reception that is being given for the women at the General Federation headquarters on N Street—the address you can find in any telephone book. There will be a short program and reception at 8 o'clock.

The CHAIRMAN. Is there anything, Miss Abbott, that you wish to say about publicity?

Miss ABBOTT. No, because I do not dare say anything with Mrs. Marsh here. But I will say I have always been afraid of publicity. I have a great many doubts and uncertainties about everything we do, and I am bewildered as to the way in which we sometimes succeed. I do not know whether Mrs. Marsh remarked that the other day, after a general press notice on Child Management had been sent out, a New York newspaper carried an editorial which began with the statement: "This is a bulletin you will want to write for." In the next morning's mail we had thousands of requests, most of which came from Wall Street and other business addresses. Of course we knew that it was due to that opening sentence. Now I want somebody to tell me how to get the same thing said about other bulletins that we issue. I am perfectly sure that in this particular case the motive back of the requests was wholly selfish. Those men wanted to know about their own children. I suspect that they wanted to be able to take part in the evening conversation about what to do with Mary or John [laughter] and contribute something that mother did not know about.

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Mrs. MILLER. May I suggest a way in which you can get some publicity? When you get a new bulletin send it to our division chairman, Miss Mary Murphy, of Chicago, who is in charge of child welfare, and ask her to write to the State chairmen and see that it gets into the papers in the State. Thus it will come from an unofficial source and will help, I am sure.

Miss ABBOTT. Miss Murphy gets all our news releases, as well as all our bulletins and she has always been very helpful. I shall tell her now that she has an additional duty to perform.

Mrs. MILLER. And I will see that the public-health chairman does the same thing.

The CHAIRMAN. Is there any further discussion in regard to publicity? There is one thing which I wish to say; namely, that it seems to me we should use our scientific journals, so far as we can particularly our State journals, in telling what we are doing in the State. We can get into the columns of the State medical journals, and I strongly advise that as one way of publicity in reaching the professional group.

Doctor SCHWEITZER. I might relate a little experience that we had in Indiana. After making a report of our activities one year I was very much surprised to see a headline in the newspapers stating that we had found in our examination of children in Indiana several thousand—15,000, I think—mental defectives. That was a misprint. It should have been "dental" defectives, but it created a great deal of interest. [Laughter.] The newspapers disliked very much to retract, so in a few days we wrote another letter, a more popular story—and probably more widely read—correcting the impression.

Doctor BARNETT. There is one thing to remember about our publicity, especially in regard to the county. I believe that the publicity we get in our local county papers (as Mrs. Marsh said a while ago) is read from cover to cover; and I insist that the nurse is the one to give that, to report her conference, if she has one, to the paper herself. One of the first things she should do when she goes into the county is to make friends with the editor of that paper. If the nurse does not do this, the newspapers may get the idea all wrong, as we had happen just recently in Texas when the secretary of our State medical society wrote us a letter saying he was very much surprised that the State board was going into the practice of medicine through its nurses. He referred to an article that had appeared about one of the counties where we were going to have a nurse. In telling her duties it said among other things that she was to take the place of the physician in all cases where they were not able to have a physician, to supply treatment, etc. Instead of getting it from the nurse or from someone who knew what the nurses were going to do the papers made up that item themselves; and we received the criticism for it. Therefore I think that one of the nurse's first duties when she goes into a county is to get in close touch with the newspapers and give them their news items in the form in which she wishes them to appear.

Miss OSBORNE. I think that the matter of publicity should be very carefully supervised. I know that unless we supervise it we are very likely to encounter criticism.

The pamphlet Child Management has also been reprinted in our local newspapers, and it has been quite widely circulated, I am sure,

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especially the part of the pamphlet concerning habit forming, which we used in our publicity last year for some special demonstration work that we were doing. To illustrate it we used a human-interest story. Each of these 18 or 20 articles was given about two columns of front-page space, about 5 or 6 inches long. This human-interest story is about a little boy who was given a development test. He was asked among other things, "What would you do if you were going to go some place and missed your train?" He looked at the nurse in some surprise and with a great deal of query in his eyes, and said, "it wouldn't be possible for us to miss a train: My mother is always on time." [Laughter.] So we hung a little habit-forming story on that and it really was very attractive.

Doctor Koenig. In Arkansas we are having more requests for publicity than we can take care of. The State papers and county papers have been perfectly wonderful, and other papers that we have in Arkansas. Even the medical journals, such as the State medical journal, are willing to give us space. They wish something every month, and our State papers give us fine write-ups. We do not go to them; they come to us; they come to our child-hygiene bureau, and we have clippings there concerning our work. In fact, the publicity that the newspapers in general gave us has been one of the outstanding features of this year's work. The other outstanding feature is the open-mindedness with which the people of Arkansas are taking our instruction.

Doctor Gardiner. We had a peculiar experience in New York the other day. We began to have a number of requests for certain types of literature that we issue, and these followed close on one another until we had about 100 or more. Although we do receive frequent requests we do not always have 100 in one day for one type of literature; and finally we found one letter in which the writer said she had seen this mentioned in a certain daily newspaper. We looked in that day's issue of this paper and found in its question-and-answer column a reference to a rather old, out-of-date type of literature we had gotten out some time ago. Yet all these answers had come in in response to that; so this gave to me the suggestion that perhaps all the papers that conduct a question-and-answer column would be glad to have copies of your literature or even that of some other State than your own; and they would be glad to send that literature to the people in your State.

Another demonstration of that has been made in connection with a certain weekly for farmers' wives. Such a publication wrote us a while ago asking whether we would like to have the names of the people who had written to their question-and-answer column and whether we cared to do anything about those cases that came up. A good many inquiries were about nurses. We said we would like to have that monthly list, so we receive it.

Now, about reaching the professional group: Doctor Dees, our obstetrician, came in after a week's work the other day and said, "In all my experience in State work I have never seen such ill people as are coming to me this week." Then she mentioned different cases. There were four or five bad pelvises and numerous cases of high blood pressure, and other serious cases—a very remarkable week's work.

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When I was talking with our publicity man about it, he said, "Give me that stuff, and I will put it in the State journal." He did so, and we have had quite a little comment on that. So that opens up another avenue to publicity.

Doctor NOBLE. In Pennsylvania we have had I do not know how many requests from colleges and high-school girls. They write in to ask if we will send them everything we are doing about child welfare, as they are taking a special course in that work. We finally decided that when we received more than one request from a college we would send half a dozen or a dozen sets of the material desired and ask that these be put in their libraries where they would be available for the girls who were taking the course. I felt that we should never refuse a request like that but should comply with it to the fullest possible extent, because these young women who have learned about child health are going to be our best friends later on.

Mrs. DILLON. The home-economics division in West Virginia does that every year with its group of home-making students. A set of the material has been given to each one of those girls for three years now, and as the girls go out all over the State they will become a wonderful group of community workers behind this program.

I was interested in what Miss Abbott said a little while ago about her uncertainty in regard to newspaper publicity. We have had some experiences that have made us feel the same way. We have been trying to safeguard our publicity and have succeeded to a certain extent in some of our counties. That is true in counties where we have only a public-health nurse, not a full unit, so that there is nothing behind the nurse when she goes in there except the organization that we make, a representative organization which we call the county public-health association. One of the standing committees of that organization is always a publicity committee, and those people are made to feel that in their work they have the heaviest responsibility in the whole thing next to that of the nurse herself; and some of them have done very wonderful work. We try to choose our publicity person very wisely, and we always put some newspaper men or women on that committee if we can get them. One stipulation is always made, and we hope it is never broken—that the articles prepared must be read by the nurse before they are given out to the papers. In this way we have nearly always been able to safeguard stories which might otherwise be sensational. Of course the newspapers are very anxious for the human-interest stories, and they do not always arrange them as we should like.

Mrs. REID. When Florida was faced with an influx of people, a steady procession of all sorts of vehicles loaded with the kitchen stove and the children, coming into the State by thousands we were nonplussed for a while as to how to let them know where they could get help in an emergency—because it is always an emergency with people on the road. Unfortunately they could not always go to the camp, where one can get help; but they stopped along the road, so at first we sent a questionnaire to some organization in each community, if there was an organization of any kind in that community, asking that it be filled out and returned to us. The questionnaire gives us such information as the name of the chief authority in that town, whether it be mayor or city commissioner

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or what not, the names of physicians, the churches, the schools, principal hospitals, and all the general information about the town, whether there were any health organizations, physicians, nurses, and so on, so that the travelers might know where to find them in emergency.

When these questionnaires were returned we were able to compile a good deal of information which we thought we could turn over to the nurses going into the district; but we found that we did not get information to the people quickly enough in that way. So we issued a small folder called Health Hints to Travelers, which contained only general information but named the one place from which a 2-cent stamp would bring information and help. We started with 10,000 copies. They were gone almost immediately, and we had to have a reprint. I really think, from the letters we have received from all over the State—not just from the people in the counties but from other people who have received these little folders—our work has received more publicity from this little Health Hints to Travelers than could have been obtained in any other way.

The CHAIRMAN. Now we must proceed to the moving pictures. They will be shown in this room.

Mrs. MARSH. The films to be shown are "Tommy Tucker's Tooth," "Big Gains for Little Bodies," and the New York State department film, "The Two-Family Stork."

[Meeting adjourned. The audience remained seated to see the moving pictures.]

WEDNESDAY, JANUARY 13—MORNING SESSION

DR. VIOLA RUSSELL ANDERSON, EXPERT IN INFANT HYGIENE, MATERNITY AND INFANT-HYGIENE DIVISION, CHILDREN'S BUREAU, PRESIDING

The CHAIRMAN. We have this morning on our program Dr. D. A. Thom, the director of the habit clinics of the Community Health Association of Boston and director of the division of mental hygiene in the Massachusetts Department of Mental Diseases. Doctor Thom has come to us because of the request of many directors who are anxious to know if the putting on of a program of mental hygiene in a State is a feasible thing. As you know, he is the author of our Children's Bureau pamphlets on Child Management and on Habit Clinics for Preschool Children. I am very much pleased to introduce Doctor Thom.

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THE PRACTICAL APPLICATION OF MENTAL HYGIENE TO THE WELFARE OF THE CHILD

By D. A. Thom, M. D., Director of the Habit Clinics of Boston; Director, Division of Mental Hygiene, Massachusetts Department of Mental Diseases

The first five years have an importance in the mental and physical welfare of the individual that no other period of life can possibly assume. For years you have all been concerned with ways and means of preserving the physical health of the child, but only within the last half decade have you been turning your attention to some of the vital problems which concern his mental welfare.

It is my privilege this morning to discuss with you very informally some of the conditions that may arise during the early years which are fundamentally related to the intellectual and emotional life of the child and which may lead to much unhappiness and inefficiency in later life.

Perhaps I can best cover what I have to say by answering three very general questions: Why is this preschool period important? Why is the mental health during this period so easily impaired? Wherein lies the responsibility for the mental health of the child of preschool age, and how may we devise ways for disseminating the knowledge that we already have relating to the preservation of mental health?

We all know in a very general way why the preschool age is important. It is the period when many physical and mental defects can be diagnosed. It is the period when they first make themselves sufficiently obvious to be recognized not only by specialists but very frequently by laymen. Take for example the mentally deficient group. Nearly all cases of mental defect can be diagnosed during the first four years of life. It is most important to recognize mental limitations early, so that some intelligent plan may be outlined, thus permitting the intellectual equipment, poor as it may be, to be utilized and developed to its full capacity.

Massachusetts has a rather progressive law for the purpose of recognizing and recording those individuals who are mentally deficient. The law requires that all persons three or more years retarded in the public schools shall have a psychometric examination, and a further provision is made that where there are 10 or more feeble-minded individuals of school age in a community special classes must be established. This means that the feeble-minded recognized under this law at the earliest possible date will be 8 or 9 years of age. I feel that when a disease or condition that can be recognized usually during the first, second, or third year exists, and a plan of treatment might intelligently be put in operation, it is futile to wait until five or six years later before instituting a program of education.

Epilepsy, that chronic convulsive disorder which fills so many beds in our institutions throughout the country, has its beginning

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to a very large extent in early life. Studies pertaining to epileptics in institutions caring for the chronic cases indicate that more than one-half of these cases had their first convulsion prior to the fourth year of life.[1] It is equally important to note that the subsequent history of a large group of children having convulsions prior to the fourth year of life indicates that the convulsion was quite definitely a criterion of nervous instability; had it been so recognized many of the shoals upon which children become wrecked in later life and which act as exciting causes of convulsions might have been avoided.

You are all familiar, I am sure, with the frequency with which blindness, deafness, and speech defects occur during the preschool period. Although many of these defects are due to organic conditions for which there is no absolute cure, much can be done by early education and training to reduce the handicap. According to the United States Bureau of the Census there were on January 1, 1923, more than 267,000 patients in State and other public hospitals and private institutions caring for the mentally sick.[2] This group alone is occupying more beds than all other medical and surgical cases combined—which would include all the hospitals for tuberculosis, surgical and medical cases, and infectious diseases. It would be impossible to measure the total cost to the country brought about by mental diseases alone. We do know that in Massachusetts 20 cents of every dollar that the taxpayer turns in is being spent for the care of that type of mental disease which needs institutional treatment. But the great problem of mental health is not the care of those individuals confined in institutions. The great problem is the so-called psychoneurotic class of individuals, persons who are emotionally unstable, who are unable to meet the ordinary problems of every-day life in an efficient way. There are thousands of individuals who have only a limited degree of usefulness owing to the fact that their intellectual capacities are handicapped by their emotional conflicts.

It is during the preschool years—that is, the first six years of life—that many of the undesirable habits and personality deviations first develop; and it is not long before they become so obvious and so devastating to the personality that their ultimate effect on the future usefulness of the individual can easily be recognized even by those who are untrained in either psychology or psychiatry.

It is interesting to note in getting statistics from our general hospitals, especially the out-patient departments, that about 60 per cent of the individuals who go for treatment have not physical disease but are suffering from a state of mind; and this state of mind alters their conduct in a way that renders them inefficient—the so-called "neurotic." So far as work is concerned, they are quite as incapacitated as the individual who has a physical ailment. So there is a little relation between the actual organic incapacity and the amount of work these individuals are capable of doing. The point I wish to make is that a large percentage of all these psychoneurotic individu-

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[1] See "The relation between infantile convulsions and the chronic convulsive disorders of later life," by D. A. Thom, M. D. (Archives of Neurology and Psychiatry, Vol. XI, June, 1924, pp. 664–668).

[2] Report of Census of Institutions for Mental Disease, United States Bureau of the Census. (In press.)

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als of adult life can be diagnosed during the preschool period, and treatment can be rendered which will prevent this enormous waste of human energy.

Consider for the moment the underlying mental characteristics of a criminal. They are impulsivity, lack of inhibitions, inability to forego momentary pleasures and make sacrifices for a definite end. After considerable experience with criminals in prisons and reformatories we find that these dominating mental characteristics have been life-long factors in the personality make-up of this group of individuals. In our clinics for the children of preschool age we see well marked in the uncontrolled, disobedient, asocial child these same personality deviations which keep him in conflict with the family and his immediate environment. I have made an attempt to outline just a few of the social problems that we meet in every phase of life from the cradle to the grave. Most of them can be diagnosed at a very early age, and much can be done, as experience has shown, to eradicate or alter them, or perhaps substitute desirable and social tendencies which will serve the individual in good stead in later life. Another reason for impressing you with the importance of recognizing these personality deviations early might well be found in the fact that certain mental characteristics which the child has during these early years are more usable in altering undesirable habits than at any other time in life. I refer to the general plasticity of the child's mind, as shown by imitation, suggestion, love of approbation; and one might add as another asset the ease with which one can interpret conduct in early life as it is not altered by training, education, and experience. Finally, in this plea for early recognition and treatment of undesirable habits, personality deviations, and criminal tendencies, I would call your attention to the numerous facilities that have been organized and developed during the past 20 years in the interest of the child. I refer to the nursery schools, the kindergartens, special hospitals, nurses and physicians whose training has been devoted entirely to the understanding of the child; books, plays, toys, and all sorts of amusements in general have been developed, not only to entertain but to educate and train along practical lines and develop the nervous system of the child.

There is a tendency to divide the life of the child in a very arbitrary way into its physical, intellectual, and emotional aspects; and the minds of lay people, and frequently those too highly specialized, think of processes working independently one of the other. Obviously this is a grave mistake. We all appreciate how closely these three aspects of child life are interwoven one with another, and how important it is for the closest cooperation to be encouraged among the psychiatrists, pediatricians, and psychologists. Intellectual processes are stimulated by good physical health and emotional stability, and the feeling side of the child's life is tremendously altered if the physiology and biochemistry and general mechanics of the body are out of adjustment.

Here is an example of a physical problem which finds many of its manifestations in the intellectual and emotional side of the child's life. A little girl 9 years of age was brought to a clinic because she was considered a nuisance in school. She had repeated the first and second grades and was in the third grade doing poor work. The

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physical examination, which must always be considered as of primary importance, showed this child to be poorly nourished and poorly developed, with stooped shoulders, bent back, and a pale, careworn expression. The important and outstanding physical defect was deafness. It was revealed that the child was absolutely deaf in the left ear and could hear the spoken voice at a distance of 5 feet only. Three years before she had had a psychological examination and was given an intelligence rating of 63. Her present psychological rating, taking into consideration her deafness, is much higher; but it seemed wise not to give her any definite relative standing on the intellectual scale without much more detailed examination than could be given at the time of writing. It at least indicates that she is not mentally deficient. This physical defect had prevented the child from demonstrating her real intellectual ability in her school work. She soon began to be teased by the other children because of her inadequacy in class work. Naturally she became impressed with her own failure, felt inferior, and found school unpleasant. She became difficult to manage at home, played truant from school, and developed certain destructive tendencies. There is little doubt in my mind that this child's failure in academic work and the personality changes that followed are easily explainable by the child's deafness and the handicaps resulting therefrom. Mental deficiency and delinquency were symptoms of this underlying organic defect and this conduct was simply the result of her effort to keep herself from being ignored, which, after all, is an expression of the instinct of self-preservation, even though it results in asocial activity.

I recall a 9-year-old boy who was brought into my office by his mother. The lad had been doing very mediocre academic work in the third grade of a private school. One of the teachers had told the mother that the boy had a brilliant mind and that his failure was due entirely to his lack of interest and concentration. After carefully studying the entire situation, evaluating the lad's intellectual equipment in terms of his past experience, his general ability to meet the ordinary problems of everyday life, and the psychological examination, we found him to be of a very moderate mental equipment. He had had convulsions in early life, which fact undoubtedly played a large part in preventing normal intellectual development. His intelligence quotient was 75, and, all things being considered, one could come to no other conclusion than that the lad was doing very good work with what he had to do with. It would be a great injustice to push this child on and subject him to more mental stress and strain than he was capable of standing because the teacher entertained the belief that he had a brilliant mind. Unfortunately we can not measure the emotional disturbances in children's lives in terms of intellectual quotients, nor have we any such tests as can be readily applied to measure both qualitatively and quantitively defective hearing. The emotional stress has to be measured in terms of conduct, frequently in terms of nonconformity or inefficiency and unhappiness. Emotional stress and strain are in the background of almost all psychoneurotic symptoms.

The following case comes from a home of no economic difficulties where both parents are educated, both cooperating and in entire agreement as to the training and care of the child, and where the

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results of their training and care and supervision, up to a certain point, have been considered not only satisfactory, but quite ideal:

A 5-year-old girl was taken to a clinic by her overwrought parents because suddenly and quite unexpectedly she had refused to take food or swallow. The morning that I was called to the office in consulation the father was anxiously but silently pacing the floor; the mother was weeping and wringing her hands; and the little girl was sitting quietly next to the physician wearing a mask-like expression. The saliva was dribbling from her mouth to her frock, which was soaked, and she seemed only casually interested. The physician stated that three days ago for some unknown reason the child had refused to take any food, and that she was constantly demanding that her mother reassure her that it was all right to swallow. In spite of the many reassurances given she had refused to swallow and had dribbled all day long. A brief interview revealed the following: It appeared that the mother had frequently told the child that she should never allow anyone to kiss her, and in order to make her statement more impressive she informed the child that it caused infection by germs, and that when the germs were swallowed the little girls died. It happened that on the afternoon previous to the day her unusual conduct began she had gone to her first dancing class, and some man, she stated, stooped down, patted her on the head, and kissed her on the mouth.

How much of an impression this incident made upon the mind of the child is difficult to evaluate at this time, but the important aspect of the problem seems quite obvious. The parents of the child were quite intelligent in handling most of their problems, entertaining some rather unusual ideas about bringing up a child on an intellectual basis. Their principle was that the child should not be spoiled by attention, praise, or affection. If things went well it was taken for granted; if otherwise, moralization and punishment followed. The child was never boisterous, her table manners were perfect, her speech grammatically correct, she was never disobedient, she played only under supervision with most carefully selected playmates; her neatness, punctuality, and general conformity to parental law were accepted as a matter of course. The emotional upset which developed after the child had been kissed would ordinarily have been eradicated after a little explanation had it not been for the fact that, quite as unexpectedly as the symptoms had developed, the parents began to take notice of the child. They not only gave her a little attention, but they became extremely worried and anxious. The child for the first time in her life became the center of attention. It was a new experience and one which was so pleasing to her starved emotional life that it is not at all surprising that she clung to it with great tenacity and gave it up with considerable reluctance. This is just another conclusion of the home situation which occasionally produces rather alarming symptoms in the child. The oversolicitous parent stuffs and overfeeds the emotional life of the child, whereas the stern, forbidding type of parent starves it. These are two extremes of treatment, neither of which will promote strength and stability in the emotional life of the child.

The three foregoing cases, I think, emphasize the necessity of studying the child as a composite unit, the reaction of the individual

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to the environment, and the manifold problems of that environment which the child has to meet.

The conduct of children is frequently more easily interpreted than that of adults, inasmuch as it is more spontaneous, less repressed, and less colored by a social sense. It invariably centers around the child since it is directly concerned with the preservation of the child's own ego as well as his physical being and during the early life fails to take into consideration the feelings and desires of others within the same environment.

The neurotic tendencies in children, as with adults, are always striving to serve some purpose, although occasionally they are so vague and ill-defined that the objective is not perfectly clear. It may be perfectly obvious, the motive of temper tantrums, neurotic vomiting, delinquency, or some other undesirable deed or habit, or it may necessitate a long, careful study of the case; but all such conduct has a motive which the child feels at least is working out to his immediate advantage. Asocial conduct is all too frequently utilized to avoid the difficult situations in life, and the child who learns by experience that such conduct aids in dodging reality on one occasion is likely to practice it more or less continuously.

It is quite important to consider for a moment the incapacity that results from a rather minor mental handicap in the life of the child. The child that is incapacitated on account of some undesirable habit or personality defect or twist not only demands but gets a disproportionate share of the mother's time. The mother is invariably more concerned about this one individual in the family whose personality obliquities lead to asocial conduct than she is with the other three or four children who may be considered normal; and it is not surprising that these normal children will react in a normal way—which means resentment and rebellion toward the parent for the disproportionate share of her time which she is giving the delinquent. Keep in mind, if you will, that the incapacity for efficiency and happiness brought about by an unhealthy state of mind is one of the most common as well as one of the most important problems with which social and medical organizations have to deal. It is of interest to note that the incapacity from mental handicaps, unlike that of physical origin, is out of all proportion to what one is led to expect.

The question now arises—who should be held responsible for the mental health of the child of preschool age? It is not practical, neither is it desirable, to have all these children examined by a so-called "specialist." We do not find the Department of Agriculture sending a trained chemist around to ride on the back of every cart of fertilizer to tell the farmer to put so much here and so much there; but general instructions, I presume, are sent out to farmers giving them an idea as to how best to fertilize certain lands. I think our approach to the problems of education and our approach to these problems of health need be handled in much the same way; that is, the responsibility for the mental health of the child must necessarily rest upon parents, teachers, social workers, and those individuals who are making daily contacts over long periods of time with these children. Many of the most difficult problems concerning the mental health of children are brought about by environmental

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situations so obviously unhealthy that it does not take a trained psychiatrist or psychologist, or any other specialist, in fact, to determine what the defect is, and frequently to make intelligent recommendations to correct it. This does not mean, of course, that there are not innumerable problems concerning the mental health of the child that are very vague and ill-defined, in which it will take all the skill and all the ingenuity of those best trained to comprehend the underlying difficulty. Herein, of course, lies a certain element of danger which is stressed and frequently, I believe, overstressed by the specialist; that is, the parent, the teacher, and the untrained individual must appreciate which problems lie within their province and which ones present fundamental difficulties of such a nature as to need the services of the expert.

At the present time there is much valuable information concerning the mental health of the child, rather well-defined ways of meeting certain problems and mechanisms that are not too complicated for the intelligent person to understand, which gives lay people a much better understanding of how asocial activity develops and what it means to the child. It is extremely important that all you individuals who are held responsible for the physical welfare of the child take advantage of every opportunity to familiarize yourselves with the fundamental principles of child psychology. Many serious mistakes would be avoided if we all utilized the material that is at hand and available. One of the things that parents, teachers and numerous other persons who come in daily contact with children fail to recognize is that the child really has a mental life. If we can get the parents to appreciate that they are dealing with an individual, regardless of his chronological age; an individual who has a mental life capable of experiencing many of the same emotions at 3 years of age which he experiences at 30, much will be accomplished. These children have hopes, ambitions, doubts, fears, aspirations, joys, and sorrows that are thwarted and gratified in much the same way as our own.

Parents tend to look upon the child as a rather mechanistic individual that responds physically to a certain situation and without any relation to events of the past. It is pathetic, I think, and a bit discouraging that so few of us, as adults, can remember in any great detail what our emotional lives were prior to the sixth year. But those who will take time to get close to the mental life of the child, taking conduct as a sort of guide post and the mental content of the child's mind as their objective—what is going on in the mind of the child, what he is thinking of, what he is hoping for, what he is fearing—will find that this mental life is very well established, very well organized.

In understanding the conduct of the child it is of great importance to know what he is thinking, how he is planning, what he is attempting to avoid and to attain, how he feels about things and people, situations and events, which we, as adults, are prone to believe make little or no impression upon him. We must bear in mind that the mental attitude of the child toward life is highly colored by the personalities with which he comes in contact. We must become less concerned with symptoms and more concerned with fundamental

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causes. From the environment and the personalities with which the child has to deal we can expect to learn much regarding the basic forces that are the causative factors of asocial conduct.

There is nothing more important in dealing with children than the psychiatrist's attitude toward the parents. It is not sufficient in most cases to point out parental defects and to lecture parents about being domineering, oversolicitous, or whatever their fault may be. It is quite essential that the parents be helped to understand why they have developed this particular attitude toward the child. The following briefly indicates this point: A boy of 6 years was brought to the clinic only yesterday morning by a mother who stated, "This child is stubborn, refuses to do anything I tell him, makes a terrible fuss about his food. I have to coax, tease him, and finally feed him. If he takes a nap I have to lie down with him. He scratches and kicks and pinches the smaller children. He is extremely cruel to animals, sticks pins in the cats. When denied he screams and yells." During the questioning of the mother a child was staging what I considered a violent temper tantrum in an adjoining room. When I inquired whether he was her child, she replied in a half-hearted way, "Yes, but that is a modest protest at my being away." This mother seemed to be a woman of average intelligence. She had three other children who were apparently getting along without great difficulty, and on the whole she seemed to be handling most of her problems in a very sensible sort of way. In reply to inquiry regarding her husband she stated, "He is really quite a problem, so far as managing the children is concerned. He resents my correcting them and frequently remarks, 'Oh, don't bother the children, let them go, don't be nagging them all the time. They are going to be young only once. Give them a good time,' and during the hours that he is home he refuses to permit me to discipline them in any way whatever."

We find that this man had been brought up in a very cold, forbidding home. He had a tyrannical uncle whose treatment at times was extremely cruel. He could not remember either his father or mother. Childhood was an extremely difficult and unpleasant time in this man's life, and as he grew up he had carried in his own mind the idea, perhaps at times only, in a rather vague sort of a way, that if he ever had any children they were going to have a different childhood from what he had had. "They are not going to be nagged, picked on, and punished as I was when I was a kid." Here we see a very interesting example of a man who is really overcompensating his own children for what he himself had to go through as a boy. Now this overcompensation on his part can not be corrected by simply telling him that he is doing the wrong thing, that he has got to change his attitude, that he is spoiling the boy, and that he knows nothing about handling his own problems. His whole attitude toward the child will be more permanently and happily changed if he can be made to understand exactly what he has been doing and that there are certain dangers in permitting the child to have a life of license just as there are dangers in curbing, thwarting, and at times completely annihilating any initiative on the part of the child. It may also be pointed out that his wife is trying to

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sail between these two shoals upon which so many children are wrecked and that his cooperation is absolutely essential to the future welfare of the family.

I have pointed out many times that frequently the very love and devotion that parents have toward children prevent them from meeting their problems of child training on an intellectual level. People who are perfectly stable about meeting the ordinary problems of everyday life become extremely panicky when dealing with some of difficulties in training children.

I might briefly summarize the thoughts that I wish to leave with you this morning as follows: First, there is no more important period in the life of the individual than the first five years. During this period many of the physical and mental defects which handicap the individual in adult life can be recognized, and it is during this period that they can be most easily understood and treated. Frequently this will prevent the personality from becoming twisted and distorted to the extent of rendering the individual unhappy and inefficient. By the very nature of things as they exist to-day the responsibility of child training must be assumed by parents, teachers, nurses, and general practitioners, and not by specialists. The psychiatrists and psychologists have a very important function to perform in presenting the knowledge at hand regarding mental hygiene in such a way that it can be utilized by various groups with whom the child comes in intimate contact. The problems of mental health are brought about frequently by undesirable factors in the environment and by physical defects, both of which can and should be recognized by intelligent laymen as soon as they appreciate their importance.

I would therefore urge upon you all to avail yourselves of the vast amount of information already at hand concerning the mental life of the child and use it in your daily contacts with your patients, whether you meet them in the clinic, in the home, the nursery school; whether they be found in the congested districts of New York City or in some of the sparsely populated hamlets with which many of you are so intimately concerned.

DISCUSSION

The Chairman. Doctor Thom's paper is now open for discussion. I shall ask Doctor Haines to take charge of the discussion.

[Dr. Blanche M. Haines, of the Children's Bureau, took the chair]

The Chairman. Are there any questions you wish to ask Doctor Thom, or has any one something to say? We have just a little while for discussion.

Doctor Brydon. All of us who conduct child-welfare conferences throughout our States, are constantly confronted by mothers who ask questions, and we know that we may never see some of these mothers again. They live in the rural districts and have no facilities such as people have in Boston, where they can go to Doctor Thom's clinic. We know that a mother is speaking from her heart when she brings in her problem child and asks certain questions.

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Are there any specific instructions that can be given to such a mother, that will cover these phases of the child's life: The physical, the mental, the intellectual, and emotional—just something that we can pass on to this mother that may help her?

A Director. I should like to ask Doctor Thom how he handled this bad boy 4 years old in regard to the control of the father. He did not give us the treatment, and I should like to know a little bit about that.

Miss Osborne. I should like to ask if Doctor Thom thinks it would be a good idea to have the county nurse follow a textbook to help in classes with mothers, to help in one particular phase of bringing up children, such as habit. Do you think that she could do that? I have in mind that particular difficulty that Doctor Brydon spoke of, that we do not know how to tell these mothers at just one visit how to take care of their children. It is a very hard thing to do, but I thought perhaps the nurses might help mothers' classes with some sort of instruction.

Doctor Lakeman. I should like to have Doctor Thom repeat for the benefit of some of us at the back of the room the results of the survey made of patients that entered the hospital 20 years previously.

Doctor Blachly. I should like to know more about the child who was upset by being kissed.

The Chairman. Does anyone wish to know about the feasibility of habit clinics as a State piece of work?

Doctor Gardiner. I should like to know that.

Doctor Thom. On the first question, regarding one visit to a clinic, I do not know whether there is anything that you can put into the hands of the mother at the present time to cover all problems that might arise in the succeeding months between visits. I think such statements would have to be very general. The point that I made might be stressed, that the mother should appreciate that the child has a mental life, that the child's conduct is simply a reaction between his particular personality and the environment in which he is placed—common, simple, everyday examples given. For example, let us consider jealousy: If a newborn baby comes into the family, it is a natural reaction for a youngster 3 or 4 years old, who has been having all the time of the mother, to be a bit rebellious when some other individual is introduced into the family. Frequently mothers look upon this reaction as simply naughtiness or badness on the part of the child, because this youngster at 4 years of age would have a tendency to push the other youngster away. Naturally the mother feels that the 1-year-old child has more demands upon her time and is entitled to it. Now there is a problem that the mother can understand and a common problem in many homes. Something might well be gotten out, I suppose, on these everyday problems with which mothers have to deal; but I do not know of anything you can give to a mother that is going to cover all problems at the present time. If a child came to a physician with a question of a medical or a physical diagnosis you could advise her on that particular condition, but it would be very difficult to anticipate what was going to happen in the physical life of that child. You might sit down and say, "Now if the child has rickets, do this; if the child has croup, do that." You

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might cover many things if time permitted, and yet you might omit the very thing that was going to happen two or three days after the mother left the clinic.

So I do not see that we have any way of covering all the things that might happen. I think we might perhaps present to parents in a rather more general way something about the mental life of the child and its interrelation to the emotional and physical.

Now, the treatment of this bad boy, whom I saw only yesterday morning—saw only once. The treatment of this boy is the treatment of the father. It consists in getting the father to appreciate that the mother must live with this boy 10 hours or 12 hours a day and that he sees the boy for only a couple of hours, that in spite of all the interest and the efforts that the mother puts into this problem he can undo her work in the 2 hours that he is at home; and furthermore to make him understand the reason for his particular reaction—that he is overcompensating for unpleasant experiences that he had in his early life, and although that is generous and human it is going to work a hardship on the child. Another important thing is to make this father see that if he has a child just under 4 years of age, as this child was, the family can not control, even in this padded environment where everything is fitted up, so to speak, to adjust to this difficult situation—what is going to happen to the child when he gets out in the world when he is 5 or 6 years old and meets school problems, where he is going to be considered just one of the group and there will be no adjustment of environment. Is he the one who is going to take the adjustment? So I think the problem there is dealing entirely with the father.

In regard to textbooks for nurses I do not know of any textbooks written on this subject of psychiatry and the mental life of the child that deal with problems specifically enough to be of any great value. I do believe very strongly that mental hygiene should be introduced into the nurse's curriculum, so that she may appreciate the interrelationship between the physical and mental side of the individual's life. But there are a great number of nurses who have not had that opportunity; and it seems to me that courses, wherever possible, of even two weeks' duration should be established in relation to departments of health and private organizations, as has been done in Boston, for example, where the Community Health Association has provided for its nurses some lectures on this subject of mental hygiene which the director feels have been of real value.

It is extremely important, to my mind, that the nurse have this mental-hygiene point of view. There are in Boston three nursing organizations that go into 3,000 homes a day. I do not believe that all the psychiatrists in Boston could have anywhere near the influence on the mental health of the children of the city of Boston that this group of nurses has, going into 3,000 homes, picking up these problems of temper tantrums, undesirable sex habits, feeding habits, that are well within the realm of the nurse's ability to handle.

The survey of chronic convulsive disorders to which I referred was taken from the records of Munson State Hospital. There we found that about 52 per cent, I believe, of all the cases that had good histories showed the first convulsion to have come on prior to the

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fourth year of age; and the other material was taken from the Massachusetts General Hospital, the Children's Hospital, and the Infants' Hospital. These children were sent there with acute infections, such as whooping cough, gastrointestinal upsets, and the like. All cases were excluded where there was any possibility of a meningitis or an encephalitis, a brain tumor, a brain hemorrhage, or anything directly associated with the nervous system, so that the convulsion was secondary to the acute infection. The cases were divided into three groups: First, children that died of convulsions; second, children that became feeble-minded, many of whom were in institutions; and third, a group that did not become feeble-minded but developed epilepsy. Some of them were in institutions, and some of them were occasionally having recurring spells; and some one of these grave things had happened to a little more than 50 per cent of that group. Now I think that is perhaps large; I mean that if you consider all the children who have convulsive disorders I think that percentage is high. I found that in a large group—5,000 cases—about 1 child in every 14 has convulsions; that is, about 7 per cent of all children. This is the figure for a group of 5,200 children from 1,000 families.

But the point I was trying to make is that an infantile convulsion is a serious thing. Yet pediatricians as a group—those that I have consulted—felt that it was not serious, that perhaps most children did have convulsions, and it was not anything to worry about. To me a convulsion in a child is an indication of the instability of the nervous system; and for that particular type of child a special plan should be laid out. That child should be looked over often and a little bit more carefully. In the first place every effort should be made to ascertain why the child has convulsions. A very careful physical examination should be made to determine that; and then a path should be laid out to evade the ordinary shoals upon which many children are wrecked.

The next question is on the kissing. That is quite important. I failed to mention what the little girl told me when I took her upstairs for the 20-minute examination. I immediately gave her a glass of water, which she drank without comment. Then I said, "Martha, why have you not been swallowing? Why have you not been drinking water and taking food?" Then the child told me about going to the dance and a man stooping down and kissing her. "Well," I said, "that is nothing serious, is it?" She replied, "My mother told me I should never let anybody do that." I asked her why. She said, "She told me I would get germs, and if I got germs I would die."

Well, I think that did cause the temporary upset—I mean it got her to thinking along those lines. But I believe that could have been handled very easily and passed over without any difficulty. The important thing was that when this child got sick (for the first time, apparently) both the parents stopped and got tremendously concerned; and the child for the first time saw herself just the center of the stage and everybody running around trying to do something for her and teasing her to do this and teasing her to do that when ordinarily she just did it without any fuss.

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So far as habit clinics themselves are concerned I should not recommend the establishment of clinics quite independent of the clinics that have to do with the physical health of the child; I believe that any individual who has intelligence enough to operate a clinic looking after the physical welfare of the child can incorporate into that fund of knowledge what we know about mental hygiene and render to parents information of great importance. It would not be wise for undertrained workers to set up a special clinic for the mental health of children. I think it should be incorporated in the welfare work itself. The two should go hand in hand. Suppose the mother brings in a child for a feeding problem: Many mothers bring children to me and say, "This youngster does not eat anything. I don't remember when this child has had anything to eat." You look at the youngster and see that he is fat and plump; and her assertion does not seem entirely plausible. You find the problem to be not the amount of food the child eats; but when he eats, what he eats, and the way he eats it. His intake is all right but he will not take it in unless the mother gives it to him; he will not take it when the mother wishes him to, because he knows he can get it when he wants it; and perhaps he refuses vegetables if he can get meat or ice cream.

I think those problems are so closely interwoven that the mental hygiene should be dispensed at a clinic that is doing the health work.

Doctor SCHWEITZER. Would it be a good thing to have a psychiatrist visit the various clinics and help to take care of the problem children?

Doctor THOM. Yes. I think the principal value of having a psychiatrist visiting clinics would be his having conferences with those who are running the clinic, to point out in a very general way how to meet the problems at hand. Each time he should leave with the persons running the clinics such information as he had.

Doctor SCHWEITZER. You think he should act as a consultant?

Doctor THOM. Yes, a consultant and an educator in that field.

Doctor SCHWEITZER. I would like to say one thing more. I wish to say that we have found Doctor Thom's book on habit training in childhood[3] very good to use in regard to child management. We have found it very helpful not only for physicians and nurses but also for the mothers themselves.

Doctor BRYDON. I wish to know how early—or whether you go into the subject with the parents—one can teach the child to overcome jealousy, for instance, or personality twists. Can the young child be taught responsibility to others, service to others, and the golden rule? How early can one teach these, and do you employ these things in overcoming personality twists?

Doctor THOM. I wish I had some of the copies that I have made of the conversations just as they are held with mothers. In dealing with the type of mothers that come to my clinic one must get things over in a very practical sort of way. I always try to project into the future the problem with which I am dealing. Thus, if I am

[3] "Habit Clinics for Children of Preschool Age," by D. A. Thom, M. D., Mental Hygiene, Vol. VI, July, 1922, pp. 463–470. The National Mental Hygiene Association, 370 Seventh Avenue, New York City. (Reprints obtainable.) The Children's Bureau has published a report by Doctor Thom on this subject entitled "Habit Clinics for the Child of Preschool Age; their organization and practical value" (Publication No. 135, Washington, 1924).

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dealing with a child whose mother is concerned about jealousy or who has brought the child in and we find that the difficulty is one of jealousy, I say to her, "Now, Mrs. Smith, you know all this stuff I am going to tell you, but undoubtedly you are familiar with certain people that just hate to see other people get ahead. You live in an apartment house, or you live in a tenement house, and you know a lot of people that are what we call 'jealous,' don't you?" She will immediately think of half a dozen right off that she knows, and she certainly would not want to be like that! Then I try to point out to her that this is just what her youngster is heading for; and what she is actually trying to do is not merely to bring up a child that can live in this household of hers, capable only of adjusting itself to this environment where everything is constantly being shifted and changed to suit the child, but she is trying to bring up a child that in fact is going out to live in the world at large. The first problem on leaving the home is the school, maybe the kindergarten, possibly the nursery school, or the first grade in school; and I try to point out to her that this environment of the child is going to be rigid; it serves 30 or 40 children, and it is going to serve the majority of those children. If any child has such a personality twist that is marked, such as jealousy, so that the child is making assaults upon a little brother or sister, the mother can protect and look after that thing in the home; but if it happens in school that youngster is going to be ostracized.

In other words, I accomplish more with the mother by taking the problem at hand and projecting it into the future, trying to make her visualize the type of child she is going to have at 8 or 9 years of age, or 10 or 15. And as far as the golden rule goes, that adjustment to life—adjustment to these problems which individuals have to meet, whether in the nursery, in the school or in the high school, or whether in industry—is the application of the golden rule. I think that the attitude we take toward parents is very important. I mean that our conversations should not make them believe the child's condition due to any inferiority on their own part. So frequently we are apt to make parents feel that they are inadequate, that they are inferior, that they do not know; and they go away with rather a hopeless attitude toward life. Hence, regardless of what you actually feel about it, you are going to accomplish a great deal more if you can give them the knowledge and still protect their self-respect; and I think projecting these problems into the future does that.

The CHAIRMAN. We shall now turn the meeting back to Doctor Anderson.

[Dr. Viola Russell Anderson, of the Children's Bureau, took the chair]

The CHAIRMAN. Dr. Nina Simmonds, professor of chemical hygiene in the School of Hygiene and Public Health of Johns Hopkins University, and coauthor with Doctor McCollum of The Newer Knowledge of Nutrition, is to be our next speaker.

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NUTRITION IN RELATION TO REPRODUCTION AND VITALITY OF THE OFFSPRING

By Nina Simmonds, Sc. D., Associate Professor of Chemical Hygiene, School of Hygiene and Public Health, Johns Hopkins University

The student of nutrition to-day knows that dietetics occupies a very important place in the field of preventive medicine. More progress has been made in the subject since 1915 than in all the years before, owing to the understanding of the great importance which the unidentified factors or vitamins play in nutrition.[1] Since we have come to understand the significance of the vitamin hypothesis it has been possible to plan experimental diets with definite objectives in view. Investigators before 1915 planned many experimental diets apparently having the same dietary properties, but they could not explain why animals grew in some cases and not in others. Loss of appetite in the experimental animals was a most discouraging factor in the early experiments. The early studies which cleared up this confusing problem have been discussed elsewhere.[2]

It is now possible with the knowledge available of the dietary properties of the natural foodstuffs and their manufactured products, as cornmeal and white flour, to appraise very accurately a dietary formula. We know that an adequate diet must contain the following dietary factors: 18 to 20 amino acids which result from the digestion of complete proteins; a source of energy in the form of fat and the carbohydrate glucose, or sugars or starches which are convertible into glucose; 9 inorganic elements in the form of suitable compounds (potassium, sodium, calcium, magnesium, phosphorus, iron, chlorine, sulphur, and iodine); and for certain species 4 and possibly 5 as yet unidentified dietary factors known as vitamins. It is still an open question whether fat as such is required in the diet. It has not been possible up to the present time to put into the diet two and possibly three of the vitamins without adding fat.

The vitamins are known by the letters of the alphabet, as vitamins A, B, C, D. Evans and Bishop, of the University of California, have presented evidence which is very suggestive that there is another fat-soluble vitamin associated with reproduction which they now call vitamin E. Since we do not know the chemical nature of the vitamins nor the rôle which they play in the animal organism we describe the gross appearance of the symptoms which appear when the animal is deprived of a single one of them in its diet, which is made adequate in other respects.

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[1] McCollum, Elmer V., and Marguerite Davis: "The nature of dietary deficiencies of rice. The essential factors in the diet during growth." Journal of Biological Chemistry [Baltimore], Vol. XXIII (1915), pp. 181–247.

[2] McCollum, Elmer V., and Nina Simmonds: The Newer Knowledge of Nutrition (third edition, The MacMillan Co., New York, 1925, 675 pp.); Sherman, Henry C. and Sybil L.: The Vitamins (The Chemical Catalog Co., New York, 1922, 273 pp.); Funk, Casimir: The Vitamins (authorized translation from second German edition by Harry E. Dubin, Williams & Wilkins Co., Baltimore, 1922, 502 pp.).

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Vitamin A is present in abundance in cod-liver oil, butter fat, the leaves of plants, liver, kidney, and egg yolk. The seeds of plants, as wheat, corn, rye, and barley, although not devoid of it, are not rich sources of it. The absence of vitamin A from the diet leads to the development of a peculiar condition of the eyes. Mori has described the condition as xerosis conjunctivae or xerosis corneae (xerophthalmia).[3] Xerosis or dryness is the essential change. The ulcers of the cornea (keratomalacia) are secondary and are due to infection by microorganisms. The lacrimal gland, the Meibomian gland, the Harderian gland, and the salivary glands undergo marked alteration when vitamin A is not present in the diet. These glands cease to function, and bacteria gain a foothold. Mori states: "It is necessary to consider the clinical picture of xerophthalmia as a series of secondary symptoms which are indicative of the hypofunction of a certain part of the secretory apparatus of the organism." In other words, xerophthalmia is the specific manifestation of a specific glandular lesion. It is one of a chain of symptoms, the other links of which, in children, are hoarseness, cough, lack of saliva, and general malnutrition. There is also a purulent discharge in nose and ears.

Evans and Bishop[4] have described a recurrence of the ovulation cycle in adult rats when their diet was deficient in vitamin A. They found that there was a prolongation of the œstrus desquamative change in the vaginal epithelium, the smear consisting chiefly, if not exclusively, of the cornified cells which in normal rats characterize the actual period of oestrus and ovulation only. These females continue to ovulate and to form corpora lutea irregularly or at intervals approximating the normal.

Vitamin B is much more abundant in nature than is vitamin A. It is present in nearly all natural foods. It is not present in any fats of animal or vegetable origin. It is absent from or present in very small quantities in manufactured products, as bolted flour, degerminated cornmeal, or polished rice. A lack of this vitamin in the diet leads to the development of a disease known as beriberi in man or polyneuritis in birds and mammals. We are not familiar with the exact changes which result in the body from a lack of this substance. The work of McCarrison, however, indicates that the entire digestive tract is debilitated and then the nervous symptoms develop. It has been suggested that the absence of this factor causes a breakdown in the mechanism which controls the nervous system.[5] Evans and Bishop deprived adult rats of vitamin B and found that there was a complete cessation of the ovarian function.[4]

When certain species of animals, man, monkey, and guinea pig are given a diet lacking in the antiscorbutic substance, or vitamin C,

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[3] Mori, Shinnosuke: "The changes in the para-ocular glands which follow the administration of diets low in fat-soluble A; with notes of the effect of the same diets on the salivary glands and mucosa of the larynx and trachea." Johns Hopkins Hospital Bulletin [Baltimore], Vol. XXXIII (October, 1922), pp. 357–362.

[4] See the following articles by Herbert M. Evans and Katherine S. Bishop: "Existence of a hitherto unknown dietary factor essential for reproduction," in the Journal of the American Medical Association (Chicago), vol. 81, no. 11 (Sept. 5, 1923), pp. 889–893; "The ovulation rhythym in the rat on inadequate nutritional régimes," in the Journal of Metabolic Research [Morristown, N. J.], vol. 1 (1922), pp. 334–356; "The production of sterility with nutritional régimes adequate for growth and its care with other foodstuffs," in the Journal of Metabolic Research, vol. 3 (1923), pp. 233–316.

[5] McCarrison, Robert: Studies in Deficiency Disease. Hodder & Stoughton, London, 1921. 270 pp.

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scurvy develops. The rat is apparently immune to scurvy and does not require this vitamin in its diet. Vitamin C is present in abundance in orange juice and lemon juice. Certain vegetable juices, as those of tomato, turnip, potato, and cabbage, are fairly good antiscorbutic substances.

The onset of scurvy in those species which are susceptible to it because of their inability to synthesize the vitamin C is sufficiently rapid to make it difficult to carry out experiments on the effect of lack of the antiscorbutic substance on fertility. As yet no relation has been shown to exist between vitamin C and the functioning of the reproductive organs. Doubtless the occurrence of scurvy would cause damage to these structures since the hemorrhages in scurvy occur in every tissue in the body.

It has been demonstrated that a vitamin is associated with bone growth. Rickets in the rat has been shown to be the result of a faulty combination of three factors in the diet; namely, calcium, phosphorus, and vitamin D, or that vitamin which influences the growth of bone. This unidentified substance is present in abundance in cod-liver oil. It is also present in certain fish oils, in butter fat, and in coconut oil. It has been demonstrated that it is not the same substance which is associated with xerophthalmia, although its distribution is similar. Coconut oil contains a small amount of vitamin D but does not contain vitamin A.

When the diet of a young animal contains unfavorable ratios between calcium and phosphorus and is lacking in a sufficient amount of vitamin D the bones do not develop normally. Our experience leads us to believe that a rat thrives best when the diet contains about one and one-half times as much calcium by weight as phosphorus. The optimal content of calcium for the rat appears to be not far from 0.65 gram and of phosphorus 0.41 gram per 100 grams of food mixture. It is possible to obtain essentially normal skeletal development with less of these elements in the diet provided the animals are illuminated with sunlight or ultra-violet light, or are given certain fish-liver oils. For this reason it may not be possible to determine with great accuracy the exact amounts of calcium and phosphorus needed in the diet. When the diet is low in phosphorus and rich in calcium, or poor in calcium and rich in phosphorus, and is lacking in the vitamin D, the organic structures in the osseous tissues grow abnormally and do not calcify satisfactorily.[7] The resulting condition is known as rickets. Animals do not develop the characteristic lesion of rickets in the absence of vitamin D if their diet contains appropriate amounts of calcium and phosphorus. A condition of osteoporosis develops which has no resemblance to rickets.[8] There must be unfavorable ratios between calcium and phosphorus and a lack of vitamin D before rickets can develop in the rat.

Evans and Bishop have presented evidence which is very suggestive of the existence of a new vitamin intimately connected with

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[7] Shipley, P. G., E. A. Park, E. V. McCollum, and N. Simmonds: "Is there more than one kind of rickets?" American Journal of Diseases of Children [Chicago], vol. 23, no. 2 (February, 1922), pp. 91–107.

[8] Shipley, P. G., E. A. Park, E. V. McCollum, and N. Simmonds: "A pathological condition bearing fundamental resemblances to rickets of the human being resulting from diets low in phosphorus and fat-soluble A: The phosphate ion in its prevention." Johns Hopkins Hospital Bulletin [Baltimore]. Vol. XXXII, no. 363 (May, 1921), pp. 160–171.

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the reproductive function. They state that when female rats are fed a diet consisting of purified foodstuffs and the known vitamins but are deprived of the dietary factor which is said to be found most abundantly in wheat-germ oil, lettuce, oats, wheat, and muscle meats, there result the appearance of normal œstrus and ovulation and the fertilization and implanting of the ova; but invariably disease and resorption of the products of conception take place. They find that when they add any of the above substances to the diet normal young are born.

With an understanding of the importance of these unidentified factors in the diet and with the knowledge of the differences in the biological values of the proteins and of the importance of the mineral composition of the diet, it has been possible to make much progress in the subject of nutrition during the past few years.

One of the problems which has been of great interest has been that of the relation of the diet of the mother to reproduction, vitality of the offspring, and milk production. The first experiment to be systematically planned from these points of view was conducted at the Wisconsin Experiment Station during the years 1906 to 1909.[9] The object was to determine whether rations for young heifer calves so made up as to be alike so far as could be determined by chemical analysis but derived each from a single plant would prove of equal nutritive value for growth and the maintenance of vigor.

The ration given to one group of animals was derived solely from the wheat plant and consisted of wheat straw, wheat gluten, and the entire wheat grain. Another group was fed a diet composed of the entire corn plant, which included the kernel, stalk, and leaf, together with a portion of corn gluten. The third group was fed the entire oat plant; that is, rolled oats, oat straw, and leaf. A fourth group, which it was thought would serve as controls, were fed a ration having the same chemical composition but derived from equal portions of wheat, oat, and corn products. The animals were restricted absolutely to the experimental diets but were given all the salt (NaCl) they cared to eat. All the groups ate practically the same amount of food; and digestion experiments showed that there were no differences in the digestibility of the four rations. The reproduction records of these animals are of special interest. The corn-fed heifers invariably carried their young to full term. The young showed remarkable vigor, were normal in size (73 to 75 pounds each), and were able to stand and nurse within an hour after birth, as is the rule with vigorous calves. All lived and developed in a normal manner. The young of the wheat-fed mothers were the reverse in all respects. They were born three to four weeks too soon and were small, weighing on an average 46 pounds. These young were either dead when born or died within a few hours after birth. The young of the mothers which had been fed the oat-plant ration were nearly as large as those from the corn-fed mothers, the average being 71 pounds. All the cows in this group produced their young about two weeks too soon. One of the four calves was

[9] Hart, E. B., E. V. McCollum, H. Steenbock, and G. C. Humphrey: Physiological Effect on Growth and Reproduction of Rations Balanced from Restricted Sources. Wisconsin Agricultural Experiment Station Research Bulletin No. 14. 1911.

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born dead; two were very weak and died within a day or two after birth; and the fourth was weak, but with care it was kept alive. Most of the young of the cows which were fed the mixture of the three plant products were weak. The mothers were kept on the experimental rations, and the following year they repeated in all essential details the reproduction records obtained in the first gestation period.

Records were kept of the milk production during the first 30 days of the first lactation period. The average production per day per individual of the corn-fed group was 24.03 pounds; for the wheat-fed group, 8.04 pounds; for the oat-fed animals, 19.39 pounds; for the group fed a mixture of the three plants, 19.82 pounds.

It was not possible through autopsy and analysis of the tissues of these young and analysis of the feeds and excreta of the animals of the different groups to determine what caused the marked differentiation of the animals on the different experimental rations. It was not possible by any means known to biological chemistry to discover the cause of the pronounced differences in the physiological well-being of the different lots of cows. Doctor McCollum has told me many times about this experiment, and how it convinced him that the only way in which the problems of nutrition could be solved was to solve the problem of the successful feeding of the simplified diet. He believed that if this were accomplished it would be possible to proceed from the simplest to the complex diets employed in practical nutrition. The story of his researches with Miss Davis in solving the problem of feeding the purified diet have been discussed elsewhere.[10]

Since many laboratory experiments had demonstrated that young rats could not synthesize the dietary factors vitamins A and B but must derive them from their diet before growth could take place the question arose as to whether the mammary gland could synthesize these essentials for the nursing young when the diet of the mother did not contain them. The extent to which the mammary gland can serve as a factor of safety for the nursing young is now fairly well understood. It is well known that the proteins of milk are of distinctly higher quality for the promotion of growth than are those of the vegetable foods generally. The nursing mother takes her large supply of plant proteins of low biological value and puts into her milk a smaller quantity of protein of high biological value.

In order to discover whether the mammary gland can synthesize vitamins A and B we carried out a series of experiments with lactating rats the diets of which were faulty in known respects. The rats were kept on a diet of natural foodstuffs until the young were born. The results showed clearly that the milk of the mothers did not contain either vitamin A or vitamin B unless these were contained in the food.[11]

Since the rat does not need vitamin C for normal development it was necessary to use another species of animal to study whether or not this factor could be synthesized by the mammary gland. It has been demonstrated by several investigations that when a cow is fed a

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[10] See footnote 2, p. 143.

[11] McCollum, E. V., N. Simmonds, and W. Pitz: "The relation of the unidentified dietary factors, the fat-soluble A, and water-soluble B, of the diet to the growth-promoting properties of milk." Journal of Biological Chemistry [Baltimore], Vol. XXVII (1916), pp. 33–44.

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ration low in the antiscorbutic factor her milk is a very poor source of it. Cows fed on green pasture produce milk rich in vitamin C.

Doctor McCollum and I carried out many experiments designed to show how far a mother can produce, while subsisting on a diet of natural foods deficient in one or more respects, a milk which will make good the deficiencies of the diet of the mother as food for her nursing young. The results show that her milk under such conditions is much better constituted than the food from which she formed it, and that this milk, taken by the young while they are eating of the same faulty diet as their mother, makes her deficiencies good in a surprising manner and enables them to make some growth when without the milk the rest of the food would not support any growth. The details of these experiments are too complex for presentation here but are described fully elsewhere.[12]

The accompanying table shows how weights of young at comparable ages vary according to the diet of the mother. Diet 3026 had the following composition: Wheat, 25; maize, 19.5; polished rice (cooked), 9.5; rolled oats, 8.5; peas (cooked), 8.5; navy beans (cooked), 8.5; casein, 10; whole-milk powder, 5; NaCl, 1; $CaCO_3$, 1.5; butter fat, 3. The protein content was about 21.7 per cent and of high biological value. Diet 2193 contained: Wheat, 60; cooked dried beef kidney, 4.2; NaCl, 1; $CaCO_3$, 1.5; dextrin, 30.3; and butter fat, 3. This diet contained 9 per cent of protein (6 per cent from wheat and 3 per cent from kidney). The proteins were of good quality, but the content was evidently too low to induce optimal growth in nursing young.

Ration number	Number of young	Age (days)	Weight (grams)	Number of young	Age (days)	Weight (grams)	Number of young	Age (days)	Weight (grams)
3026	4	18	120	4	27	205	--------	--------	--------
2193	4	19	90	4	26	131	4	32	177
3026	6	17	161	6	26	280	--------	--------	--------
2193	6	17	130	6	31	230	--------	--------	--------
3026	8	12	153	8	21	234	8	28	348
2193	8	17	127	8	31	232	8	42	362

It is clear from the weights of the young in this table that the diet of the mother determines the quality of the milk which she will produce. She sacrifices from her own tissues to a certain extent and also calls upon the reserve which she has stored in her tissues, but this is seldom sufficient to enable her to promote normal growth in her young. One of the most striking illustrations of this point was brought to light in some work which we did when studying the value of cod-liver oil for calcium utilization.[13] The diets used were very low in calcium but about normal in phosphorus. The females receiving the cod-liver oil and low-calcium diet did not present any marked abnormal appearance, as is frequently seen on low-calcium diets; but they were nevertheless in a state of great nutritional instability. Their weakness was shown in a spectacular manner

[12] McCollum, E. V., and Nina Simmonds: "The nursing mother as a factor of safety in the nutrition of the young." American Journal of Physiology [Baltimore], vol. 46, no. 1 (1918), pp. 275–313.

[13] McCollum, E. V., N. Simmonds, P. G. Shipley, and E. A. Park: "Is there a substance other than fat-soluble A, associated with certain fats, which plays an important rôle in bone development?" Journal of Biological Chemistry [New York], Vol. I, No. 1 (January, 1922), pp. 1–27.

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during the nursing of the young. They showed very characteristic histories. They were nervous and apprehensive and walked with a peculiar gait. When at rest they had difficulty in rising to their feet. The condition did not usually appear when the rats were nursing their first litters, but as a rule, after the second litter had been nursed about 15 days the mother would die. The skeletons of these rats were very fragile; many of the bones broke into small pieces as soon as they were touched. It was evident that the mother had sacrificed much of her skeleton for the young. The young remained undersized, since sufficient calcium was not available for them to make normal growth.

A point in which we have been much interested is that milk is produced under faulty dietary conditions. Andrews [14] tried to nourish pups with the milk of Filipino mothers whose infants had died of beriberi. All of these developed the paralysis of the posterior extremities which is one of the characteristics of the disease. Dr. E. Roxas, of the Philippine Islands, and Dr. A. do Amaral, of Brazil, have stated [15] that mothers suffering from beriberi produce considerable quantities of milk. A point which I should like to emphasize is that although a mother may be producing much milk it is not necessarily good milk. Unless the mother is taking a satisfactory diet her milk will be of inferior quality. The findings of Kaupe on mothers' milk during the Great War are of special interest in this connection.[16] He states that although the mothers produced sufficient milk for the infants to make normal gains they did not do so. The protein, fat, or carbohydrate content did not seem to be altered; and Kaupe raised the question as to whether, on account of the war, the mothers' milk was undergoing changes which they did not know about. It seems very probable that, owing to the food shortage, the milk was too low in vitamins.

We know from laboratory experiments that when female rats are on unsatisfactory diets the vitality of the offspring is impaired, just as the vitality of the calves was low under similar circumstances. A striking instance of the effect of antenatal conditions upon the development of rickets was made by Doctors Dalyell and Mackay in Vienna in 1920.[17] Two infants were observed. The first was born of a healthy peasant girl and the second of one suffering from osteomalacia. The healthy mother nursed her own baby and also acted as foster mother to the other baby. Except in the earlier weeks of life, when both were nourished by their own mothers, they received identical food, consisting of breast milk from the healthy woman supplemented by one or two bottles of cow's milk daily. One child was born in July and the other in August. By the middle of December severe rickets was observed in the infant of poor inheritance. Cod-liver oil was then given, but in spite of this treatment the stigmata of rickets persisted until the following March, when the child was about 9 months old. The healthy mother's own child

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[14] Andrews, V. L.: "Infantile beri-beri." Philippine Journal of Science, series B, 1912, Vol. VII, p. 67.

[15] In personal communication.

[16] Kaupe, Walther: "Muttermilch und Krieg." Monatsschrift für Kinderheilkunde (orig. 1918–19), [Leipzig and Vienna], Vol. XV, pp. 83–92.

[17] Studies of Rickets in Vienna 1919–1922, Medical Research Council, p. 122. Special Series No. 77. London, 1923. (Also personal communication from Dr. Vladimir Korenchevsky.)

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remained healthy and developed normally. It appears that the child born from the mother suffering from osteomalacia was physically inferior because of the condition of the mother.

The investigation of rickets in children which Doctor Eliot [18] and her coworkers have been carrying on in New Haven shows that nearly all children whom they have observed have some rickets during early life: "Large, rapidly growing breast-fed infants and very fat infants show definite evidence of rickets. It is an uncommon thing to find a healthy, vigorous breast-fed infant who does not show rickets by roentgen-ray examination. Premature babies, who grow exceedingly rapidly, are notoriously rachitic." It will be of great interest to know what the mothers of these children were eating during pregnancy and lactation. Doctor Eliot has not yet published her records on this phase of the study. The work of Hess and Unger [19] in New York is of interest in this connection. The negro child is very subject to rickets. The tendency is so marked that Hess and Unger found more than 90 per cent of the negro babies to have rickets; a majority of even those who were breast fed showed some signs of the disorder. They made a study of the diet of 75 negro women, ascertaining the dietary for at least two or three days, being careful not to include Sunday or Monday. In this way they obtained dietaries of 75 mothers for 179 days.

The data show that the women ate meat or fish on 172 days out of 179, rice 100 times, potatoes 128 times, eggs 52 times, fruit 53 times, vegetables 53 times, vegetables in stew 32 times, milk as a beverage 47 times, milk with cereal 59 times, with tea and coffee 81 times, and in cocoa 38 times. The study was made in the fall and winter months. The vegetables were seldom fresh; they were either canned or dried. Fresh vegetables were taken only 21 times during the 179 days, and the lack of fresh vegetables was not compensated for by a larger supply of fresh fruit. It is clear from these studies that the larger part of the diet was composed of meat, potatoes, and rice, with tea or coffee. This diet would not keep one in good condition, nor would it supply good milk for the young, and it is not strange that the children of these mothers suffered from rickets. It is surprising that breast feeding was recommended for so long without the giving of attention to the diet of the mother. It was apparently believed that milk would be of good quality because it came from the mammary gland. We know that this is not the case.

Another phase of nutrition in relation to the health of the mother is discussed by Maxwell in connection with osteomalacia in China. (Hess and Unger do not mention the occurrence of this disease among the negro women whom they observed.) Maxwell says of osteomalacia in China: "It is a peculiar and widespread disease, as a rule affecting adults, though cases in children about the age of puberty are not very rare. As regards adults it is a disease of the female, and of pregnant women, though occasionally a stray case may

[18] Eliot, Martha M.: "The control of rickets." Journal of the American Medical Association [Chicago], vol. 85, no. 9 (Aug. 29, 1925), pp. 656–663.

[19] Hess, Alfred F., and Lester J. Unger: "Prophylactic therapy for rickets in a negro community." Journal of the American Medical Association, Vol. LXIX, no. 19 (Nov. 10, 1917), pp. 900–903; "The diet of the negro mother in New York City, Vol. LXX, no. 13 (Mar. 30, 1918), pp. 1583–1585.

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be found amongst males."[20] It corresponds in certain respects to rickets in children, to cage paralysis in animals, and to osteoporosis. In osteoporosis the bones are very fragile, but this is not the case in osteomalacia, in which an osteoid tissue lacking calcium salts replaces the normal osseous tissue. The bones become very soft and flexible, and in extreme cases they can be bent as if they were rubber. If a cure results the bones harden with the deposition of lime salts, and the deformities which have developed during the softened period become permanent. There is much osteomalacia in the Shansi Province and also in Manchuria. It seems to occur more in the northern part of China than elsewhere. According to Maxwell the diet of the people in the Shansi Province consists largely of wheat meal, oatmeal, kaoliang flour, bean flour, and millet, with a little white cabbage, bean leaves, and gourds. During the winter the diet is limited in most places in the country to millet gruel, sometimes supplemented with a little cabbage or salted vegetable. We pointed out several years ago that millet contains fairly liberal amounts of vitamin A. It also contains vitamin B, as do a few of the other things which they eat. The cabbage would protect them from scurvy provided it was raw. There is no mention of the occurrence of scurvy. Their diet is therefore not conducive to the development of ophthalmia, beriberi, or scurvy. The mineral content and vitamin D content are very low, and these must be factors contributing to the occurrence of osteomalacia.

What is the etiology of osteomalacia? McCrudden, a student of calcium metabolism, says:

> Just as the subcutaneous fatty tissue acts as a store of fat and the liver glycogen as a store of carbohydrate, so the skeleton acts as a store of calcium salts to be called on in time of need. During the later months of pregnancy and during lactation the need for calcium salts is great, greater than the intake in the food, and it becomes necessary to draw upon the calcium supply in the bones. The result is that the new bony tissue laid down to replace old bone as it disappears is poorer in lime salts than the normal. Ordinarily the quantitative change in the composition of the bones is not great enough to produce symptoms. At the end of gestation and lactation when the extra need for calcium has ceased, normal bone is again laid down.[21]

Maxwell says that this theory of calcium assimilation covers only one-half of the truth. If it were as simple as this one would need only to make good the calcium deficiency and the patient would be cured. He says that in practical treatment the addition of calcium is not sufficient, but that when given cod-liver oil, good food, and sunlight the majority of patients recover. The work of the last few years on rickets demonstrates that the need of cod-liver oil or light rays is to aid in the assimilation of the calcium. Without one of these the calcium apparently can not be utilized.

Maxwell and his coworkers find that there are three periods in a woman's life at which osteomalacia is prone to appear: Puberty, when there begins to be a disturbance of the calcium balance with the establishment of the monthly drain of calcium in the menses; pregnancy, when the demands of the growing fetus begin to drain cal-

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[20] Maxwell, J. Preston: "Osteomalacia in China." The China Medical Journal [Shanghai], Vol. XXXVII, no. 8 (August, 1923), pp. 625-642.

[21] McCrudden, Francis H.: Endocrinology and Metabolism [Clinical Diagnosis of Internal Diseases, Vol. IV, edited by H. L. Barker], D. Appleton & Co., New York, 1916.

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cium from the mother; and the period of lactation, when the demands of the newborn child require calcium in the milk supply. By far the largest quantitative demand for calcium is made during lactation.

According to Maxwell a typical history is as follows: First pregnancy, normal; second pregnancy, pain during the last few months, normal labor; third pregnancy, pain beginning about the third month in pregnancy, labor difficult, requiring forceps or even craniotomy; fourth pregnancy, pain as already described but more severe, a difficult craniotomy or a Cesarean section needed, natural birth impossible. The disease may appear in the first pregnancy and progress so fast that a Cesarean section may be necessary at the time of the first labor. As a rule the disease clears up after lactation is complete, but it may recur again and again. In the minority of cases the disease steadily progresses, making the patients bedridden invalids till they die of asthenia or intercurrent infection.

The question may be asked: What is the condition of the fetus when the mother suffers from osteomalacia? Maxwell says that the evidence all shows that the fetus also suffers but to a less degree.

This may be an extreme example of what can occur when the dietary conditions and living conditions are both unsatisfactory. The living conditions of these people aggravate the condition brought about by faulty diet. When the disease begins to develop they stay in the house away from sunlight, and their condition goes from bad to worse.

All experimental data are in agreement that the diet of the pregnant and nursing mother is of the utmost importance for the well-being of the child. But it is shortsighted to wait until a woman is pregnant before she takes note of her diet. As Doctor Mendenhall has well stated: "Maternity should be prepared for. Not every woman or a woman in every year of her child-bearing period is in the proper condition to give the right prenatal environment or to furnish the proper nutriment to a child." [22]

The following statement is taken from the proceedings of a recent congress on child welfare held at Geneva, Switzerland: "With regard to infants the First General Congress on Child Welfare considers breast feeding the only proper method of nourishment except where medical advice is opposed to this course. No woman should be employed as a wet nurse unless she has nursed her own child for five months." [23] No mention is made of what the mother should eat while nursing.

From what has been said it will be apparent that a faulty diet may interfere in a marked degree with fertility, with the prenatal development of the young, with the secretion of milk of satisfactory quality, and with the development of the skeletal tissues of the nursing young; and it may cause in the mother nutritional disturbances which induce profound damage of one kind or another. Child-bearing by women living on diets deficient in vitamin B may cause them to have beriberi when otherwise they would escape. Child-bearing by women taking a diet faulty in its content and relationship of calcium and phosphorus not infrequently results in so great a

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[22] Mendenhall, Dorothy R.: "Preventive feeding for mothers and infants." Journal of Home Economics [Baltimore], vol. 16, no. 10 (October, 1924), pp. 570–578.
[23] Proceedings of First General Congress on Child Welfare, Geneva, Switzerland, 1925.

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depletion of the mineral salts of the skeleton as to cause extreme and permanent injury. The studies of American dietaries made by Sherman and Gillett [24] show that the average calcium content is less than one-half of the average phosphorus content. Our studies indicate that these are unsatisfactory quantitative relationships between these two elements.

For more than a decade Doctor McCollum and I have been studying the effects of nutrition in its relation to fertility and to the vitality of both mother and young. We have gathered a great amount of information concerning the diets of people in different parts of the world, and it permits some very interesting deductions. I shall here mention only that Americans and some Europeans have been trying for several decades an experiment in human nutrition on a nation-wide scale, which involves the consumption of a dietary composed largely of refined cereal products, refined sugar, muscle meats, and tubers. Such a list of foods as ordinarily appear in the daily menus in this country is incomplete for laboratory animals and tends to interfere not only with growth but also with fertility, and it furthermore tends to undermine the vitality of the mother. Investigators have been able to produce experimentally, with the operation of no other than faulty nutrition, all the deficiency diseases which occur in man. Many of the difficulties in parturition, exhaustion due to lactation, resorption of the bones, frequently seen in women have been observed in female rats.

Doctor De Garis [25] has emphasized that pain in every other body function (menstruation, micturation, defecation) is accepted as due to some fault in the process and inquires why this is not true also of labor. Yet pain in labor is so usual that the several definitions of this function accept the existence of pain as a concomitant of the normal process. The results of observations of laboratory and domestic animals all support the view that any difficulty in delivery is generally directly traceable to some fault in the female's diet. The results of nutrition studies on animals probably justify Doctor De Garis in saying that at present a safe labor can confidently be promised to the mother if proper care is given in the prenatal period. It seems highly probable that if we had all the facts many of the difficulties of labor could be traced to nutritional causes. In some cases these may be the result of faulty nutrition during infancy or childhood, resulting in a small pelvis; in others the trouble may have arisen from the woman's having brought herself in adult life into a condition of nutritional instability which unfits her for the strain of childbearing. We have emphasized many times the seriousness of the border-line condition of malnutrition in which the evidences are obscure.

It would be beyond the scope of this paper to discuss in detail the choice of foods and the planning of menus which promote health and well-being in man. These have been fully treated elsewhere in popular form and are readily accessible.[26]

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[24] Sherman, H. S., and Gillett, L. H.: The Adequacy and Economy of Some City Dietaries. The New York Association for Improving the Condition of the Poor Publication No. 121, New York, 1917.

[25] De Garis, Mary C.: "A definition of normal labor; the cause of pain in labor." Medical Journal of Australia [Sydney], vol. 11, no. 8 (Aug. 22, 1925), pp. 222–225.

[26] McCollum, E. V., and Nina Simmonds: Food, Nutrition, and Health, p. 143. East End Post Station, box 25, Baltimore, Md. 1925.

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DISCUSSION

The CHAIRMAN. I am sure you wish to ask Professor Simmonds some questions. The neonatal deaths are a big factor, and yet we have not touched upon this in any conference we have ever had. I have felt that neonatal death is tied up with nutrition to a very great extent. I have no figures; I have nothing to prove that; and one reason I wanted Professor Simmonds to come was because she had made these experiments with rats. She did not tell you very much about vitamin E, and I do not know that she will feel like expanding that subject very much now, but if you wish to ask her some questions please do so. We shall have about 20 minutes' discussion.

Doctor GARDINER. It occurred to me when Professor Simmonds was talking that we might begin with several States and make some sort of study of breast feeding. Of course we do recommend breast feeding. We have got to go on recommending it, and I think everyone who has recommended it has realized that there was something in the quality of the milk. Yet after all you put one foot forward at a time, and I think that is perhaps the stage at which we are now in regard to breast feeding. But I do think that perhaps it would be perfectly possible to select 100 or 500 or 1,000 cases of lactating mothers and study the food they are taking just as they take it. Take an average community, perhaps, having a sprinkling of the foreign element, and so on; have another State do likewise, and have someone line up a schedule for the study. I should be very glad to make such a study.

I think one of the griefs of our work is that so much detail and administrative work lies at hand that we have not time to think over things and meditate on them as we would like to, and make studies when we have such an abundance of raw material at our disposal.

Doctor BRYDON. I should like to ask Doctor Simmonds about canned-tomato juice. That is universally used everywhere, and in the country districts we can not get oranges. Is there any particular brand of tomatoes that you advise, or is there any particular procedure in preparing canned tomatoes that could be issued? I also wish to ask whether prune juice or pineapple juice would be good substitutes.

Professor SIMMONDS. The question of tomato juice as a substitute for orange juice is very important. Doctor Kohman, of the National Canners Association, is perfecting a new type of canning procedure. Whether that is going to make every can of tomatoes contain its original content of vitamin C I do not know. It is said that tomatoes ripened artificially, such as those picked green and sold in the wintertime, contain less vitamin C than those picked ripe from the vines in summer. I do not know of any criticism of the tomato juice which has been used in this country. Possibly the tomatoes canned in England may have been overprocessed. We know that vitamin C is destroyed by oxidation. If the tomatoes are canned quickly and not boiled very much, and not stirred when they are boiled, more vitamin C would be retained. I have not heard of a child's developing scurvy in this country when given a liberal amount of tomato juice. A child receiving plenty of orange juice will not develop scurvy. The vitamin C content of California oranges differs

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from that of Florida oranges. Oranges differ at different seasons of the year in vitamin C content. The same is without doubt true of tomatoes.

I think home-canned tomatoes, or any good commercial brand of tomatoes, will probably serve as a source of vitamin C if not given in very small amounts.

Doctor BRYDON. Would it make any difference whether they were canned in tin or jars? Would glass jars be different?

Professor SIMMONDS. Canning in tin or glass jars does not make any difference unless copper comes in contact with the product. Raw-turnip juice, raw-potato juice, and raw-cabbage juice are all good antiscurvy remedies. The Indians knew the symptoms of scurvy and knew how to prevent this disease. They did it by giving an infusion of spruce needles. Eskimos eat raw glandular organs as well as other meat. Raw liver is a good source of vitamin C.

The CHAIRMAN. We have been looking up these vitamins for a woman who has asked us, and we are getting information—for the Arctic Circle, I should say.

A DIRECTOR. What about the relative value of pineapple juice?

Professor SIMMONDS. Canned-pineapple juice would be a very inadequate source of vitamin C. Raw pineapple would probably contain it.

A DIRECTOR. What should we state to the mothers as to the value of the different berries?

Professor SIMMONDS. They are not potent sources of vitamin C. Doctor Hojer found the whortleberry to contain a small amount of this vitamin. I think canned-tomato juice will be the best source of any of the canned juices.

A DIRECTOR. Is that true of blueberry?

Professor SIMMONDS. I do not know of any experimental data on blueberries.

Doctor ALLEN. I wish to ask if Professor Simmonds said raw potatoes?

Professor SIMMONDS. Raw turnip is really better than raw potato because it gives more juice. Raw potatoes have been used for many years.

A DIRECTOR. To how young a child may raw turnip and potato be given?

Professor SIMMONDS. Very few cases of scurvy in babies under 8 months of age have been reported. We do not know whether or not this is due to a protective substance which the child carries over from prenatal life. Raw-turnip juice or raw-potato juice probably could be given. Orange juice is frequently given to infants 4 weeks of age. One can not make statements which would apply to all babies.

Doctor KOENIG. How would it do for the mothers in the country districts in Arkansas who are too poor to buy canned tomatoes to eat a raw potato, carrot, or turnip every day during the first few months when they are nursing the babies? Would that put into the mother's milk what the baby ought to have?

Professor SIMMONDS. I do not know enough about it to make a statement on that. I should think that the raw vegetables would increase the vitamin-C content of the mother's milk.

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Doctor Koenig. Even babies only one year old like to chew on a raw onion.

Professor Simmonds. I should not think that children ought to be given raw onion. I should ask a physician about this. Raw onions are a good source of vitamin C.

Doctor Gardiner. I should like to ask about those cows that were fed on corn. Was that whole corn?

Professor Simmonds. It was the whole corn plant, i. e., the leaves, stalk, and corn kernel. We know that the leaf has a marked dietary property as compared with the seed. That is why we include leafy vegetables as one of the protective foods. Leafy vegetables such as spinach, lettuce, cabbage, beet tops, and the like are protective foods, and we wish to encourage mothers to eat them.

Doctor Brydon. Couldn't you cook turnips, onions, and potatoes and not hurt the vitamins?

Professor Simmons. If you cooked them a short time the vitamin C would not all be destroyed; vitamins A and B would not be injured much.

Doctor Brydon. About how long?

Professor Simmonds. One can not make a definite answer to this question, since it is not heat but oxidation which destroys vitamin C, and the amount of oxidation taking place would depend upon the method of cooking. Something raw should be included in the diet each day.

Doctor Brydon. Then mealy potatoes do not have much vitamin content?

Professor Simmonds. Cooked potatoes would not be so potent in the vitamin C as raw ones. I do not know of any experiments on baked potatoes.

The Chairman. A major part of the program of Indiana is the work that Doctor Schweitzer is doing in mothers' classes. She has found that in this State the problem of informing the mother concerning prenatal care and the hygiene of infancy works out very well through the instruction given in the mothers' classes. Doctor Schweitzer will tell us about that now.

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MOTHERS' CLASSES

By Ada E. Schweitzer, M. D., Director, Division of Infant and Child Hygiene, State Board of Health, Indiana

The statement made by the chairman is correct for the present time. We began our work, however, with child-health conferences. We have held them in every county in Indiana, working through each county by townships, so that in every county we have had from 8 to 14 conferences. This nearly always preceded the work done in the mothers' classes. In the child-health conferences we not only examine children but also consider, as far as we are able, the mothers' problems with reference to diet and behavior, such as Doctor Thom spoke about this morning. Our service to the mothers of Indiana has concerned not only the physical condition of each child that was examined but also its growth and development and its behavior reactions. We had many cases in the conferences where the behavior reaction seemed to be the chief thing worrying the mother. One instance may be given:

An only child 3 years of age was presented with a baby brother. I think the fact that the new baby was not a normal child did not affect the child's behavior reaction. But the baby took a great deal of the mother's attention, and the little girl, who had been quite normal in every respect up to that time, developed an unwillingness to eat. She was jealous of the new baby, and she found that by not eating she could get her mother's attention. When the child was brought for examination, her mother said, "I have been devoting four hours every morning to getting this child to take her cereal, and I am afraid I am neglecting the baby." The advice indicated was given.

We have found that after child-health conferences, or coincident with them—perhaps not wholly as a result of them—the infant mortality rate was going down. The maternal mortality rate which had been going down very slowly, or not at all, showed a perceptible descent. This improvement, which prevails throughout almost all the United States, is partly due to the intensive activities of child-hygiene workers, and partly to the interest created by Children's Year, and partly to the results of the draft examinations. But because our early infant mortality rate did not go down very markedly, as will be shown by our charts, and because our mortality rate for infants under 1 month of age had not gone down perceptibly, we felt that we were not doing as much as we should when we merely examined babies and gave mothers advice concerning them, although we did discover a great many defects or a great many cases of poor nutrition, which we ascribed to the condition of the mother before the baby was born.

Whenever we found that a child had markedly defective teeth we inquired especially into his early history—as to any previous diseases, as to his nutrition, and as to the nutrition of the mother

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before that child was born. Often the condition of the child could be traced to the condition of the mother before the birth of the baby. This interested a great many mothers in prenatal care, so that when we were ready to start our mothers' classes we were met in almost every place with interest in the type of instruction given. I shall review briefly the outline of the work as it is given. You will be able to see very clearly from the outlines just about what is presented. The plan of work is adapted to each community.

At first we had special organizers. We found later that it was better to let the persons who are going to do the work do the organizing—that is, the physician and the nurse. We started with one physician and one nurse in a county working out various plans until finally we reached the one plan which we are now working, and the physician and the nurse in adjoining counties organized alternating schedules.

The nurse does most of the organizing. The physician is expected to make the contact with the medical profession as early as possible, and to have time enough during the period when the classes are in progress to make additional contacts.

Before the organizing begins the division sends a letter to every physician in the county, and to a few other prominent people, announcing organization of the county for mothers' classes, and asking the physicians about their own methods of procedure in maternity cases, also requesting suggestions as to the type of information needed by the mothers in their county. We believe the physicians who are in the field know better than we what type of information should be given. We have received a great many valuable suggestions. A copy of the State bulletin which has in it a summary of the replies that we have received will be left on the table.

The nurse interviews local officials and gets committees organized. We do not work with any one organization, but with all organizations that are interested. After the committees are organized in the county seat they are organized also in the larger and smaller towns throughout the county. As many groups as seem to be interested, up to about 14, are organized for classes in each county. The physician gives the first week's lectures while the nurse is organizing or finishing organization in the adjoining county. The lectures deal with the usual subjects in regard to pregnancy and to the need for prenatal care, and include the growth and development of the embryo, usually from the standpoint of nutrition and of the possibilities of normal labor.

While the physician starts the series in the second county the nurse goes into the first one with a very practical demonstration of the care of the expectant mother, using the prenatal charts published by the National Child Welfare Association. She shows the mother how to prepare for a confinement case in the home; she has a maternity room set-up that we have here to illustrate what she is telling. She actually makes the various dressings in the presence of the mother, showing how they should be prepared and sterilized. The use of a clinical thermometer, blood-pressure apparatus, and other procedures are demonstrated before these mothers, so there will be no fear in their minds when the physician asks to do these things. The importance of the physical examination of the

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mother is also emphasized, and the physician explains, with anatomical charts, the character of the physical examination, including the pelvic measurements.

The physician's second lecture has to do with the actual birth of the baby and the care of the newborn child and of the mother. The third lecture, in the fifth week of the course, discusses the prevention of infectious diseases, especially those of childhood. At this time are shown motion pictures which review the entire course. We use the film Well Born, and two films on embryology, one called Life's Beginning, and the other The Gift of Life. The film selected depends upon the type of audience expected. If we are to have a mixed audience, we use Life's Beginning, which does not contain so much maternal anatomy. If we have just the mothers who are in the class, with perhaps the husbands, we use either one. In order to emphasize the necessity of proper nutrition and proper care of the teeth we use the film Tommy Tucker's Tooth, which you saw yesterday. We use other films also. We find the one called Better Babies very helpful. It depicts the growth and development of the child of preschool age, his behavior, reactions, and mental development and training.

The nurse's second demonstration is the establishment of maternal nursing and the care of the young infant, and the development of the child of preschool age, the child-welfare charts being used to assist in the demonstration. We find that even when we are busy setting up the motion-picture machines or doing various things these charts are being read; and they are read at intervals between the lectures, impressing visually the oral lessons taught.

So much has been said about interesting the medical profession in the work that I put statistical charts up. I find that a talk based on this group of charts is interesting to the physicians, showing why the work is needed. We usually explain that whereas work has been done for the protection of mothers and babies for some years and whereas we have been able to reduce certain types of mortality and certain types of morbidity a great field still remains almost untouched. We can show what that field is by the relative causes of death as seen on these charts.

You can see in the older chart, which was finished about 1919, and the newer one, finished about 1923, just about how much progress we have made with relative causes of death. One chart shows the causes of mothers' deaths; another shows the causes of death in very early infancy.

Another chart shows that our reduction in infant mortality has been mostly along the line of intestinal infections, largely by a consideration of diet and of the care of the child. We have still other problems that we have not solved, and we are trying to meet some of those by this mothers' class work.

We have also charts on mental hygiene and physical health. The physicians and the nurses, too, are prepared to present in detail the facts demonstrated on these charts. We have in our library the latest pamphlets and books on these subjects, such as Doctor Lucas's book on the Runabout Child; Doctor Gesell's book, Doctor White's, and others on maternal care and infant feeding for the use of our physicians and nurses. They supplement them with the reading of these pamphlets and present the pamphlets to the mothers.

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I have here for your inspection a complete package of the pamphlets which are used in our mothers' classes and which are also sent out on request. As has been mentioned, they have been asked for by persons who teach science, home economics, and physical education in colleges. The home-economics people especially want pamphlets on diet. We were very fortunate several years ago in having Doctor McCollum, of Johns Hopkins University, lecture in Indianapolis. The young woman who took notes on his lecture wrote it up, and with a few changes her report was printed as "The Elusive Vitamin." We have an illustrative vitamin chart to go with it that was printed in the book and reproduced in a suitable form available for teachers who wish to place it on the wall.

More recently Doctor McCollum came again for our national dairy show and supervised the placing of all of the exhibits which had to do with nutrition. This was a great educational demonstration in Indiana. The practical application of earlier instruction given to mothers leads us to hope that these lessons concerning prenatal care, and the talks concerning the care during pregnancy, must of necessity bear fruit later on.

Recently we sent questionnaires to heads of committees and to mothers, asking reports on benefits to children who were examined in child-health conferences and definite questions about personal and community results. A short summary of replies will be available soon.

We took from our correspondence at random, as a part of our present campaign for acquainting people more fully with the work, notes from physicians, nurses, school authorities, parents, and people in general concerning the work of the division. These reports have been classified by kinds of persons writing, by counties, and by congressional districts. The maps on display we have prepared for presentation to persons interested in the organization and in what is being done with Sheppard-Towner money. This gives every one a definite picture of the parts of the State we have worked and the types of work done in each district.

Our statistician compiles the information contained on the examination charts and assembles statistical data concerning the condition of children in all counties. The prevalence of whooping cough and the presence of infectious diseases by ages are shown. This chart showing that the teeth begin to develop in the seventeenth week of embryo life emphasizes the importance of prenatal nutrition. When mothers realize that what they eat is responsible in a large measure for the kind of teeth that children have they begin to understand that it is important to give attention to these things before the baby is born. Doctor Brady, of Kansas City, has a complete set of these pictures, showing the development of the teeth from the seventeenth week of embryo life to the fifteenth year. This shows the normal development of the teeth so that comparisons can be made at any stage of the child's development to ascertain whether his teeth are developing normally or not.

One chart shows a little survey that we made concerning the extent of prenatal care which this group of mothers received two or three years ago. Now, many of our mothers are asking for early prenatal care; in fact, we have reports from a large percentage of

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our classes, that women who are expectant mothers go immediately to their physicians after they have heard the first lecture and ask for prenatal care.

Our activities maps have been worked out by congressional districts. A member of our League of Women Voters suggested that. She said: "Congressmen and others want to know what is being done with Sheppard-Towner money and also want to know what is being done in any particular section of the State." Our map shows that we have worked with our mothers' classes since February, 1924, in 59 counties, leaving 33 counties for the next year.

The child health conference map shows the number of babies examined in each county of the State. This map and the key have been made in colors, showing the number of children who were examined under State funds before we had Sheppard-Towner money and showing how greatly we were able to extend the work after we had those funds.

Another chart shows other types of work that have been done, lectures, exhibits, and demonstrations. In large exhibits all types of work are correlated as a model demonstration of community projects.

The most complete demonstrations are the State fair exhibit and our exhibit or program at Winona Lake Chautauqua for a week each year in July. On each program we have child examination, mothers' class demonstration, motion pictures, and exhibits. The people attending are responsive to this work.

At the State fair we have four demonstrations under supervision—a baby contest through which we have opportunity to teach health standards by a series of newspaper articles and to give a public demonstration of the results of good care. The paper would not be willing to print many long preliminary articles on child care if it were not interested in our baby contests. The State board of agriculture provides at the State fair a room 40 by 90 feet in size for baby contests and has fitted it up exactly as we requested. They also have a "better babies building," where noncontest babies are examined and a day nursery is conducted. This is the only "better babies building" in the United States built by the State board of agriculture in the interest of the babies. A playground has been provided and equipped by the State board of agriculture, the Indianapolis Park Board, and a commercial firm interested in displaying playground apparatus. An addition to our baby building is promised which will care for all of our child-health activities at the State fair.

There are many other very valuable ways of presenting standards of maternal and infant care. We believe that although the major activity is teaching in rural communities, "it pays to advertise" through state-wide groups when suitable opportunities are offered.

DISCUSSION

Doctor Blachly. Is it Doctor Schweitzer's plan to continue doing this work herself until she covers the entire State, or is she trying to leave in the minds of the people the impression that they themselves should take up this type of work and finance it themselves as soon as possible?

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Mrs. Dillon. Do they go with this itinerant teaching service into counties where work has already been started or only into counties where there are no other workers to do it?

Miss Osborne. Do the counties pay for their own equipment?

Doctor Smith. I should like to ask Doctor Schweitzer whether she worked up any prenatal clinics to wind up the mothers' classes.

Doctor Schweitzer. I think there are public-health nurses in more than one-third of the counties in the State. There are health officers in every county. Some public-health work is being done through the county and township health officers in every county. So I can answer that question by saying yes, we do go into the counties where work is already established; but I imagine you mean to ask whether work in maternal and infant hygiene in these counties was already established. In a few counties it was—in the larger towns; but as a rule there is none in the small towns, and we do go into any county, regardless of whether this work has already been established or not. However, in the larger towns where the work is well established and under way, we ask the persons who are doing this work whether they wish any additional work to be done. In some towns they do and in some they do not. For example, Elkhart, which started the child health center work with our help and with our initial examination of children, has progressed to the point where it has four permanent child-health centers. Yet they feel that they always want more work from the clinics whenever they can get it—anything in the way of stimulating greater interest of people in the work. South Bend, however, does not care for it. A very good baby clinic is functioning there, splendidly conducted by the best physicians in the city; and they have a fine visiting nurses' association, consequently they do not care very much for work from the State. But we do work out in that county because they have no county organization except county nurses doing the work, and usually the nurses are very glad to have any assistance to enable them to reach additional families or to bring the work before the people from a different point of view so as to create greater interest.

The counties do not pay. We carry our own equipment. The only thing they furnish is the room, and occasionally we have been asked for rental for the room. I have added to our organization sheet, "We do not pay any rent."

We have no prenatal clinics in Indiana because the State board of health does not approve of the making of examinations by the State workers. If any examinations are made at all they must be made by local physicians. However, as I said this morning, we do illustrate how some of the things are done, so the women feel no hesitancy in following the physician's suggestions along these lines.

At the close of our mothers' classes we have quite frequently a follow-up child-health conference. Women throughout the county are invited to bring their babies to the county seat for examination if they care to, and through the instrumentality of these classes in the county from 60 to 80 babies are brought in.

Doctor Blachly. Do you intend to continue the work yourself?

Doctor Schweitzer. We have three physicians and three nurses doing this work, and we hope to be able to continue until we have covered the entire State with mothers' classes. Our idea now is to

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keep each physician in a certain part of the State. While she is conducting her mothers' classes during these five weeks she is also organizing child-health centers.

There are certain times in the year when we can not work in the river counties because of the difficult going, but we plan to go back into those territories where we worked last summer and continue our child health center work, supervising these centers, obtaining as much assistance as we can from local physicians, and trying to encourage the local people to take over the centers, with periodic supervision from the State department. I think that is going to be the crux of the whole situation, namely, getting these taken over by the local people and carried on with just occasional supervision from the health department; but we expect to give monthly or bimonthly supervision for a time at least. We believe that a good many people will welcome these clinics. We have tried this and kept them up for some time, but for various reasons most of them have been discontinued except in towns like Elkhart and places with a population of 30,000 to 50,000 people, which have facilities for carrying on this work. At first that work in Elkhart was supported entirely by volunteer contributions, but it is a permanent part of the city's public-welfare work now, maintained by community funds.

Doctor STADTMULLER. Have you an outline of work, or do your physicians all follow a set form of lectures?

Doctor SCHWEITZER. Yes. I shall be glad to let you have an outline.

Doctor STADTMULLER. I should be very glad to have it.

Doctor SCHWEITZER. All our physicians have general outlines that they follow, but each one works out the individual lecture to suit herself. We have here a complete set of things that we distribute, including the Children's Bureau publications. There is an outline of our finance plan and our general plan of work, then on the next page a tabulated statement of the money that we have spent, the helpers that we have had in our division, and a few of its accomplishments. These have been distributed to workers throughout the State, to medical people, and whoever is interested in Sheppard-Towner work. They have been distributed to persons in our State legislature and to committees who had charge of the appropriation. We have found it very helpful to have a concise statement of what we have accomplished. I have a number of these if you care to look them over. There is just a little publicity attached that we use, and the basis for publicity is mothers' class work.

The CHAIRMAN. Our next speaker is Mrs. Gertrude S. Hasbrouck, of Wisconsin, who organized the infant-hygiene courses in that State. She is particularly interested in having the instruction in infant care and prenatal care given through the schools. The Wisconsin Board of Education has taken over, almost as a mandatory proceeding, the instruction of little mothers' classes. The work has gone also into the normal schools, the teachers and the normal-school students receiving this instruction through Mrs. Hasbrouck's organization.

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LITTLE MOTHERS' CLASSES

Mrs. Gertrude S. Hasbrouck, Organizer of Infant-Hygiene Courses in the Public Schools of Wisconsin

I have been asked this morning to tell you of a phase of maternity and infancy work which Wisconsin is finding most satisfactory, not only because the State anticipates immediate returns for values expended but also because it is strong in the belief that a splendid foundation is being laid for any phase of maternity and infancy work which it may wish to develop in the future.

I was much interested at the morning session on Monday to note the general agreement of the speakers that to develop a more widely appreciated and used prenatal service it will be necessary to promote in the public a more receptive attitude of mind, and that this can be accomplished only by the "education of the laity." Education is generally conceded to be a slow process, not something that can be acquired at one sitting or one hearing; and I waited anxiously for a suggestion as to the most favorable psychological and chronological time to begin this education of the laity.

But it would seem that the privilege of offering the suggestion is to be accorded Wisconsin or, because of the strength of its conviction that it has the solution of the problem, it will, with your permission, assume the privilege. This solution is epitomized in it's slogan, "Every Wisconsin girl educated for intelligent motherhood."

Before presenting the outstanding phases of our work, may I explain that at no time am I referring to the familiar "little mothers' classes"? We are not advocating "little mothers' classes" in Wisconsin because we are convinced that we have a better and more inclusive project for popularizing this phase of education. This project fundamentally aims to reduce infant mortality and morbidity, to lessen the number of physically defective and deficient children, to develop in the mothers of the future a keen appreciation of the importance of health in babyhood, and to induce a receptive attitude of mind toward any and all opportunities that make for better health.

If this education is desirable for a few, it is desirable for all. It takes no more time nor money to reach a hundred than to reach a handful. Our first work, therefore, was to find the way to make our teaching universal, to reach every potential mother in the State. This could only be done through cooperation with the State departments of education. With this cooperation assured, the first step of our project was accomplished. A course in infant hygiene as an integral part of the State educational system was indorsed and forcefully recommended by the State department of public instruction and the State board of vocational education, and was recommended as a definite part of all normal-school training by the State

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board of normal regents. The bureau of child welfare prepared the course of study, provided a full-time organizer and instructor, and in cooperation with the three boards mapped out the pioneer work.

The first consideration was to decide where in the school system this study should be placed. It was a foregone conclusion that it must be sufficiently early to guard against loss by the premature termination of school life, as girls who leave school early usually marry young and have larger families and the loss of this instruction would, to them, be irremediable.

Psychological factors also enter into the placement of this course in the lower grades. The egoism of adolescence is ever prone to apply personal measurement to each new fact and theory, with the result that a reactionary or indifferent attitude toward this study is sometimes met in the older adolescent girl, whereas to the younger girl it is quite the most delightful phase of education she has yet encountered in her school life. This enthusiastic enjoyment will be the strongest factor to fix the instruction in her mind against a time of need. For these reasons it was agreed that the course should be placed in the prehigh-school grades, anywhere above the fifth. It may be given as a part of the home-economics, physical-education, or physiology and hygiene course as it can best be adapted in each school system, with the exception of the rural schools, where its place is definitely determined by the State department.

The second consideration was the preparation of a course of study, with a thought to the future when it should be authorized and standardized and made an integral part of the public-school curriculum. This need was met by a textbook which covers the fundamental, basic principles of the care of the average normal baby during the first year of life. It is, in fact, so simple that no teacher should find it too difficult to present. It is concise, direct, comprehensive, and arranged in logical sequence; it is sufficiently adaptable to meet the exigencies attendant upon the adjustment of a new study into the curriculum.

The minimum time required for the course is 10 hours. This is a very short time for the work we wish to accomplish, but if we demanded more than that we should work hardship in the rural schools. However, as we anticipated, appreciation of the work has extended the time given to it, and the majority of the schools are giving much longer courses.

A little handbook of helps and suggestions was also prepared for the use of the teachers. The textbook is not divided into lessons because of the great variance in the time given to the course in the different schools. But in the handbook outlines of lessons are prepared so that the teacher is provided with a guide to help her in apportioning the time allotted the course in ratio to the importance of the subjects. Among other helps in the book is a model lesson with problems, test questions and answers for examinations, suggestions for related work, and a list of equipment for demonstration purposes. These books are provided for the schools, free of cost; the manual in numbers sufficient for class use, the handbook for teachers. To each school, as it takes up the work, are sent patterns of the recommended open-front layette, blanks to use for securing the

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certificates, letters of special instruction, and other helps as the school or the teacher may seem to require them. The books go to the schools stamped "School property." Personal, unstamped copies may be purchased for 5 cents each.

The State board of health also gives a formal certificate embellished with a large gilt seal. The use of the certificates is in no way obligatory, but if they are used the girls must qualify. Each must have seen the baby bathed, must have seen a bottle formula put up, and must have made a passing grade in a written or oral test. We send definite instructions with our blanks, which the teachers fill out and return with the list of pupils who have qualified. The certificates are then prepared and sent from our office.

In the past it has been customary to have this teaching done by nurses. While it is apparent that the underlying principles governing what is taught must be authorized by the medical profession, the actual presentation of the subject is best done by those trained in the methods of teaching. In no sense is the subject matter so professional as to bar the teacher from its presentation. Our aim is to educate all women in mothercraft; this includes teachers. What the sixth-grade girl can comprehend surely the mature and qualified teacher can present. However, if a public-health or school nurse is available, the teacher is at liberty to call upon her for the demonstrations; but it is the teacher's responsibility that the text of the book advocated by the State department of public instruction is adhered to. Uniform and authorized methods of procedure are thus insured.

We advocate that every part of every lesson be demonstrated so far as possible. Equipment is therefore a necessary adjunct in the work. The articles on this table [indicating] compose the standard equipment which we recommend for use in the schools. As you see, it includes a doll, preferably the Chase hospital doll of the size of a 2-months-old baby; an open-front layette; all articles used for giving a bath and for preparing a bottle feeding; a basket bed and its accessories. I should like to have a whole hour to talk about this equipment, to show you just what we have and why it was selected. There is not an article that has not been tested with the words: Sanitation, hygiene, utility, and economy. We have given thought to the selection of each article, and we feel that, up to the present time, we have the best possible choice. To-morrow we may see something that we think is very much better than anything we have here. If so, we shall change, but to-day this is the standard equipment for our schools. It may be necessary for some of the schools to substitute and to borrow for a time, but we expect that ultimately every school with grades eligible for this work will own a set of this standard equipment as a part of its school property.

The problem of securing equipments has not been a difficult one. Very generally there are school funds available. When this is not the case, the parent-teacher association or some of the women's organizations give a helping hand, and sometimes the girls earn the money. I find, too, that the men's organizations are most enthusiastic about this work and generous with their help. You know, these men of ours have sung and written a great deal about "The hand that rocks the cradle" being "the hand that rules the

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world" [laughter]. It is strange, is it not, that they should be so late in realizing that to do this rocking safely, education and instruction are needed?

I have been asked especially to speak of our method of approach to these results. The first thing we did was to learn how much of this type of instruction was already being given in the schools. Naturally we could only expect to find it where home economics or domestic science was taught. A questionnaire was prepared covering such points as: Who gave the instruction, nurse or teacher? How much time was given? What books were used? What equipment? How was equipment secured? Permission was obtained to send the questionnaires and the accompanying letters to the home-economics teachers of the State in the name of the superintendent of public instruction. They were promptly returned, and the teachers were divided into three classes: Those doing the work, those who would at least make a beginning that year, and those who could not do anything before another year. This questionnaire proved that while much instruction was being given it was lacking in completeness, that it was without standards or accepted authority as to methods and text, and that most of the work was being done in the high schools—an irreparable loss to the girls who left school prematurely.

After a careful study had been made of the school system and the State courses of study to learn where the course in infant hygiene could best be incorporated into the curriculum, the project was prepared. It dealt with each class of schools in the system and suggested where the course could be introduced, by whom it could be taught, and how the books and necessary equipment could be provided. The project was submitted to the department of public instruction, the State board of vocational education, and the State board of normal regents, and with a few minor changes received their sanction. The State department of public instruction referred the project to a senior supervisor, and together we worked out the details.

The rural schools were our greatest difficulty. In order to meet the problem, we revised the eighth and ninth months of physiology and hygiene for the eighth grade and prepared definite instructions for the presentation of the course. The details are carefully worked out so that the teachers will know just how much they must cover in those two months, how they are to do it, how they are to secure the extra time for demonstrations, and what disposition may be made of the boys when the teacher does not wish to include them. Copies of this revision are given to the rural teachers in training, and, upon personal request or the request of the county superintendent, to the rural teachers in service.

The next step was to get to the teachers the information that this course was to be installed. Letters were sent from the various State departments and boards to their particular schools announcing the new course, strongly recommending its immediate adoption, introducing the State organizer, and giving her general authority to inaugurate the course. These letters were sent to the city and county superintendents of schools, to high-school principals, to grade principals, to institutions training teachers, and to summer schools and institutes.

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The field was then ready for the State organizer. That honor is mine. My time is divided about equally between teachers in service and teachers in training.

In the State normal schools, of which there are 11, the work is given usually in the home-economics course, but it may be given in the physical-education or the physiology and hygiene course; it is given also in the rural departments. There are 31 county rural normal schools and 27 high schools with teacher-training departments. When working in these schools I usually give an entire day and include the boys for part of the work.

No attempt is made to visit these schools each year. After my visit the teachers are expected to finish the course, and to repeat the entire course each year thereafter. If, however, the teacher feels inadequate for the task or there is a change of personnel, effort is made to repeat the instruction until they are able to handle the course for themselves. As a result of questions from the girls or definite requests from the teachers it is often possible to give much prenatal instruction.

While the primary purpose of my service is to train and assist grade teachers I also work in the high schools. The work of installing the course in the city schools is often done at the request of the city superintendent. Next year will see the course in infant hygiene taught in the school system of every city in the State.

As we anticipated, with the foundation infant-hygiene course in the grades there has been a consistent demand for an advanced course in the high schools. These requests have not as yet been met by our department, but many high schools are working out individual courses. The city of Madison is particularly progressive. It is giving a 36-hour home-making course to the senior and junior high school girls. Child management is studied—methods of dealing with the obstinate child, the stubborn child, and the child who is finicky about food—along the lines we have listened to this morning but by methods adapted to the understanding of the girls. Prenatal instruction is given by a woman physician—how the food and health habits of the mother affect the child, why the mother should have supervision during pregnancy, labor, and the aftercare of the baby and mother. Lastly, two lectures are given on our national problem: The loss and waste of life in maternity and infancy.

Additional contacts with teachers in service are made at institutes, summer schools, and teachers' conventions.

Wisconsin has a wonderfully developed vocational and continuation school system, as you probably know. The law reads that every city of 5,000 inhabitants must have a vocational school,[1] and every city of less than 5,000 may have one. Many of these schools were giving a very satisfactory course in child care before the infant-hygiene course was authorized. Now it is a definite part of the curriculum. In the Vocational School in Milwaukee, which has an enrollment of 12,000, it has for some years been the policy that each girl in attendance must take a home-making course. We hope a like rule will be made to apply to the boys. Why should they also not have education and training in home making? Surely

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[1] Wis., Stat. 1923, sec. 41.15, subsec. (1) ; sec. 41.17, subsec. (1).

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they will be better citizens and better fathers for a knowledge, even a superficial one, of eugenics, nutrition, health, and child training. How many times in the home do we see the superior health knowledge of the mother set aside or rendered nil by the well-intentioned but more ignorant father? Our next step (and may we take it soon!) is to train our boys as well as our girls for more intelligent parenthood.

When presenting this work to a class I usually demonstrate handling, dressing, and bathing the baby, because of the opportunity to illustrate the difficult technique involved. However, I never let the girls lose sight of the fact that the most important thing that can be done for a baby is to give him the right food; that more of his future happiness and success in life depends upon the food that he has during the first year than on any other health factor in any other one year of his life. The second most important thing is the regularity with which the baby is fed; a baby may have the very best possible food for his particular needs, but if his caretakers have not a sufficient amount of intelligence or self-control to feed him by the clock, his whole health morale may be seriously impaired. The third most important thing is sleep; the fourth, sunshine and fresh air; and the fifth, comfort. As a subheading under comfort comes handling, bathing, and clothing.

When working with a class of teachers I do my best to stimulate and inspire them to vitalize their teaching and humanize their interests, and to impress them that, if they would realize results in teaching health, they must keep away from cut-and-dried methods. True, we still have to teach many nonessentials, for example, the names of the 280 bones in the human body (I think that is the correct number), when it would be much more intelligent and profitable to spend that time in teaching what to eat to make good bones; but little by little we are moving on to better things and better ways. I have great sympathy for the boy, a conscientious little chap, who went to his teacher at the close of a dry-as-dust course in physiology and said, "Teacher, I know where my liver is, but I don't know where my bacon is." [Laughter.]

In normal schools at least one period is devoted to methods and procedure. A variable but definite time is given to presenting the fact that this course of study has become a definite part of our school system to meet a great national problem; that our high infant death rate, high infant morbidity rate, with its aftermath of physically defective children, are facts that threaten the strength of the American Nation; that dead babies, sick babies, and physically defective children are the heritage of ignorance; that education is the solution; and that the full value of this education can be realized only when it is given in time and given to all; that there is no public institution where all can be reached and intelligently prepared for the supreme obligation of life, parenthood, but the public schools.

DISCUSSION

Doctor Blachly. I should like to know how much training the teachers have had in child care and child training before they start to work?

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Mrs. HASBROUCK. They are expected to have some training in the normal schools at the teachers' institute or some other teachers' club. However, the superintendent of public instruction definitely states that with the handbook and manual of infant hygiene no other special training is necessary to do this work acceptably. We are teaching only the simple, fundamental principles of the care of the average normal baby. Such information should be the educational equipment of every woman if she is intelligently trained for motherhood. The course is worked out in detail and is complete in these two little books. When the teachers master these we feel that they are quite competent to teach all that we request them at the present time.

Miss MARRINER. Are you going to send those to all of us?

Mrs. HASBROUCK. Yes; I shall be very glad to. I have a few envelopes of the material that we are using left here. I brought enough, I think, for everybody.

Doctor STADTMULLER. I should like to have you tell us how you persuaded the State board of education to let you introduce this into the curriculum. I have not been able to do that in California. They say they have had so many things crammed into the curriculum that they are taking subjects out instead of putting them in.

Mrs. HASBROUCK. Where this goes into the home-economics work it is not additional; it simply displaces some other work; for instance, cooking and sewing. Where it goes into physiology and hygiene it does not add a number of hours of work for the teacher; it merely displaces something else, and the same is true if it is put with physical education. I presented to our State superintendent of public instruction my argument that the infant death rate is a national problem and that the only way we can ever meet it is by educating the children of the State so that the knowledge would become the common property of all the people; and I evidently convinced him, because he has been most cooperative.

I think you would be interested to know that in the vocational schools we are able to give quite a little instruction in prenatal care. Where I have met the teachers and feel that they are ready for this advanced work, I send material from the State bureau and the United States Children's Bureau. Often I am able to give prenatal instruction in these schools when I am there to present the infant-hygiene work. In the county normal schools and the high school teacher training classes I always try to give some work along this line also, just enough to make those girls comprehend that there is something which they as intelligent women should know about themselves. When I go before the State normal schools and have the assembly period, as I do usually both in the summer school and in the regular school session, or when I have my groups of boys and girls in the county normal schools, I try to make the boys feel that they too have a part in this, that it is something that can not be left entirely to womanhood, that the supreme obligation of life, the gravest responsibility and the highest duty that ever comes to a human being is that of parenthood, and unless we are prepared to meet that obligation intelligently we can not feel that we are doing our duty to ourselves, to our country, or to future generations.

The reaction from the boys is very wonderful. I have yet to meet a group of boys that in any way have shown the least embarrass-

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ment. They seem to take these thoughts very seriously. I can not say always that the girls have shown the same seriousness when boys are present, but I have yet to meet a group of boys who show the least bit of levity. In the high schools also I often include the boys in the work that precedes actual demonstration work. I believe that in so doing I perhaps lessen the possibility of levity that might come from the girls having this "baby work." I remember in one high school where I had a class of about 300 (I had grade children also) there were more than 80 high-school boys. The principal helped me bring in my equipment. When he brought in the doll he held it high, and of course it aroused a shout, which was all right—I try to have the children have as good a time as possible. But I felt that he had struck the wrong note, and that if I left the matter there, the course would be the butt of a great deal of levity. I asked the principal if he would leave his boys for half an hour, adding that I would dismiss them when I was ready. He agreed of course and I presented to those high-school boys the problem of our infant death rate. I gave them some of our State statistics and those of other States, by comparison and facts arousing their interest and their pride. Then I went on with a good deal of the talk that I usually give to normal-school students. When those young boys got up to file out, I watched them carefully; not one of those 80 boys gave any side glances or showed that they felt the least bit of embarrassment.

Another instance I like to remember was with a group that included a rival normal school and a State school of agriculture and domestic science. There were an unusual number of rather young boys in the school of agriculture—probably 14 or 15 years old. It was the last of the year, and the superintendent said I might keep them as long as I desired and dismiss them for the day when I had finished. They seemed much interested in the work, and I kept them almost two hours. When I had the baby at the point where she was ready to be put into the tub I thought perhaps it was well to dismiss the boys. I said that I had enjoyed very much having them in the class but that they were now excused for the rest of the day; however, if they wished to stay I would be glad to have them. I never dreamed that they would remain. The boys sat in their seats looking straight to the front. Not a boy looked right or left to see whether any other boy in the class was going or not. I repeated the permission to go for the day because I thought they had not understood. Then one of the teachers tried to make them understand that they were excused for the day if they wished to go. Not a boy moved. They sat with faces to the front, determined to see it through, and see it through they did. I omitted none of the details I am accustomed to give to normal-school girls. Later in the day I met one of the older boys in the hall. He came up to me and said, "Madam, that was a mighty fine talk you gave us."

Quite often I find in county normal schools that in mixed groups the boys ask questions and the girls do not. Now in our one-room rural schools where we have men teachers the problem arises, who is going to teach this course? I have asked this of our State superintendent and other school men. The general opinion seems to be that

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if a man takes a position and infant care is one of the things to be taught, he would be expected to teach it. Just how he is going to get by when it comes to bathing the baby I don't know. But that is his problem.

[Meeting adjourned.]

WEDNESDAY, JANUARY 13—AFTERNOON SESSION

DR. BLANCHE M. HAINES, DIRECTOR, MATERNITY AND INFANT-HYGIENE DIVISION, THE CHILDREN'S BUREAU, PRESIDING

The CHAIRMAN. Doctor Abercrombie, of the Georgia Board of Health, will read to us the paper prepared by Doctor Bowdoin, who could not come to the conference on account of sickness in his family.

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THE USE OF COUNTY UNITS IN RELATION TO COUNTY ORGANIZATION FOR WORK UNDER THE MATERNITY AND INFANCY LAW

By Joe P. Bowdoin, Director, Division of Child Hygiene, State Board of Health, Georgia

[Read by Dr. T. F. Abercrombie]

With a credit of $29,530.55 in the United States Treasury for work in Georgia and with nothing to match it, we faced a necessity for finding a like sum. We felt that Georgia, with her 3,000,000 people and estimated 6,000 midwives, faced a responsibility that must be met in some way. We could not match the sum with State board of health funds for the very good reason that we have not received an increase in appropriation for six years, and there is none in prospect for the next two years in spite of a constantly increasing demand and expansion of the routine work. In this extremity we appealed to different communities and offered to match their money for a full-time maternity and infancy nurse—reserving the right to reject or accept such a nurse and to supervise her work and direct it—this nurse to be under the local supervision of the county board of health or some agency that was mutually agreeable.

We succeeded in getting $27,290 through this source and a small appropriation from the State funds to take care of the expense of the healthmobile, leaving us a balance of unmatched funds of $2,240.55, or a total budget of $54,580. In addition to this the State paid for printing and furnished quarters, accounting, and other incidentals.

This method of county units under supervision gave us unified work. The programs were all arranged by the division, and the midwives' classes began and finished at the same time, as also the mothers' classes and little mothers' leagues. The work was coordinated throughout the State; the units were all doing the same thing. We had the reports coming into the office along the same lines each week. These reports are made on forms furnished by the division, and each nurse in addition to her statistical reports gives a narrative report. Thus the director keeps in touch with all nurses, not only those in our employ but all public-health nurses. The director issues a monthly letter discussing various questions, making suggestions, keeping the work of the nurses coordinated along the same lines for the same period. The supervising nurse makes regular trips of inspection and special trips where and when necessary, keeping the entire nursing force in close touch with the central office.

We also have regular conferences; all nurses report to the central office twice a year, the summer convocation lasting several days. It is really an institute; we arrange the course and invite especially qualified physicians and nurses to give addresses. This gives us unity of thought, coordination, and cooperation.

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The county unit does the State and local health work a vast amount of good for the reason that it brings us in close contact with the people. It places the Children's Bureau, the State board of health, and the people in copartnership. The local unit does this as nothing else will. The nurse visiting the expectant mother, assisting her physician in keeping her well, making the details of the expected event easy for the mother, visiting her and then her baby and keeping up with the baby until it is in school establishes the strongest tie that we can conceive of. The spirit of cooperation, partnership, if you please, ripens into the closest relationship. Perhaps this plan of copartnership with a smoothly working program and a nurse who has a genial, friendly disposition is the strongest influence that we could have to bring about the appointment of a full-time commissioner of health.

The counties contiguous to the one in which the nurse works will be inspired to give attention to sanitation of the home and public buildings. She should be able to arouse enthusiasm in the persons with whom she comes in contact and to convince them of their responsibility, thereby causing them to have a higher sense of their duty toward their fellow man. If her work is good, true work, her example will spread, and other communities will want like service. In our organization we have three itinerant nurses who go into a county and spend about a month or six weeks teaching midwives, mothers' classes, and little mothers' leagues. They make it a point to become acquainted with all the physicians, civic and religious organizations, and officials, the latter including most of the politicians. They travel by automobile, each furnishing her own car. They go into the remote counties and to the backwoods districts of each county. They hunt up midwives and get them to come to classes. This brings them into contact with the masses and especially with the local registrar of vital statistics, who is generally the justice of the peace in his section.

This gives a splendid opportunity for contact of the best type. In addition to these nurses we have at present the cooperation of the physician who is loaned by the United States Children's Bureau to aid us in the instruction of the negro midwives. She is doing most excellent and thorough work among her people; her services are of great benefit to us. It might be well to mention that all our midwives are negroes, and in each county where the work is completed we make a permanent county unit by organizing them into a midwife club with a president, vice president, and secretary. They meet once a month and have a regular program. All are expected to keep up their study, as our certificate of registration is good for only one year. Reexamination keeps up interest and in time will afford us the opportunity gradually to improve the personnel of the midwives of the State. These clubs also help us to get the unlicensed midwife in line. We require physical examination and a negative Wassermann. This examination brings the midwife class in closer touch with the physician, another binder for the county unit.

In short, without the county unit plan in Georgia the Sheppard-Towner Act would be a complete failure; with it, we are doing untold good.

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DISCUSSION

Doctor Abercrombie. I do not know whether you all know the Georgia law or not. We have on our statute books a law creating a county board of health in every county in the State, and upon two successive recommendations of a grand jury it becomes obligatory upon them to employ a full-time commissioner of health.

It might be well to repeat that all our midwives in Georgia are negroes. In 1924 the Georgia Medical Association passed a resolution calling on the State board of health to draw up rules and regulations that would in some measure supervise and control the midwives in our State, and that was begun on January 1, 1925.

The Chairman. We thank you very much, Doctor Abercrombie. We feel flattered that the health officer comes to give the report himself.

Doctor Abercrombie. It is a pleasure to be with you.

The Chairman. I think you will like at this time to hear from the Chief of the Children's Bureau.

Miss Abbott. I do not know that I have anything especial to say except to express my great gratification at the development of the Sheppard-Towner work as shown in the discussions here at this conference and in the exhibits and your reports. Those of us in the Children's Bureau have watched with great interest the way in which the plans have developed in the States from year to year and the activities that you are engaged in become better established in the local communities with the different methods in different States.

As you may have heard, either through the group at home or since you have been here, the question of the extension of the Sheppard-Towner Act is up at this session of Congress. The authorized appropriation was for a five-year period which expires June 30, 1927, and we are asking for an extension of that authorized period—asking it now because we think the legislatures that meet next January ought to know what will be available and because we need the same information in making up our next year's budget.

I am very eager to see any of you who have questions you wish to ask me. Doctor Haines knows a great deal more about your work than I do, but I do appreciate very much having the chance to meet and know you, and I hope to be able to get out into the States next year more than I have during the past year or two.

The Chairman. I wish to clarify one thing. I have written to you about all sorts of reports, and I may have confused you. When I was a State director the two semiannual reports that we had to get out for the Children's Bureau always seemed to me two extra reports, because I had to get out one annual report for my health officer. When I came here I saw the semiannual report from this side of it, and realized how difficult the compiling of it is. Consequently, it has seemed to me that the simplest way was to have one annual report which would coincide with the Government year, and that closes always on June 30. But if you are getting out a certain monthly report, or a quarterly report, or whatever you are sending to your State chief, just let us have a carbon copy of it, so that we can keep in touch with you and also have some items for our news letter.

In addition to these you prepare your financial report; that one we need twice a year, just as we have been having it.

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I find that some of you are getting out very complicated monthly reports, and a few States said they were "struggling" with the report. Because I had struggled so hard in my own State and had arrived at what I thought was a fairly good report, I have had copies of two types of reports typed for distribution. The first is a very simple little one that comes from Texas. You see, we had something very good yesterday from Texas, and this very simple little report they print every month in their "Gleaner" [indicating]. This other report [indicating] is my own, which has the cumulative figures from the beginning of the Sheppard-Towner work. I found this important because somebody was always asking me "How many conferences have you had? How many this or that have you had? How many children have been enrolled in the little mothers' league?" and so on. So I am sending this to you not as a form for you to copy but simply for you to see; and on the back of this pink sheet is a device we have for checking up on defects noted in conferences (1) by age groups, (2) by sex groups, and (3) by defects. There is one copy for each of you, and you may take them and look at them afterwards.

I think we are ready to proceed with the afternoon program. Each speaker has been requested to limit the talks on cooperation and organization of groups to 10 minutes each. I feel very apologetic about this program. It is too full, and yet we must have some of these things brought out at this time.

Mrs. Mathews, of Colorado, will discuss the cooperation of physicians. She is of the laity, yet she seems to have been able to get the cooperation of physicians. We who are physicians think it takes a physician to handle a physician, but evidently sometimes they are very well handled by a lay worker.

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THE COOPERATION OF PHYSICIANS IN MATERNITY AND INFANCY WORK

Mrs. E. N. Mathews, Executive Secretary, Child Welfare Bureau, Department of Public Instruction, Colorado

I am glad that the chairman has spoken about my being a lay worker. We are in the department of education. We are not in the State board of health at all, and Colorado has no department of child hygiene. It has a department of child welfare, and since this is part of the department of education, it is recognized as educational, and no physicians fear that we are coming to take their business away from them.

Possibly the most important factor in the success of the traveling child-health conference is the personnel of the working unit. In Colorado we have been most fortunate in having a group of workers who appreciate that this entire work is founded on a medical basis and that without the whole-hearted support of the medical profession it not only will fail to progress but will absolutely fail in the end.

In Colorado the workers in the child-welfare bureau speak gratefully of the cooperation of the physicians with the Sheppard-Towner work, for that cooperation has been of such a high standard and of such generous proportions that we are deeply appreciative and truly thankful for the spirit that has prompted it.

During the years the Sheppard-Towner bill was fought through Congress we heard a great deal about paternalism and about " State medicine." The American Medical Association was not backing the bill, the physicians in our State were none too friendly, and there was considerable talk locally and nationally about the part which old-maid social workers and nurses would play in telling mothers how to raise their babies.

Fortunately for Colorado a group of pediatricians was alive to the need for the maternity and infancy work. They were strong advocates of public health and heartily approved the Colorado outline of activities for maternity and infancy. They ranked with the leading men in the medical profession in Colorado and were accepted throughout the State as authorities. These men were, in very truth, responsible for the success in our work. Their professional prestige and our position in the department of public instruction marked our whole endeavor as educational. It was something we could teach the people; something the parents could learn; something the knowledge of which would benefit the little ones. There were no paternalism, no " State medicine," no compulsory corrections, no invasion of the local physicians' rights, no interference with the sanctity of the home. There was simply the spreading of health education.

Since it was an educational measure the University of Colorado early took an interest in the work, and through its extension division the department of organization cooperated with the bureau of child welfare to the extent that all the child-health conferences are organ-

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ized by the university organizer. His first effort on entering a community is to get in touch with the local physicians and dentists. If they are favorable to the work, the organization of a conference continues; but if the local physicians object, the work in that community is withdrawn, because we feel that no conference is complete unless the local physician is among the working group. Several amusing incidents have arisen from these withdrawals. When the conference would be in adjoining towns some physicians in the town which had declined the demonstration would be curious or else suspect that some of their patients might be attending the conference seeking advice. They would drop in at the examination, look on for a while, then offer their assistance, and finally make every endeavor to prevail upon the conference to stop in their own town.

It has been customary in each town to ask the attending physicians to dinner after the conference. Here different cases are discussed, future work is outlined, and the local physicians assist in planning the follow-up work to be done in their communities. In counties having county medical associations a meeting of the association is usually called for dinner, and our conference physicians are asked to talk. After this dinner in some counties arrangement was made to hold clinics to which the physicians brought their special cases for consultation.

In one county all the county medical and dental groups assisted at the child-health conference in relays of one hour each, and one evening they all attended the dinner. They had voted that 2 physicians should look after the practice of the entire group of 22 in order that the rest might be free for the conference and for the lectures. The most appreciated cooperation is that where physicians in adjoining localities drive for miles to assist in the conference or to relieve the local physician that he may assist. This has been the custom in small communities in the dry-lands district as well as in the more distant communities in the mountains.

In Colorado, as in all States, we have the old-time physician, who has lived in one community the greater part of his life and looks askance at preventive medicine. No greater success has been achieved by our entire group than to convert some of these men of the old school to the point where they will undertake a graduate course or "run into Denver to look in on the new ideas" expressed in our new State medical school.

The medical profession has responded beyond our highest hopes in every part of Colorado. Since the beginning of the work only 3 physicians have absolutely refused to consider a conference in their community, whereas 263 physicians and dentists have given from one to three days of their time assisting in the actual work of examining the children. Their greatest service is in continuing this health work in their community after the State help has been withdrawn. They work as volunteers. When the follow-up nurse arranges her clinics after one of the child-health conferences a meeting of all local doctors and dentists is called and they decide how many operations each will be responsible for. For instance, in one town we examined 243 children. At this place was a good throat man, who was delegated to perform all the tonsil and adenoid operations (of which there were 22). These children were cared for at the local

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hospital, and the county physician acted as the anesthetist. Six eye corrections were made also, eight minor operations performed, and dental defects corrected for 107 children. The nurse arranged for the payments for the operations and divided among the physicians the amount collected. The dentists gave a flat rate for filling and a minimum charge on all other work, and this was paid to the dentists.

Another instance was in a town somewhat isolated in summer and almost completely isolated in winter, where we examined 106 children. There was only one physician in this whole district. After the nurse worked up a general interest, the local physician brought in a specialist and his assistant to make the corrections for the children in that community and surrounding district. This same medical adventure has occurred in several other places; and in one small community the situation was cared for in the same way by the follow-up nurse, except that she had to arrange for all professional services, as there was no physician within a radius of 50 miles. Three physicians and a hygienist drove 93 miles Saturday afternoon, and on Sunday morning performed 23 operations, assisted by the bureau nurse, who had prepared in the schoolhouse an operating room, a boys' ward and a girls' ward, where the children were kept 24 hours.

We have attempted to keep in touch with the members of the medical and dental associations at all times. Besides contributing several articles to the State medical journal in the past year, we gave a demonstration rural clinic at the annual meeting of the State medical society, and one of the bureau consultants spoke before the annual State dental society meeting, explaining the work and the value of the cooperation of their society in furnishing a hygienist for State demonstrations in connection with the traveling health clinic.

Last June the bureau held the first of its annual institutes on maternity and infancy. Physicians answered the call to act as instructors and came in from various cities to serve us. This institute lasted three days from 9 a. m. to 9 p. m. We had lectures on prenatal, infant, and child care by the State's leading obstetrician and pediatrician, and lectures on prevention of tuberculosis by nationally known men. There were lectures on teeth and on feeding the infant and child. At night the lectures were for parents—on cancer and tuberculosis, and on the care of the eyes. These physicians were training the chairwomen in regard to the value of child-health conferences, the necessity of holding them at least once a month, and the indispensability of a nurse; and at the same time they were bringing them to feel that a permanent child-health center is a community responsibility which the women should shoulder morally and financially.

One of the greatest services rendered to the maternity and infancy work by the medical men in Colorado was in the matter of legislation. It was the physicians of the State who backed the work to the point where we received our appropriation. The legislature slashed the appropriations for the other bureaus in the State, and we waited in fear and trembling for what would happen to us; but the physicians rallied to our cause and we were given the same amount as in the previous administration. If I had the time to go

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into details regarding our legislative experience you would see that our $5,000 appropriation was an outstanding victory.

Let me add that in Colorado there are only 1,700 physicians registered, and 800 of them are in Denver proper, which contains one-third of our population. Nearly 300 are in Pueblo, and 143 are in Colorado Springs. So you see that outside of these three large cities there are not more than 400 or 500 physicians in the State.

The CHAIRMAN. The next subject is the cooperation of the public-health nurses. Miss Anderson, of New Mexico, who is herself a nurse, will discuss this feature of the use of groups.

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WHY NEW MEXICO NURSES COOPERATE IN MATERNITY AND INFANCY WORK

By Dorothy R. Anderson, R. N., Division of Child Hygiene and Public-Health Nursing, Bureau of Public Health, Board of Public Welfare, New Mexico

New Mexico apparently gets an unusual amount of maternity and infancy work done by nurses outside of the bureau of child hygiene. I think one of the main reasons for this is the fact that our whole State department of health is comparatively new. It was inaugurated in July, 1919—only six and one-half years ago. Since then the communities and counties establishing nursing services have looked to us for guidance in planning their programs and in helping them select a well-qualified nurse. We have not hesitated to suggest what we felt was the best plan of work for them, and the State supervising nurse has made visits to the nurses when she was in their territory, even though they were not directly under her supervision.

The nurses themselves feel the need of a general program including maternity and infancy work, because of the physical characteristics of the counties in which they work. When a nurse has to drive anywhere from 20 to 235 miles to reach a school in her county it would be foolish for her not to try to reach every family in the community visited. The nurse usually inspects the school children in the morning, holds a child-health conference and mothers' meeting in the afternoon, and then visits any people who may be sick in that town. She may be called upon to pull teeth or to prescribe simple remedies. Of course, we know this is not according to medical ethics, but when people live 50 to 100 miles away from a physician and are too poor to have one come to them (because the physicians charge a dollar a mile), or have no conveyance in which to get to a physician, the nurse simply goes ahead and does the best she can. If the case seems very serious she reports it to the county health officer, who is usually the county physician as well, and he visits the case.

When you compare New Mexico with its population of only 360,000 (and I believe this includes the Indians on the reservations) with Washington, D. C., which has about 500,000 inhabitants, you can begin to appreciate how very scattered our people are. For this very reason a strong community spirit exists throughout the State, and everyone works more for the good of the State than for the individual good of his local community.

The State has had severe financial reverses the last few years, due to the drop in the cattle market, severe droughts, and the drop in the price of copper—which was the cause of closing up several mining towns of 4,000 to 5,000 inhabitants. It has been a real struggle for the counties that have nurses to get enough money to pay them, so

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the nurses feel they must give of their best to compensate the counties for their sacrifice. Another difficulty arises from the fact that we have no hospital or clinic facilities to which to refer cases. The physicians are usually generous about donating their services in emergency cases if the nurse will bring the patients to their offices. In some places the local physicians will go with the nurse and health officer and hold a corrective clinic in a schoolhouse. At one such clinic held 68 miles away from the county seat they removed tonsils and adenoids for 10 youngsters, made several examinations of eyes, and gave children glasses if the people were too poor to pay for them. They also reset a fractured arm that was growing very crooked, as the parents were too poor to take the child to a physician.

We understand that Denver, Colo., is to have a new orthopedic hospital supported by a fraternal organization, and we are very much thrilled over the prospect, as we shall be able to get some of our crippled children in there for treatment. We have no orthopedic specialist in New Mexico; many of our children are becoming permanent cripples from lack of care.

There are 16 nurses doing public-health nursing in the State, and all except 1 now come up to the standards of the National Organization for Public-Health Nursing. Two are staff nurses, paid with Sheppard-Towner funds; five are county nurses, paid partly with Sheppard-Towner funds; and the rest are regular county nurses, community school nurses, and nurses in the Indian pueblos. The State school auditor has promised not to approve the budget for a school nurse unless she comes up to the State department of health standards, which are the same as the standards of the National Organization for Public-Health Nursing. I have visited all of the school nurses but one this year, and each is doing some maternity and infancy work. They say, "Why, we can't let it go when there is no one else in the community to do it!" Almost all except the Indian pueblo nurses send monthly statistical and narrative reports to our office. (We have no jurisdiction over the Indian Service as that is under Federal management.)

In order to make the nurses' work more effective the State bureau sends out supplies to any nurse who requests them regardless of whether she comes under our jurisdiction or not.

Since we have a very limited appropriation we have borrowed material and ideas for our little mothers' classes from other States. Little mothers' classes are being systematically introduced into the schools for the first time this year. As the State has a very large Spanish-American population we are training in infant care many girls who would never learn it otherwise, because comparatively few of them ever reach high school. The girls enjoy the work; and at the completion of the course their graduating exercises are held, and the mothers are invited to watch some demonstration in child care. Three girls give the demonstration, one doing the practical work, one telling in English what is being done, and the third telling about it in Spanish.

I might say in passing that we have the only legislature in the country held in both English and Spanish, and this is done according to State law. However, English is being spoken more and more, and as it is also a State law that the schools must be taught in Engish the coming generations will be English speaking.

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Besides supplies for little mothers' classes we furnish midwife certificates to midwives who have completed the bureau's approved course of midwifery and have passed a physical examination. We also furnish the nurses with layette patterns, literature on prenatal, infant, and child care, and diet cards for preschool children.

We have a film-slide projector and films and a daylight screen that we loan to the nurses, and a stereopticon machine with slides, and also several regular health films that the nurses often get some public-spirited motion-picture manager to show in connection with his regular program.

You may wonder why any nurse would choose to work in a State with so few facilities at hand to make her work really effective. Her efforts are worth while because of the great need for the work and the fact that even the most ignorant try to follow her directions, although in doing it they may have to give up some age-old superstition. Many of our native people still believe in the power of the evil eye; and they believe in their medicine women rather than in modern methods. To the nurse who is endowed with the pioneer spirit and the spirit of adventure, coupled with self-reliance and common sense, our State offers the most wonderful opportunity for real service that can be found anywhere.

In conclusion I will say that I believe one of the main reasons for the close cooperation the nurses give us in maternity and infancy work is the real spirit of comradeship that exists between the State bureau of health and the individual nurse. We rejoice with her when she has started some mother or baby on the road to health, and we make our appreciation known through our nurses' news-letter that is issued at irregular intervals.

Here is an incident which shows how much the maternity and infancy work means to the State: About six weeks ago I was with one of my nurses up in a mountain district, and we came to a home where an eight-months-old baby had just died. The family were Spanish-American people who spoke very good English, so while I was laying out the baby, the other nurse and the mother examined an older child of 18 months to see that it was all right.

The Chairman. The next topic under organization and use of groups will be the use of men's and women's organizations. This will be presented by Doctor Richards, director of the bureau of child hygiene of Utah. I think there are some unique features in his plan.

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COOPERATION OF LAY ORGANIZATIONS IN MATERNITY AND INFANCY WORK

By H. Y. Richards, M. D., Director, Bureau of Child Hygiene, State Board of Health, Utah

In discussing the use of lay men's and women's clubs in maternity and infancy welfare work in Utah the short time allotted me will permit but a very brief outline of our methods.

Since the beginning of our activities under the Sheppard-Towner Act we have extended its benefits to every part of the State. I believe that our method of organization has been somewhat different from that of most other States. We have considered every community of the State as one where a child-health center could be established. We learned early that if we wish to reach the greatest number of people we must take the work to them; they would be slow in coming to us. We learned, too, that people have a kind of community spirit which causes them to feel slighted or offended when we ask them to go to a neighboring town to attend a health conference. They feel that their town is just as good as any other. The transportation problem also had to be considered. People resented the necessity of going 4 or 5 miles to attend a conference unless they really believed that something was wrong with their children. We would therefore see only the sick ones, while the supposedly well ones were still neglected. Since these were the children we wished most to see it was apparent that we must go to them.

In order to accomplish this a health survey of each community was made, the various men's and women's clubs were visited, and the prominent local people were interviewed. It was made plain to these clubs and societies that we were very desirous of obtaining their cooperation. Their interest was usually easily obtainable. Many of them expressed a wish to make the organization of the child-welfare program a part of their activities. They were invariably given to understand that the work was state-wide, and could not be considered the special work of any society or club. However, the State was anxious to have them give the bureau of child hygiene their support and to assist where necessary with the finances of a child-health conference in their locality. The small funds needed were easily obtainable by this means. Many health centers, when organized from local lay people, were thus able to obtain scales, sheets, napkins, measuring boards, towels, basins, and other articles.

At a public meeting the work was explained fully, and the necessity of forming an organization was discussed. At this time the advantage of having a community organization representing all clubs, societies, and factions was made clear. As a result the committee thus formed usually had upon it one or more members of each society or club. These representatives were then in a position to keep their club members informed as to the activities and needs of the health center, and thus they anchored our work to the local community. We could then go to all organizations for what financial or lay help we needed. All seemed to have a direct personal

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interest, and were the more desirous to have it succeed. Various religious organizations were treated in the same way in order to avoid all prejudices.

The relief society of the Mormon Church has given a great deal of aid to the Sheppard-Towner work. This organization has a representative branch in every hamlet of the State. It was developed for the purpose of caring for the sick and poor who live in the State or wherever help is needed. Through contributions it has been financially quite strong. Health work has always interested this organization, and when the Sheppard-Towner law became effective the women of this group used their influence to the utmost to obtain the benefits of this law for their State. Maternity and child-welfare work likewise became a part of their program. Each local association was instructed to do everything in its power to assist the State board of health in this field. In many of the localities of the State almost all of the population belonged to the Mormon Church, and its relief society was the only one in the neighborhood. The members have proffered their assistance unselfishly, and have given of their funds. Where they have owned small buildings they have permitted the use of these for the holding of health conferences. They are supplying the maternity bundles under the direction of the State board of health. We have furnished a list of articles to be placed in these bundles, and have given instructions as to how they should be arranged handily and compactly. The method of sterilization is supervised, and the proper care of the bundle is described. These bundles are then loaned to people who are unable to pay for their use, providing that the materials are returned in good, clean condition. Where possible a small fee is charged to cover the loss and depreciation. This rental fee varies from $1 to $2.50, depending upon the locality. It is not the aim of this society to make a profit from these bundles, but only to obtain sufficient funds to replace worn and destroyed material. Many of the physicians, especially those of the most scattered sections, are finding that these bundles meet their every need; and some have gone so far as to require that all their confinement cases obtain them.

In some instances the farm-bureau organization has served as a means of stimulating local interest. Diets, health, and home economics demand a great deal of its attention. Through these its attention is drawn to the children, then to the establishment of a child-health center. It too has offered its assistance in many ways.

By such use of these clubs and societies we have had a very sympathetic associate in every community of the State, some one who would carry on in our absence when possible, and some one with whom we could plan and finally act. In every case, however, we have made it plain that this was Federal and State work and could in no way be considered that of any individual or group. We feel that our success to the present time is due largely to the cooperation that we have had from these lay men's and women's clubs.

Let me state here that we have not fostered the idea of using church buildings or homes or anything of that nature for conferences unless we could not do otherwise. We have felt, as others have already remarked, that the best place for health conferences is some public building, and invariably wherever possible we have used—at least preferred—the public-school buildings. In the winter they

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were usually warmed and cared for; in the summer we had plenty of room so that we could spread out over the building, using three or four rooms if necessary.

A large number of our communities can do absolutely nothing but assist an itinerant conference—and I might state here that our entire program of organization has been on the plan of itinerant conferences. We have but three organized health centers in the State under the definition, probably, that you directors give of an organized health center—and by that I mean holding a conference once a week throughout the entire year with local assistance. We have but three of those, one in Salt Lake, one in Ogden, and one in Murray, a suburb of Salt Lake, just south of it. Those in Ogden and Murray are more or less under the supervision of the State board of health. The one in Salt Lake is not at all under our jurisdiction; it functions quite independently.

The rest of our State is handled entirely by an itinerant conference.

We are not wholly satisfied with what the future holds for us in our child-welfare work. We have not entirely developed our future plans. As I have said, we have gone about organizing every section and corner of the State; and from now on it is going to be a problem of continuing the work. We have felt that possibly the best way of handling our future problem is going to be through the county health unit, but we find that we are meeting with difficulties in getting health units established.

I don't know how it is with the rest of you, but we go into one county and propose to them the organization of a county health unit with a full-time health officer, giving what help he needs, offering to finance the program partly; and the suggestion is not accepted. In some districts we feel that the health units would solve many of the health problems but where the people are so scattered and their resources are so small that they can not do it by counties, we have tried to establish health districts. But we have been totally disappointed in the establishment of health units in counties or districts so far. We have at present three county health units in the State of Utah. I know that many of you are going to gasp at the number. I have gasped at some of the remarks that you have made. You have talked during the last two or three days about your rural sections and your programs and your problems, and you seem to be worrying about them, when I have thought, "Well, if I could ever reach that in Utah, I would have reached Utopia, and there would be nothing more to gain!" Our problems in the West—and I say "West" because I mean beyond the Mississippi River, not beyond Chicago—are certainly different from any problems you have in the East. I do not think that they are harder to handle, but they have got to be met and handled in a different way; and while we are rather proud, I might say, of what little we have done in Utah since the Sheppard-Towner Act came into effect, we still have a lot to accomplish, and we are only hoping that the Federal Government will see fit to assist us at least for another five-year period.

The CHAIRMAN. The next group that we shall speak about is the use of the farm group or home demonstration agents. Doctor Lauer, of Iowa, will speak on this.

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THE COOPERATION OF FARM GROUPS AND HOME DEMONSTRATION AGENTS IN MATERNITY AND INFANCY WORK

By E. H. Lauer, Ph. D., Director, Division of Maternity and Infant Hygiene, State University of Iowa

I construed this invitation to present the matter of the utilization of the farm groups as a request to come and speak very informally regarding this matter. I feel I owe you an apology, after sitting here and hearing three very good papers read, to say that I have not my paper written out, and I shall have to talk informally. I may say, however, I thought of writing it this morning, but I spent this morning over at the House Office Building, and I should like to say in that connection that I think a good many of you will find it very delightful to meet some of your State representatives while you are here. I had one of the most delightful mornings I think I have ever put in, because everywhere I was asked why I was here, and then I could explain why I am here, and it led to a very interesting conversation in each case.

The utilization of the farm bureau has been touched upon by Doctor Richards; and in Iowa this was our main problem. When the Sheppard-Towner law was accepted in Iowa it seemed necessary to create a body of public opinion behind it and to create it in a hurry. Public opinion usually is not created overnight, but this thing needed support and it needed it at once.

I think most of you know Iowa well enough to realize that when we say "Iowa public opinion" we mean farm opinion. The question in Iowa resolved itself into getting the active support of the farm interests, and that was possible through the farm bureau. Although the physicians of the State expressed approval and the medical society unanimously voted support, it was necessary to have popular support also.

The farm bureau took up the matter of the child-health conferences, which constitute the program very largely in Iowa, as in most of the other States. There is a very ironical situation, however, in that. The Medical Society said through its field-activities committee that although it was in favor of this work it did not feel that it could actively hold these conferences but would be very glad to indorse them if they were sponsored by any other organization. They felt that if they sponsored them it would seem that they were drumming up business. Their saying that they did not care to sponsor it directly compelled the bureau to find some one who would sponsor it directly; and the approval of the farm bureau influenced public opinion to a degree that was very fortunate when the matter came up in the legislature.

Now the point is, however, what have we gained besides that? We have established ourselves, I think, but how about the actual work which is to be done? I think you see that utilizing the farm bureau meant rather a double task, namely, to have a certain specific

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type of work done while leaders were being trained to do it. Now that in itself, as it seems to me, is a very complicated procedure; but having the farm bureau sponsor our conferences almost entirely has caused every one of the county units of the farm bureau in Iowa at the present time to have health as one of its major projects. It would seem a foregone conclusion that this would be the case; but it was not true five years ago, it was not true three years ago. But now, as I say, if you take the projects of the farm bureau and see what they have chosen as the work they want to do, you find that health is one of those things, and it is usually given a great deal of prominence. Health conferences appear alongside of instruction in regard to clothing, or alongside of nutrition work, which of course is a matter of health; but in addition I find health (and very often some mention of the Sheppard-Towner conferences as such) put down as one of the projects, together with bovine-tuberculosis eradication, hog-serum problems, windbreaks of the farm, and things of that kind. This certainly speaks well for what may be done in the future.

There is another point with regard to working with the farm bureau. That is, we have tried to show how our Sheppard-Towner program has a connection with other things that are going on in the State, how it is merely one phase of a larger question. You have all done it, I am quite sure, but I think we have had the opportunity of emphasizing it a bit more in Iowa.

Two other projects are being carried on now—or at least are planned and begun—in Iowa that I consider very significant for us. One of these is the fact that we now have a State children's commission, or a State bureau as a result of a commission, with a State commissioner of child welfare. That bureau is going to depend for its success on how thoroughly it can organize the various counties of the State into some sort of working machinery to take care of the manifold problems of child welfare. The other thing which is going on is a project of the child-welfare research station at the State University of Iowa. Through a grant of money from the Laura Spelman Rockefeller Fund it has been possible to organize a program of what we call "parent training," which is largely a preschool matter. The success of this parent-training project and the success of this child-welfare bureau will depend absolutely on how far the farm element intelligently get behind them and do the work.

Through the organization of the Sheppard-Towner work we have created a public interest in these matters. The director of the children's bureau tells me that in counties where the Sheppard-Towner work has been done for two or three years he finds an enthusiasm, an interest, and an intelligence in regard to child welfare which makes it very easy for him, for instance, to organize his committee, or his commission, or whatever it is called. That did not happen simply because a child conference went into that community and examined 25 or 30 babies; but these people have become interested, and they read, and they ask, and they look up things. They no longer turn over the page of the paper that says something about these matters and look at other things. There is a growing body of intelligent opinion on the subject of child welfare.

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At the last meeting of the State conference of social work the conference recognized the fact that there is a spirit of unrest in Iowa. I am an Iowan, and we are not at all ashamed of this unrest. You can not overestimate it. The more you go up and down that State the more you are impressed by its seriousness. But at this State conference a man talked on the relation of farm prices to matters of social progress; and he said, of course, the thing which you all know, namely, that the solution of the farm question lies not in getting better prices nor in regulating production but in better living on the farm.

If we can get the organized efforts, such as the Sheppard-Towner, to make a direct contribution in a specific field to better living in the larger aspect, it seems to me we are building on a foundation which is certainly not of sand and which is going to make it possible to rear an edifice that will stand through the ages. That is why this matter of cooperation with the farm bureau, which was more or less thrust upon us by the situation, has been, it seems to me, a very happy contingency and one which I believe will insure the permanency of the work.

The question of health centers in rural districts is baffling, but I am not so much concerned about how that work is going to be organized if I can feel sure that in one of these rural districts of Iowa—any one of thousands which you may consider, with one physician for a tremendous radius of territory—the men and women wish their children cared for.

The CHAIRMAN. We shall have the discussion on this symposium a little later. The next topic will be the methods of determining the amount of time spent in maternity and infancy work when matching other funds. This will be presented by Miss Marriner, of Alabama.

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METHODS OF DETERMINING THE AMOUNT OF TIME SPENT IN MATERNITY AND INFANCY WORK WHEN MATCHING OTHER FUNDS

By Jessie L. Marriner, R. N., Director, Bureau of Child Hygiene and Public-Health Nursing, State Board of Health, Alabama

When it was decided that our program of maternal and infant hygiene activities should be coordinated with the general health activities of our county health units and that the responsibility for carrying out the aims and purposes of the Sheppard-Towner Act should be delegated to the county health officers, these administrators were confronted by a problem for which there was no ready-made solution. When a county has only one public-health nurse who is expected to apportion her time to maternal and infant hygiene, school hygiene, and communicable-disease control, how shall the administrator guard against the giving of undue attention to activities for which there is an immediate and pressing demand or which may especially interest the nurses? How can he be sure that the maternal and infant hygiene program to which Federal and State aid has been allotted is getting a square deal and that the funds so allotted are not being diverted to other uses than those for which they were intended?

When health officers have appealed to us for advice or help in the solution of this problem our answer has been in the form of a challenge rather than a formula: "Use your common sense and let your conscience be your guide. You will be required to keep accurate and complete records of all your activities and to make monthly progress reports which are based on these records. The reports and the individual record cards on file in your office will be open to inspection for purposes of analysis and study at all times. Your local public has a right to know what you are doing. It is obligatory that the State board of health be informed with regard to your activities. If you succeed in setting up and maintaining a well-balanced program you will unquestionably win the applause of your public. Furthermore the headquarters office will study and analyze your records in order to acquire something tangible, something more nearly approaching a formula of administration for county health work to set before those health officers whose records do not compare favorably with yours. If you do not succeed in making these fine adjustments satisfactorily you will drift into the position of a follower instead of a leader while the achievements of your more successful colleagues will be set before you for your emulation."

From the first it has seemed to us that the most we can hope to do is to provide a system of record keeping and forms for reporting activities which will tend to maintain a desirable degree of clarity and provide us with the means of evaluating accomplishments. A schedule for making these evaluations will need to be worked out,

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and before it can be successfully applied it must have the understanding and approval of the county health officers as well as of the State board of health forces. This sounds perfectly simple and very easy, but in actual practice it has proved to be about as easy as measuring the energy expended by Atlas in bearing the world upon his head, and perhaps as simple as reducing to a formula the portrayal of a sunset on canvas.

The staff of the State board of health includes a corps of regional directors whose duty it is to provide stimulating contact and continuous educative supervision of the county health officer's work. One of the first achievements of the maternal and infant hygiene program must be enlisting the interest of the regional directors (as well as that of the State health officer) in this program and convincing them of its vital significance when successfully carried out as a part of the general plan.

Our first objective was a uniform blank for reporting all county health activities in order to permit comparison of results and to eliminate the use of a supplementary maternal and infant hygiene report (such as had been required during the first year's operation). These blanks must carry items adequately covering maternity subjects without unnecessary details which would increase the labor without increasing the value of the report. It seemed advisable to include a statement of the estimated number of miles traveled and the number of hours devoted to maternal and infant hygiene work.

It is a policy of the State board of health that efforts toward standardization of method shall grow so far as possible out of actual practice in the field and not be arbitrarily designed and applied to the field by the headquarters office. As a result of this policy and of the important part which custom plays in the question of reporting public-health activities three years elapsed before a uniform report was brought into use throughout the State.

Case record cards were selected and supplied, the use of which provides official evidence of the facts reported. Explanatory definitions of the items occurring in the report form were put in the hands of the county health officers. The county health officers adopted this blank for reporting activities in its present form at their 1925 conference. Two systems of evaluating county health work have been put before the conference and have been taken under consideration.

One is the well-known cost-credit system originated by Doctor Rankin, of North Carolina. The other is a schedule of ratings or points assigned to the various phases of public-health activity, known as the Toledo schedule. About all that can be said of either of these is that they offer a suggested system of rating public-health work. They have been tested tentatively and in a limited way in Alabama. The cost-credit system has been found useful in convincing appropriating bodies of the money value of health work. Ratings achieved according to the Toledo schedule greatly interest and stimulate technical workers and lay people who take an intelligent interest in health conservation. The points allowed in this schedule for various types of work are arbitrarily fixed. The present schedule is under test, and at some future conference of health officers there may be set up a system of credits which meets the approval of the

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combined State and county health forces. This will provide a basis upon which it will be perfectly fair to rate health administration.

I have been trying to lead up to the statement that the amount of time to be spent may be determined by properly balancing the program and going after results in this most vital and fundamental field. I believe it a mistake deliberately to start to divide time when an eminently more inspiring motive for the day's work is to be found in furthering a vital feature of the program. When the day's work is done the workers should record on its appropriate card every item of service rendered. Those items which are included in the field of maternal and infant hygiene should receive a notation of the estimated period of time occupied by them, and to this should be added a proportionate allowance of the time devoted to travel. When the office secretary checks up all items for the monthly report she has only to add the hours devoted to maternity and infancy for inclusion in the report. That this record is likely to fall far short of accuracy is admitted without argument, but it seems to us that in any attempt to make a division of time the primary object in planning the day's work would itself defeat the purpose of the day's work.

We are not unmindful of the serious defects which occur in the recording and reporting of activities. Many of our most enthusiastic and tireless workers are slow to acquire the habit of keeping an adequate record of their activities; few have learned to analyze the records of their office and draw from them significant deductions. Yet in spite of the many difficulties connected with record keeping and report making we are convinced that the only criterion by which a piece of work should be judged is that of tangible results or definite accomplishments. Every claim of this sort set forth in a report should be soundly supported by individual and case records in our files. We further contend that the time element enters into this project only incidentally and is worthy of study only in the interest of administrative efficiency.

Since I was asked to present this subject at our conference I have made a supervisory visit to three health units, and in each of these I asked the health officer to show me how he attempted to determine the amount of time spent in maternal and infant hygiene work, and how, when planning his program, he attempted to determine the amount of time to be spent in this phase of work. In all three of these the nurse recording her work at the end of the day made a notation of the time which she spent in maternal and infant hygiene; and the health officer intended to do this also but stated that it was sometimes overlooked. In one of the counties the health officer in planning his program had made a fairly clear division of the nurse's time between major, minor, and incidental duties; and these were set down in tabular form opposite the calendar months. The duties set down in major and minor columns were maternal and infant hygiene, school hygiene, tuberculosis control, and antityphoid inoculations. No attempt was made to designate incidental duties. The two months at the beginning of the school year showed school work in the major column with a combination of the others in the minor column; two months of the early spring showed typhoid inoculations in the major column; and in the other eight months it was planned

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that maternal and infant hygiene work should be the major activity of the nurse with school follow-up and tuberculosis calls combined as minors with it.

I will sum up by saying that our county health forces need the stimulus of a logical evaluation of the work they are doing, particularly of the maternal and infant hygiene work. In this evaluation the question of time spent and miles traveled should receive due consideration; but because these mechanical considerations seem to have a dispiriting effect on the health workers their importance should not be overemphasized.

Only work intelligently planned, conscientiously performed, and accurately recorded is worthy of the profound analysis and study which leads to convincing presentation of matters reported. Future progress in the development of satisfactory technique in public-health work depends upon the amassing of trustworthy and significant records and the establishment of recognized measuring rods by which comparative values may be reckoned.

Alabama is struggling slowly toward such a system of evaluation for county health work but feels very much alone and unaided in the task. I believe that our policy of trying to build upon the basis of actual experience in the field is sound and that any system to be successfully operated must have the approval and concurrence of the workers whose success is to be measured by it. I suggest, however, that the Chief of the Children's Bureau be asked to appoint a committee to give further study to this important question and to present if possible some definite recommendations concerning it at our next conference.

The Chairman. The next subject to be considered is the cost of separate items of work. Doctor Gardiner of New York will talk to us about this.

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COST OF SEPARATE ITEMS OF WORK IN A MATERNITY AND INFANCY PROGRAM

By Elizabeth M. Gardiner, M. D., Acting Director, Division of Maternity, Infancy, and Child Hygiene, Department of Health, New York

In the few minutes assigned for this subject I shall not dwell at any great length on the reasons for needing to know the rate of expenditure for different types of work. Suffice it to say that one or two circumstances arising of late have seemed to sharpen our interest in it greatly. One was the question arising in our division of administration as to whether a certain piece of work was in fact worth what it was costing; and the other was an eleventh-hour notification that we were spending several thousand dollars too much for another phase of work and at the same time being committed in such a way that we can not gracefully or even wisely withdraw. Such a disturbing situation would not have arisen had we been constantly informed as to the rate of expenditure and the balances on hand out of the budget allowance for that item.

Cost accounting is a highly valued asset in any business, and we should by now be in position to compare costs for the same types of work in different parts of the country. Therefore some parallel cost system, I believe, should be instituted in order that our findings may be comparable.

It is only in the hope that such action may be taken by this conference and that a committee may be appointed by the Chief of the Children's Bureau to deal with this need that I have consented to attempt a presentation of this subject, which I do not feel that we in New York State have dealt with at all adequately thus far.

However, our attempt to secure cost figures has already brought about two good results. The auditing department has assigned a full-time accountant to our work alone and has evolved a plan for giving us the information we need. You have been handed some sheets showing cost of different activities for the past six months.[1] Those are estimates, not actual figures. To have ascertained actual cost for even six months under our present system, particularly at this season of the year, would have imposed too great a burden on our already overtaxed auditing department. Consequently these figures are not actual computation, although they are, I think, fairly accurate.

On the first three sheets you will notice the 10 items according to which we budget to the bureau. The only item which needs analysis is that of salaries. Those have been classified as "administration" and "field." We have several more office clerks and stenographers than are shown under administration, but they are included under field because their work has to do entirely with certain field activities.

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[1] Copies of the tabulations discussed in this paper can be obtained from the division of maternity, infancy, and child hygiene, department of health, Albany, N. Y.

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Several of these groups have duties contributing to various kinds of work; for instance, consultant nursing service. These nurses deal with five services or activities: (1) Supervision of Sheppard-Towner nurses; (2) inspection and supervision of local child-health centers; (3) conducting maternity-hygiene classes for nurses; (4) the organizing and teaching of mothers' health clubs; and (5) general promotion of maternity and child hygiene. Consequently. where we have under the item of salaries a means of estimating the cost of consultant nursing service as a whole we also find that service distributed among special activities of the division. The same holds true of general-duty nursing service, so that we must get right down to activities and determine those for which we need specific cost information and decide just what elements enter into that cost.

You will find listed our activities and the items entering into their cost. Let us consider those activities and the items about which there might be a question:

1. *Midwife regulation.*—This is the only activity to which is properly chargeable any large amount for printing and postage because we do not use the frank and there is much special-delivery and registered mail. Occasionally supplementary nursing service is added because new plans for the year involve part-time assistance from general-duty nurses, so that salary and travel should be reckoned here proportionately.

2. *Child-health conferences or consultations.*—The only unusual item here is follow-up service—this also out of general-duty nursing. In the last six months 115 working-days were given to this activity. Two cars here are needed, one for the unit itself and one for the advance agent; and probably in 1926 part-time car expenses for the follow-up nurses will be added.

3. *Prenatal conferences or consultations.*—Here, too, is additional nursing service for follow-up or demonstrations.

4. *Demonstrations.*—We hope to get here, in the case of Fulton and Tioga, not only the cost of operating but also the cost of establishing the demonstration. General-duty nurses will be assigned from time to time to each of these two demonstrations and their salary and expenses charged to them. If, however, their visits are for the purpose of instruction—that is, to shape them up for field duty—then such cost should be charged to observation visits, which we will touch upon later.

For the Tioga demonstration we have the added cost of direction by the Maternity Center Association.

5. *Community whole-time public health nursing demonstrations (Wheatland, Easthampton, La Salle, and Norfolk).*—Here the travel expense is not local (which is assumed by the community), but refers to that incurred through coming to Albany for conference or attendance at the Sanitary Officers' Conference once a year.

6. *Community part-time public health nursing demonstration.*—This really includes 24 demonstrations. In this case the cost would be "bunched"; but note "consultant nursing service" travel and expense.

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7. *Community demonstrations.*—Child-health conferences, 21 demonstrations. This also is "bunched." These conferences are held regularly twice a month and the cost estimated collectively.

8. *Community demonstrations.*—Child-health conferences, twice yearly—so-called "Type C" plan; 13 of these figured collectively.

9. *Community demonstrations.*—Child-health conferences, Type C, county-wide, 66 communities. These are a class by themselves and are sponsored by county medical societies who appoint the physicians and determine the places where the conferences are to be held. They represent a new development and a very important one to continue, and because they were undertaken much more readily than anticipated they caused us to overspend our budget allowance.

10. *Maternity-hygiene courses and mothers' health clubs.*—Here we have the proportionate salary and travel of consultant nurses and a portion of demonstration material cost charged.

11. *Observation visits.*—Although we engage as highly trained personnel as possible they must have opportunity to keep abreast with the newest and best practices. On the other hand, estimating cost of this term will show whether we are expending too much for educating individuals already well qualified.

Exhibit material is an item to be estimated as a whole separately and then distributed among maternity-hygiene classes, mothers' health clubs, fairs, and loan service to local nurses.

A word as to the use and abuse of cost figures. The question we meet from the outside is not merely "What does it cost?" but "Is it worth what it costs?" The cost in dollars or per capita in dollars alone does not tell this. This is a matter for real judgment into which must enter the factors of distances traveled, the type of population dealt with, the newness of the work, the receptivity toward it, the degree of popular ignorance or knowledge concerning it, or the attitude of the medical profession toward it. The need of the work is the first consideration. Often in the face of a seemingly high per capita cost there is a consistently progressive growth of such factors as appreciation of and demand for the service by the public, an increasing use of the service by patients and physicians, better cooperation on the part of the recipients of the service, and evidence of penetration of the educational phase of the work.

It would be an abuse of cost figures to give them out to the general public without informing that public as to the underlying factors involved; therefore, if we do engage in a careful estimation of costs of different types of work, such figures should be used publicly only when due value is accorded to the difficulties encountered in undertaking any piece of public-health work.

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DISCUSSION OF THE PAPERS OF THE AFTERNOON SESSION

Doctor RICHARDS. I notice in Doctor Gardiner's budget that in some places she has allowed $15 per day for a local physician to carry on child-health conferences. Does that in any way avoid the difficulty of having a local physician volunteer his services? In Utah we have considerable difficulty in getting local physicians to carry on these child-health conferences themselves, and we are not offering, or have not offered, any compensation. I wonder whether the giving of a small fee of that kind does solve some of those problems.

Doctor GARDINER. I think it is the general feeling, particularly in the East, that physicians should be paid for their work if you have the funds. I could not say whether paying the physicians lessens their willingness to do the work free. There is in New York State quite a feeling against so-called "State medicine"; and I think if anything has served to abolish it, perhaps it is the organizing of these type C consultations on a county-wide basis. That is a new development. It started at a suggestion from the office in Yates County. I think they held 10 or 12 consultations in various parts of that county. There was a question of local competition coming up in that particular community, and in order to obviate that the medical society appointed men to work in other towns or villages than those where they resided. Those consultations have been repeated on the twice-yearly plan, and just before I came away they invited me to come to an annual meeting in Yates County, where we were to hold a symposium on the defects found among the children examined. That is a real advance. Perhaps the $15 enters into the willingness of the physicians to serve; but once they have gotten into the habit of doing it I believe they would not stop if they did not receive the $15 per day.

Another county which previously had not been cooperative organized 23 consultations during August and September, and the nurse who reported on that work was very much impressed with the conscientious and careful examinations that were made. She said the physicians showed entire willingness to do the work according to the standards we had suggested.

We send around in advance of these consultations a little set of suggested standards, and they carried out the technique of our own State unit just as far as it was possible under rural conditions. I believe you would find those men working again next year to repeat those consultations, whether they received $15 a day or not.

Mrs. REID. I should like to ask Doctor Gardiner if they use local physicians for those conferences and how they select the physicians?

Doctor RICHARDS. To guard against possible confusion—my question was the same, except that I also ask whether you did not ask the medical societies to appoint your physicians?

Doctor GARDINER. Do not confuse these with our own units. We have a unit for consultation, for child-health conferences; these

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others are appointed in various ways. Most of the regular ones are held twice a month, which we call type A and type B. The physicians for these are appointed by the mayor or the local health officer, supposedly with our approval as to their qualifications. I do not know that we have ever signified our approval in any case, and I do not know that it has ever been asked. They just appointed them anyway. But the county-wide consultation is sponsored by the county medical society. They appoint the physicians and indicate places where the consultations are to be held, and only on that basis will we give a county an allotment. For instance, our district State health officer may say, "I believe I can accomplish this with such and such a county society. How much could you let us have?" I say, "We can let you have to the extent of $300 for the first conferences. You can not spend any more than that, and it should be spent at the rate of $15 a day for the examiners." We figure that the examining physicians ought to examine at least 10 children apiece. At one time we gave a $15 allotment grant to a community, and they happened to have only 49 children to examine and 7 physicians had been engaged. That, of course, was ridiculous. So now we specify a four-hour clinic period, and the examination of at least 10 children by each physician.

Doctor McCornack. Just a point about holding these clinics. I think the itinerant clinics are extremely important, but we found that people do not wish to be examined by their own physicians. You know a "specialist" is just an ordinary man 10 miles away from home, but people do not wish the local physician to look over their babies at a child-health conference. He can look them over any time; whereas I can go into a community 100 miles away from home, or even less, and have 75 babies come into the clinic in one day. Then, with the local physician working at one table and myself working at the other, I examine 50 of those babies, and he will get about 15 of them. That is not because I do the work any better than he does but because the parents almost always prefer some physician from outside.

We have our State divided into the east side and the west side, and we have tried as nearly as possible to get the pediatricians on the west side (Seattle and Tacoma) to come over to the east side and do our examinations and let the west-side men go over there. That does two things. It gives the people some one away from home, and it helps the local physicians tremendously. If I travel 400 miles to conduct a clinic the local physician knows that I am not doing it from the standpoint of working up private business for myself, and I think that is important.

A point in regard to the length of time given to the clinic was brought out this morning. At first we had a feeling that the more babies we examined, the wider our work, and the greater thing we were doing. I went into one town that was very well organized, and in three days I personally examined 300 babies. That was entirely too much. It was not only pretty hard on me, but if you examine 100 babies a day the confusion is too great, and the mother is rushed through too rapidly. Although I think the physician's trained eye will see everything that should be noted in those babies—I do not think I missed anything—it is done so rapidly that the mother is

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not well satisfied. Now at our clinics one physician has two nurses working with him. One nurse sits at a table writing on the record sheet every word he utters; the other nurse works between the dressing room and the table, keeping them going and coming; and with this aid one physician can really examine 50 babies thoroughly. This assumes that he works from 8 a. m. until 5.30 p. m., doing it well and during that time giving the mother a little personal instruction. What she wants in the clinic is for you to tell her that this baby is or is not all right and talk to her in a very confidential way for just a few minutes. Even if it is only two or three minutes she realizes that she is really getting something more than being told as the baby goes off the table, "Baby is all right." She is not satisfied with that. I am sure that if we go in and stay two days we do very much better work than if we go into a town and do 100 babies in one day.

Mrs. Reid. May I ask if the cost then should be the cost of travel plus $15 a day? It would be travel and maintenance then, would it not?

Doctor McCornack. I guess we have been pretty liberal. In our office there are two of us, who have been helping the State department. We have gone over the State for two or three years now and have not charged anything at all for our time. Our traveling expenses are paid. We figure in our office that this is part of our contribution to the community chest, and we owe it to the community; and so far we have not demanded anything for our time except our traveling expenses.

Doctor Noble. I should like to ask if that rate, 50 babies a day per examining physician, can be kept up day after day.

Doctor Richards. I am going to say no. I have tried just about such a program, and I believe I am pretty well able to say. As I have already said, our work is entirely itinerant, and we have planned holding these conferences with the local committee making arrangements two or three weeks ahead. Many communities in which we have held conferences are very small—we will say 200 or 300 population with no physician within 25 or 30 miles. I may mention one little experience:

We had a day that we could spare, for which we had made no definite plans, and there were two nurses with me. We told a neighboring community, just a little village—if any of you go to Zion Canyon you will pass right through it—called Rockville. We told them that we would spend a day with them; and, not knowing exactly what we were going to run into, we went to the little village church at 9 a. m. I sat down in front of the table with a sheet over it, with two nurses making out records and weighing and measuring. I worked from 9. a. m. until noon, then had a bite to eat, and worked until 5. p. m.; and I had examined 80 children. I want to tell you now it was one of the hardest jobs that I have ever done in my life, and if I am out on these itinerant trips for two or three weeks, carrying on a program not so rigid as that, yet making from 25 to 40 examinations a day, I simply must go on the shelf for repairs. I can not keep it up. One gets so tired of a stethoscope in his ears, so tired of the din of hearing those children cry, and so tired of the same questions and of telling the mothers the same thing that—well, if I were not a man I would get hysterical!

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The CHAIRMAN. That is the reason we have so many women pediatricians. [Laughter.] I don't know how Doctor McCornack stands quite so many. I might tell you a little experience of Doctor Smith's. When she came to Michigan, the first afternoon they rushed 75 babies in to her, yet she lived through it. But there is a question whether there should be a limitation on the number of babies to be examined in one day in the clinic or in a conference.

Miss OSBORNE. May I bring out one point, that the more people you get to help you work, the less you will have to do? We enlist the aid of committees such as have been mentioned to register and do the other clerical work, get supplies, clean the rooms, and leave the place in order. In most instances the county health officer, who is the director of the unit, if there is a unit, invites every physician in the county. If there is no unit, we send a letter to every physician in the county referring him to the part-time health officer, and then the nurse or whoever may go there calls upon him. That helps a great deal. Perhaps at the conference we have four physicians and a dentist, and the children go through a piggly-wiggly. At the last moment either the nurse or a physician will talk to them, and two other people help to make out the slips.

Doctor NOBLE. Do you not think that if we try to work with numbers and feel the rush of the crowd behind us we are going to lower our standards very materially and that it is a great deal better to keep our standards up and make fewer examinations?

Doctor MCCORNACK. But when you go into a community with 150 babies registered and have only two days in which to examine them, what are you going to do?

Doctor NOBLE. Do it by appointment.

Doctor MCCORNACK. Yes, but they have already made 150 appointments for two days.

Doctor SMITH. May I answer that? We have itinerant clinics in Michigan also, and when we attend our clinic we send a requirement sheet ahead in response to the call for the clinic. That sheet states that 30 babies a day is the maximum we can take care of, and although they may have more than the 30 registered we will take only the first 30. Occasionally we do run over to possibly 35, but we think 30 babies a day is all that one physician can handle well.

Doctor GARDINER. We feel that they can not handle that many. We were handling 40 children with two pediatricians working from 9 a. m. to 6 p. m. almost every day, and they asked to have the number reduced. We have reduced it to 16 or 17 examinations apiece, because they felt they could not examine more than that satisfactorily. I think part of our aim in consultations of any kind is to teach what constitutes a good physical examination for the children. That is the thing that is going to awaken public demand for the work; and that is exactly what the physicians want to know, too. I do not see how you can examine 80 children.

Doctor BLACHLY. In Oklahoma I started out by stating emphatically that I would examine 20 children per day. I got that suggestion from Doctor McKay at Albany, N. Y., and we have made it distinctly understood that we do not want quantity but we do want careful, thorough physical examinations. I believe that the average of 20 minutes spent in talking with the mother has been well

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worth the time. The mothers' criticism that comes to me from all over Oklahoma when the other physicians are making the examinations is always that they took too little time and hurried it over too much; the pediatricians that examine for me and take more time always win the hearty support and cooperation of the mothers. Doctor Gardiner is right.

Miss OSBORNE. I think the aim of these child-health conferences is to get the people to go to their family physicians. Is it not therefore important to have the family physician present?

Doctor GARDINER. Yes; if we can get him.

Doctor SCHWEITZER. I have one suggestion that we found helpful. In a community where we found the people mumbling under their breath about what physician was going to examine their respective children we worked out a relay system. The State physician would take a certain part of the examination, and if we could locate a man who had given special attention to eye, ear, nose, and throat work, we said, "He will examine all the eyes, and the next man will make all the ear, nose, and throat examinations, and we shall take general physical." That gave us a chance to talk to the mother about diet or anything else. She was perfectly satisfied, and by having the workers relay the babies, if the weighing and measuring was all done beforehand, we examined a large number of children very easily.

Doctor RICHARDS. I think we are talking about two different things. One of us is talking about the ideal, and the other is talking about what we actually have to do.

Now I think all are absolutely willing to say that no physician can examine and do justice to parent and child if he takes less than 20 to 25 minutes to do it; but in regard to my situation and in that of dozens of the others also, I am asking the same question—what are you going to do? I had 75 children. If I turned away 50 of those children and went out of that community somebody was going to be angry about it; after you get accustomed to making those examinations it is surprising how rapidly you are able to go over a child for the, say, self-evident defects—and you can not do much more. It has been my observation in my work that if you can sit down then and talk to the mother a minute or two about her child she is more satisfied than if you spend half an hour examining her child. That may not be the general thing, but I think that you must take into consideration the circumstances you have to face. I am the only one doing this itinerant work throughout the State of Utah, and if I put a limit of 20 children on my activities—well, I know what would happen to me!

Doctor KOENIG. In Arkansas we have had the same experience that Doctor Richards has had. We have mothers bringing their children 10, 20, and sometimes 30 miles, and we have from 150 to 400 people at our conferences. Sometimes they take it as a carnival affair, and the way we have done then is to try to get over a large group. We would take one child from the family, letting the mother select the child that she wanted examined. In taking the family history one of our three nurses can give the mother a great deal of information, and then when the baby comes to my table and I examine the child I can take chiefly the medical part. I think the greatest num-

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ber of children I have ever done in that way was 65; but that involves working long hours.

One thing we have done in the communities having only a one-room school where we have to hold our conferences in this one room. We have a table in one corner, a history table in the other, and then have our sanitary exhibit occupy almost one whole corner of the room. This we carry along with us, and our chauffeur puts it up. Our nurses alternate in explaining that exhibit while I am going on with the history and talking to the mothers. In numerous instances we have had to give what we call "group demonstrations" because, you know, those country people are inquisitive. When we take a child into the examination room we can not send the people outdoors; sometimes we nearly have to lock the door to keep them out so we can do our work. So we have them sit around and see a group demonstration, the small children being sent outside. In that way we can give quite a little instruction to the community, and when we have just one day we want to give those mothers all that we can. I know I can examine all the way from 30 to 50 children a day, and average 32 to 35. We have the child right there in front of the whole group—we protect the child carefully with a towel. The farm and home demonstration agents undress the children and take them back and forth and dress them again, so we do not lose very much time.

Doctor Krause. I am going to tell you how Missouri does it. It is not much different from the West. We have about the same problems. Our first day's clinic is pretty well packed, and we have to work fast, but we do this one thing: Where we find a child really in need of examination, in that little rural community, we schedule a time for that child the next day. In other words, we allow two days where we used to allow one. We tell that mother: "You may bring this child in tomorrow at 9 a. m." We schedule nothing else for that time.

For the next one we pick up that we feel shows a real complication or is in need of a more complete physical examination we say, "You come in at 10 or 10.30 a. m." We have two physicians work on the clinic—that is, two from the staff and two nurses—and of course we handle an average of about 80 to 90 children through the first day's clinic; but we do not handle more than 15 the second day and some days not even that many.

We use that second-day clinic for another purpose too, in addition to trying to render a real service by complete diagnosis. We ask the mother who the family physician is. There may be one or two physicians in that community. If there is only one we have him there with us, but if there are two and their business is such that we can't have them there all the time, we go around and see the physician again and tell him, "We ran on to one of your cases to-day, little Johnny Jones. We went down the line and examined him to-day, and we think we may have found a heart complication. Will you come over and help us?" When he comes over he learns the value of consultation service. We have very little opposition from our physicians and usually have them there assisting us the first day.

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But we can not get away from running a vast number through our average first-day clinic. When we first started the work we would allot a week to a county with six clinics for the county. We have the same number of clinics now, but we allot two weeks to the county; in other words, we give the county a little more, spending a longer time; and instead of trying to scatter the work over 114 counties in one year maybe we can do only 20 counties this year, or 25 counties this year. We are trying to pick more of the rural type, because we have good physicians in St. Louis, Kansas City, St. Joseph, Springfield, and other places where they can get special service if they want it; but in about 60 counties in the State there are very few physicians, and that is where we give our complete physical examination in our second-day clinic. It is the real diagnostic clinic. Of course we miss cases—we are bound to miss them, running through so fast; but we do the best we can, and that is what we want to do.

The CHAIRMAN. Two recommendations have been made this afternoon. One was that the Chief of the Children's Bureau appoint a committee to determine the amount of time spent in maternity and infancy work when matching funds used in a generalized program; and the other that a committee be appointed to map out some way of getting at the cost of separate items of work. What is your pleasure with regard to these two recommendations?

Miss MARRINER. I move that the Chief of the Children's Bureau be asked to appoint a committee to take under consideration the question of evaluating the maternity and infancy work of the generalized program.

Doctor GARDINER. I second the motion.

[The motion was put and carried.]

Doctor GARDINER. I move that the chief of the Children's Bureau be requested to appoint a committee to take under consideration the evolving of a proper accounting system to give figures on separate items of work.

Miss MARRINER. I second the motion.

[The motion was put and carried.]

The CHAIRMAN. We still have the report of a committee on the cooperation of physicians, of which Doctor Veech was chairman.

Doctor VEECH. This committee was appointed last year to look into the cooperation of the medical profession with the work under the maternity and infancy act. In going over the reports that came from the various members of the committee before I came here I found their response most heartening. They showed a better understanding on the part of the medical profession in their own States and those they knew of in regard to what we are trying to do under the act, and full approval of the work undertaken in most places. The reports from the various States here have indicated full cooperation of the medical profession, as you have heard. It seems to me there is little else to be said about it.

The CHAIRMAN. What will you do with this report?

Doctor BLACHLY. I move that the report be accepted and the committee discharged.

[The motion was seconded, put, and carried.]

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Doctor LAUER. There is one thing I would like to mention as probably expressing the sentiments of this gathering. I find when I come here every year that in looking at the exhibits and seeing the things which have been published I always discover any number of things that are of supreme interest and value to me, that I, of course, had not seen. I should like to present in a resolution that it is the sense of this gathering that the various State divisions be urged to obtain a mailing list of the other divisions and to send their printed matter and publications (at their discretion) to all the other divisions. I realize they would not care to send certain confidential matters, but sometimes they do not send things because they think they are insignificant. Now I found two very small things—I am quite sure that the directors never thought of sending them—that were of immense value to me. I think that if we could get the divisions to do this it would be very helpful. The divisions should be careful to have the correct addresses to which to send such material. I fear I lose a good deal because it is sent to the State department of health, which is at Des Moines, whereas the office of the director of the division of maternity and infant hygiene is at the State University at Iowa City.

Doctor BLACHLY. I second the motion.

The CHAIRMAN. Doctor Blachly seconds the motion that it is the sense of the conference that we should have an interchange of your literature and other material and that a proper mailing list should be obtained. I will say for the Children's Bureau that we will see that each State receives a correct mailing list.

[The motion was put and carried.]

Is there any other business? I may add that you had a program committee last year, and that committee is partly responsible for the program that you have had at this conference. It has made suggestions, and you yourselves have made suggestions. At the very last your chairman was not with us, nevertheless we have profited by the criticisms of last year, and I am sure we should like to profit by them for next year. I have one criticism myself. We have been just a little bit hurried; we had perhaps too full a program. Yet there is much to consider, and we meet only once a year.

It seemed to me this morning that Doctor Schweitzer opened one question that we have not touched, and that is whether we wish to have something next year on embryology and biology in relation to neonatal deaths, and something on nutrition in relation to neonatal deaths—because I feel that we shall not get entirely away from the neonatal deaths until we realize that the baby who dies in the first month of life dies, as Doctor Knox said yesterday, from inanition and debility, according to the death certificate.

We have a guest with us, Dr. Taliaferro Clark, director of the division of child hygiene of the United States Public Health Service. I wonder if Doctor Clark will say a word to us?

Doctor CLARK. Ladies and gentlemen, it is a very great privilege for me to be with you. I have not been able to attend as many of these meetings as I would like to have attended.

It would be superfluous for me to attempt to tell those of you of such vast experience in the field something about child hygiene and how to do the work, because no one realizes better than I do that

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all of you have individual problems peculiar to your States that have to be worked out by yourselves. It is a matter of evolution. But I do want to tell you that it is of great value to those of us in administrative authority in Washington to have you gathered here from the four points of the compass, discussing your problems and telling how you meet them.

I am not going to make you a speech. I am going to make just one announcement, namely, that I have been relieved from child-hygiene work (effective on the 19th of this month) to go to Europe for a three-year detail, where I shall have charge of the supervision of the United States Public-Health Service activities on the continent and the British Isles, and this is in the nature of a farewell.

The Chairman. Is there anything else that you wish to talk about now, or would you rather talk to one another?

Mrs. Reid. I should like to make a motion that I am sure is the sense of the meeting: That we offer our sincere thanks to the Chief of the Children's Bureau, the director of the maternity and infancy division, and the others in the bureau who have made this conference and everything pertaining to it possible for us.

[The audience rose, with applause. The meeting then adjourned sine die.]

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APPENDIX

LIST OF PERSONS WHO ATTENDED THE THIRD ANNUAL CONFERENCE OF STATE DIRECTORS OF THE ADMINISTRATION OF THE ACT OF CONGRESS OF NOVEMBER 23, 1921, FOR THE PROMOTION OF THE WELFARE AND HYGIENE OF MATERNITY AND INFANCY.

Alabama

Jessie L. Marriner, R. N., director, bureau of child-hygiene and public-health nursing, State board of health.

Arizona

Mrs. C. R. Howe, director, child-hygiene division, State board of health.

Arkansas

Margaret Koenig, M. D., associate director, bureau of child hygiene, State board of health.

California

Ellen S. Stadtmuller, M. D., director, bureau of child hygiene, State board of health.

Colorado

Mrs. E. N. Mathews, executive secretary, child-welfare bureau, department of public instruction.

Connecticut

Elizabeth A. Ingraham, M. D., director, bureau of child hygiene, department of health.

Delaware

Marie T. Lockwood, R. N., supervisor of nurses, State board of health.

District of Columbia

Watson Davis, manager, Science Service.

Florida

Laurie Jean Reid, R. N, director, bureau of child welfare and public-health nursing, State board of health.

Georgia

T. F. Abercrombie, M. D., State health officer, State board of health.

Idaho

Mrs. S. J. Ewen, supervising nurse, bureau of child hygiene, department of public welfare.

Indiana

Ada E. Schweitzer, M. D., director, division of infant and child hygiene, State board of health.

Iowa

E. H. Lauer, Ph. D., director, division of maternity and infant hygiene, State University of Iowa.

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Kentucky

Annie S. Veech, M. D., director, bureau of maternal and child health, State board of health.

Maine

Edith L. Soule, R. N., director, division of public-health nursing and child hygiene, department of health.

Maryland

Gertrude Knipp, chief, division of public-health education, State department of health.

J. H. Mason Knox, jr., M. D., chief, bureau of child hygiene, department of health.

Nina Simmonds, D. Sc., associate professor of chemical hygiene, School of Hygiene and Public Health, Johns Hopkins University.

Massachusetts

Robert L. De Normandie, M. D., instructor in obstetrics, Harvard Medical School.

Mary R. Lakeman, M. D., assistant director, division of hygiene, State department of public health.

D. A. Thom, M. D., director of the habit clinics of the Community Health Association of Boston; director, division of mental hygiene, Massachusetts Department of Mental Diseases.

Michigan

Lillian R. Smith, M. D., director, bureau of child hygiene and public-health nursing, department of health.

Minnesota

Ruth E. Boynton, M. D., director, division of child hygiene, State department of health.

Mississippi

F. J. Underwood, M. D., acting director, bureau of child welfare and public-health nursing, State board of health.

Mary D. Osborne, R. N., supervising nurse, bureau of child welfare and public-health nursing, State board of health.

Mrs. Walter McNab Miller, chairman, department of public welfare, general Federation of Women's Clubs.

Missouri

Irl Brown Krause, M. D., director, division of child hygiene, State board of health.

Montana

Hazel Dell Bonness, M. D., director, division of child welfare, State board of health.

Nebraska

Louise M. Murphy, R. N., director, division of child hygiene, department of public welfare.

Nevada

Mrs. S. H. Wheeler, executive secretary, child welfare division, State board of health.

New Hampshire

Elena M. Crough, R. N., director, division of maternity, infancy, and child hygiene, State board of health.

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New Jersey

Julius Levy, M. D., consultant, bureau of child hygiene, department of health.

New Mexico

Dorothy R. Anderson, R. N., director, division of child hygiene and public-health nursing, bureau of public health, department of public welfare.

New York

William L. Chenery, editor, Collier's Weekly.
Carolyn Conant Van Blarcom, R. N.
S. J. Crumbine, M. D., general director, American Child Health Association.
Elizabeth M. Gardiner, M. D., acting director, division of maternity, infancy, and child hygiene, department of health.

North Carolina

H. A. Taylor, M. D., director, bureau of maternity and infancy, State board of health.

North Dakota

Maysil M. Williams, M. D., director, division of child hygiene and public-health nursing, department of public health.

Ohio

H. E. Kleinschmidt, M. D., director, division of hygiene, State department of health.

Oklahoma

Lucile Spire Blachly, M. D., director, bureau of maternity and infancy, State board of health.

Pennsylvania

Mary Riggs Noble, M. D., chief, preschool division, bureau of child health, department of health.
Alice Weld Tallant, M. D., gynecologist and obstetrician, Philadelphia General Hospital.

Rhode Island

Marion L. Gleason, M. D., director, division of child welfare, State board of health.

South Carolina

Ada Taylor Graham, R. N., director, bureau of child hygiene and public-health nursing, State board of health.

South Dakota

Clara Edna Hayes, M. D., director, division of child hygiene, State board of health.

Tennessee

Dorothy L. Heller, M. D., associate director, division of maternal and infant hygiene, department of public health.

Texas

H. N. Barnett, M. D., director, bureau of child hygiene, State board of health.
A. C. Mitchell, illustrator, State board of health.

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Utah

H. Y. Richards, M. D., director, bureau of child hygiene, State board of health.

Vermont

Harriet M. Gardiner, R. N., field nurse, State board of health.

Virginia

Mary E. Brydon, M. D., director, bureau of child welfare, State board of health.

Washington

P. D. McCornack, M. D., assistant director, division of child hygiene, department of health.

West Virginia

Mrs. Jean T. Dillon, R. N., director, division of child hygiene and public-health nursing, department of health.

Wisconsin

Cora S. Allen, M. D., acting director, bureau of child welfare and public-health nursing, State board of health.
Mrs. Gertrude C. Hasbrouck, organizer of infant-hygiene courses, bureau of child welfare and public-health nursing, State board of health.

Wyoming

G. M. Anderson, M. D., acting director, division of maternal and infant welfare and child hygiene, department of public health.

Federal Government

Grace Abbott, Chief, Children's Bureau, United States Department of Labor.
Viola Russell Anderson, M. D., expert in infant hygiene, maternity and infant-hygiene division, Children's Bureau, United States Department of Labor.
Taliaferro Clark, M. D., director, division of child hygiene, United States Public Health Service.
William H. Davis, M. D., chief statistician for vital statistics, Bureau of the Census, United States Department of Commerce.
Martha M. Eliot, M. D., director, child-hygiene division, Children's Bureau, United States Department of Labor.
Blanche M. Haines, M. D., director, maternity and infant-hygiene division, Children's Bureau, United States Department of Labor.
Agnes K. Hanna, associate in prenatal and child nutrition, maternity and infant-hygiene division, Children's Bureau, United States Department of Labor.
Eleanor T. Marsh, specialist in public information, editorial division, Children's Bureau, United States Department of Labor.
Marie T. Phelan, R. N., expert in maternal and infant care, maternity and infant-hygiene division, Children's Bureau, United States Department of Labor.
Henry Schultz,[1] director, statistical division, Children's Bureau, United States Department of Labor.
Ionia R. Whipper, M. D., expert in maternal and infant hygiene, maternity and infant-hygiene division, Children's Bureau, United States Department of Labor.

[1] Resigned Jan. 15, 1926.

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U. S. DEPARTMENT OF LABOR

JAMES J. DAVIS, Secretary

CHILDREN'S BUREAU

GRACE ABBOTT, Chief

THE PRACTICAL APPLICATION OF MENTAL HYGIENE TO THE WELFARE OF THE CHILD

By

D. A. THOM, M. D.

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Separate No. 6 from Proceedings of the Third Annual Conference of State Directors in Charge of the Local Administration of the Maternity and Infancy Act, 1926. Publication No. 157

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1926

FROM
T. P. GORE
UNITED STATES SENATOR

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THE PRACTICAL APPLICATION OF MENTAL HYGIENE TO THE WELFARE OF THE CHILD

By D. A. Thom, M. D., Director of the Habit Clinics of Boston; Director, Division of Mental Hygiene, Massachusetts Department of Mental Diseases

The first five years have an importance in the mental and physical welfare of the individual that no other period of life can possibly assume. For years you have all been concerned with ways and means of preserving the physical health of the child, but only within the last half decade have you been turning your attention to some of the vital problems which concern his mental welfare.

It is my privilege this morning to discuss with you very informally some of the conditions that may arise during the early years which are fundamentally related to the intellectual and emotional life of the child and which may lead to much unhappiness and inefficiency in later life.

Perhaps I can best cover what I have to say by answering three very general questions: Why is this preschool period important? Why is the mental health during this period so easily impaired? Wherein lies the responsibility for the mental health of the child of preschool age, and how may we devise ways for disseminating the knowledge that we already have relating to the preservation of mental health?

We all know in a very general way why the preschool age is important. It is the period when many physical and mental defects can be diagnosed. It is the period when they first make themselves sufficiently obvious to be recognized not only by specialists but very frequently by laymen. Take for example the mentally deficient group. Nearly all cases of mental defect can be diagnosed during the first four years of life. It is most important to recognize mental limitations early, so that some intelligent plan may be outlined, thus permitting the intellectual equipment, poor as it may be, to be utilized and developed to its full capacity.

Massachusetts has a rather progressive law for the purpose of recognizing and recording those individuals who are mentally deficient. The law requires that all persons three or more years retarded in the public schools shall have a psychometric examination, and a further provision is made that where there are 10 or more feeble-minded individuals of school age in a community special classes must be established. This means that the feeble-minded recognized under this law at the earliest possible date will be 8 or 9 years of age. I feel that when a disease or condition that can be recognized usually during the first, second, or third year exists, and a plan of treatment might intelligently be put in operation, it is futile to wait until five or six years later before instituting a program of education.

Epilepsy, that chronic convulsive disorder which fills so many beds in our institutions throughout the country, has its beginning

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to a very large extent in early life. Studies pertaining to epileptics in institutions caring for the chronic cases indicate that more than one-half of these cases had their first convulsion prior to the fourth year of life.[1] It is equally important to note that the subsequent history of a large group of children having convulsions prior to the fourth year of life indicates that the convulsion was quite definitely a criterion of nervous instability; had it been so recognized many of the shoals upon which children become wrecked in later life and which act as exciting causes of convulsions might have been avoided.

You are all familiar, I am sure, with the frequency with which blindness, deafness, and speech defects occur during the preschool period. Although many of these defects are due to organic conditions for which there is no absolute cure, much can be done by early education and training to reduce the handicap. According to the United States Bureau of the Census there were on January 1, 1923, more than 267,000 patients in State and other public hospitals and private institutions caring for the mentally sick.[2] This group alone is occupying more beds than all other medical and surgical cases combined—which would include all the hospitals for tuberculosis, surgical and medical cases, and infectious diseases. It would be impossible to measure the total cost to the country brought about by mental diseases alone. We do know that in Massachusetts 20 cents of every dollar that the taxpayer turns in is being spent for the care of that type of mental disease which needs institutional treatment. But the great problem of mental health is not the care of those individuals confined in institutions. The great problem is the so-called psychoneurotic class of individuals, persons who are emotionally unstable, who are unable to meet the ordinary problems of every-day life in an efficient way. There are thousands of individuals who have only a limited degree of usefulness owing to the fact that their intellectual capacities are handicapped by their emotional conflicts.

It is during the preschool years—that is, the first six years of life—that many of the undesirable habits and personality deviations first develop; and it is not long before they become so obvious and so devastating to the personality that their ultimate effect on the future usefulness of the individual can easily be recognized even by those who are untrained in either psychology or psychiatry.

It is interesting to note in getting statistics from our general hospitals, especially the out-patient departments, that about 60 per cent of the individuals who go for treatment have not physical disease but are suffering from a state of mind; and this state of mind alters their conduct in a way that renders them inefficient—the so-called "neurotic." So far as work is concerned, they are quite as incapacitated as the individual who has a physical ailment. So there is a little relation between the actual organic incapacity and the amount of work these individuals are capable of doing. The point I wish to make is that a large percentage of all these psychoneurotic individu-

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[1] See "The relation between infantile convulsions and the chronic convulsive disorders of later life," by D. A. Thom, M. D. (Archives of Neurology and Psychiatry, Vol. XI, June, 1924, pp. 664–668).

[2] Report of Census of Institutions for Mental Disease, United States Bureau of the Census. (In press.)

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als of adult life can be diagnosed during the preschool period, and treatment can be rendered which will prevent this enormous waste of human energy.

Consider for the moment the underlying mental characteristics of a criminal. They are impulsivity, lack of inhibitions, inability to forego momentary pleasures and make sacrifices for a definite end. After considerable experience with criminals in prisons and reformatories we find that these dominating mental characteristics have been life-long factors in the personality make-up of this group of individuals. In our clinics for the children of preschool age we see well marked in the uncontrolled, disobedient, asocial child these same personality deviations which keep him in conflict with the family and his immediate environment. I have made an attempt to outline just a few of the social problems that we meet in every phase of life from the cradle to the grave. Most of them can be diagnosed at a very early age, and much can be done, as experience has shown, to eradicate or alter them, or perhaps substitute desirable and social tendencies which will serve the individual in good stead in later life. Another reason for impressing you with the importance of recognizing these personality deviations early might well be found in the fact that certain mental characteristics which the child has during these early years are more usable in altering undesirable habits than at any other time in life. I refer to the general plasticity of the child's mind, as shown by imitation, suggestion, love of approbation; and one might add as another asset the ease with which one can interpret conduct in early life as it is not altered by training, education, and experience. Finally, in this plea for early recognition and treatment of undesirable habits, personality deviations, and criminal tendencies, I would call your attention to the numerous facilities that have been organized and developed during the past 20 years in the interest of the child. I refer to the nursery schools, the kindergartens, special hospitals, nurses and physicians whose training has been devoted entirely to the understanding of the child; books, plays, toys, and all sorts of amusements in general have been developed, not only to entertain but to educate and train along practical lines and develop the nervous system of the child.

There is a tendency to divide the life of the child in a very arbitrary way into its physical, intellectual, and emotional aspects; and the minds of lay people, and frequently those too highly specialized, think of processes working independently one of the other. Obviously this is a grave mistake. We all appreciate how closely these three aspects of child life are interwoven one with another, and how important it is for the closest cooperation to be encouraged among the psychiatrists, pediatricians, and psychologists. Intellectual processes are stimulated by good physical health and emotional stability, and the feeling side of the child's life is tremendously altered if the physiology and biochemistry and general mechanics of the body are out of adjustment.

Here is an example of a physical problem which finds many of its manifestations in the intellectual and emotional side of the child's life. A little girl 9 years of age was brought to a clinic because she was considered a nuisance in school. She had repeated the first and second grades and was in the third grade doing poor work. The

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physical examination, which must always be considered as of primary importance, showed this child to be poorly nourished and poorly developed, with stooped shoulders, bent back, and a pale, careworn expression. The important and outstanding physical defect was deafness. It was revealed that the child was absolutely deaf in the left ear and could hear the spoken voice at a distance of 5 feet only. Three years before she had had a psychological examination and was given an intelligence rating of 63. Her present psychological rating, taking into consideration her deafness, is much higher; but it seemed wise not to give her any definite relative standing on the intellectual scale without much more detailed examination than could be given at the time of writing. It at least indicates that she is not mentally deficient. This physical defect had prevented the child from demonstrating her real intellectual ability in her school work. She soon began to be teased by the other children because of her inadequacy in class work. Naturally she became impressed with her own failure, felt inferior, and found school unpleasant. She became difficult to manage at home, played truant from school, and developed certain destructive tendencies. There is little doubt in my mind that this child's failure in academic work and the personality changes that followed are easily explainable by the child's deafness and the handicaps resulting therefrom. Mental deficiency and delinquency were symptoms of this underlying organic defect and this conduct was simply the result of her effort to keep herself from being ignored, which, after all, is an expression of the instinct of self-preservation, even though it results in asocial activity.

I recall a 9-year-old boy who was brought into my office by his mother. The lad had been doing very mediocre academic work in the third grade of a private school. One of the teachers had told the mother that the boy had a brilliant mind and that his failure was due entirely to his lack of interest and concentration. After carefully studying the entire situation, evaluating the lad's intellectual equipment in terms of his past experience, his general ability to meet the ordinary problems of everyday life, and the psychological examination, we found him to be of a very moderate mental equipment. He had had convulsions in early life, which fact undoubtedly played a large part in preventing normal intellectual development. His intelligence quotient was 75, and, all things being considered, one could come to no other conclusion than that the lad was doing very good work with what he had to do with. It would be a great injustice to push this child on and subject him to more mental stress and strain than he was capable of standing because the teacher entertained the belief that he had a brilliant mind. Unfortunately we can not measure the emotional disturbances in children's lives in terms of intellectual quotients, nor have we any such tests as can be readily applied to measure both qualitatively and quantitively defective hearing. The emotional stress has to be measured in terms of conduct, frequently in terms of nonconformity or inefficiency and unhappiness. Emotional stress and strain are in the background of almost all psychoneurotic symptoms.

The following case comes from a home of no economic difficulties where both parents are educated, both cooperating and in entire agreement as to the training and care of the child, and where the

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results of their training and care and supervision, up to a certain point, have been considered not only satisfactory, but quite ideal:

A 5-year-old girl was taken to a clinic by her overwrought parents because suddenly and quite unexpectedly she had refused to take food or swallow. The morning that I was called to the office in consulation the father was anxiously but silently pacing the floor; the mother was weeping and wringing her hands; and the little girl was sitting quietly next to the physician wearing a mask-like expression. The saliva was dribbling from her mouth to her frock, which was soaked, and she seemed only casually interested. The physician stated that three days ago for some unknown reason the child had refused to take any food, and that she was constantly demanding that her mother reassure her that it was all right to swallow. In spite of the many reassurances given she had refused to swallow and had dribbled all day long. A brief interview revealed the following: It appeared that the mother had frequently told the child that she should never allow anyone to kiss her, and in order to make her statement more impressive she informed the child that it caused infection by germs, and that when the germs were swallowed the little girls died. It happened that on the afternoon previous to the day her unusual conduct began she had gone to her first dancing class, and some man, she stated, stooped down, patted her on the head, and kissed her on the mouth.

How much of an impression this incident made upon the mind of the child is difficult to evaluate at this time, but the important aspect of the problem seems quite obvious. The parents of the child were quite intelligent in handling most of their problems, entertaining some rather unusual ideas about bringing up a child on an intellectual basis. Their principle was that the child should not be spoiled by attention, praise, or affection. If things went well it was taken for granted; if otherwise, moralization and punishment followed. The child was never boisterous, her table manners were perfect, her speech grammatically correct, she was never disobedient, she played only under supervision with most carefully selected playmates; her neatness, punctuality, and general conformity to parental law were accepted as a matter of course. The emotional upset which developed after the child had been kissed would ordinarily have been eradicated after a little explanation had it not been for the fact that, quite as unexpectedly as the symptoms had developed, the parents began to take notice of the child. They not only gave her a little attention, but they became extremely worried and anxious. The child for the first time in her life became the center of attention. It was a new experience and one which was so pleasing to her starved emotional life that it is not at all surprising that she clung to it with great tenacity and gave it up with considerable reluctance. This is just another conclusion of the home situation which occasionally produces rather alarming symptoms in the child. The oversolicitous parent stuffs and overfeeds the emotional life of the child, whereas the stern, forbidding type of parent starves it. These are two extremes of treatment, neither of which will promote strength and stability in the emotional life of the child.

The three foregoing cases, I think, emphasize the necessity of studying the child as a composite unit, the reaction of the individual

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to the environment, and the manifold problems of that environment which the child has to meet.

The conduct of children is frequently more easily interpreted than that of adults, inasmuch as it is more spontaneous, less repressed, and less colored by a social sense. It invariably centers around the child since it is directly concerned with the preservation of the child's own ego as well as his physical being and during the early life fails to take into consideration the feelings and desires of others within the same environment.

The neurotic tendencies in children, as with adults, are always striving to serve some purpose, although occasionally they are so vague and ill-defined that the objective is not perfectly clear. It may be perfectly obvious, the motive of temper tantrums, neurotic vomiting, delinquency, or some other undesirable deed or habit, or it may necessitate a long, careful study of the case; but all such conduct has a motive which the child feels at least is working out to his immediate advantage. Asocial conduct is all too frequently utilized to avoid the difficult situations in life, and the child who learns by experience that such conduct aids in dodging reality on one occasion is likely to practice it more or less continuously.

It is quite important to consider for a moment the incapacity that results from a rather minor mental handicap in the life of the child. The child that is incapacitated on account of some undesirable habit or personality defect or twist not only demands but gets a disproportionate share of the mother's time. The mother is invariably more concerned about this one individual in the family whose personality obliquities lead to asocial conduct than she is with the other three or four children who may be considered normal; and it is not surprising that these normal children will react in a normal way—which means resentment and rebellion toward the parent for the disproportionate share of her time which she is giving the delinquent. Keep in mind, if you will, that the incapacity for efficiency and happiness brought about by an unhealthy state of mind is one of the most common as well as one of the most important problems with which social and medical organizations have to deal. It is of interest to note that the incapacity from mental handicaps, unlike that of physical origin, is out of all proportion to what one is led to expect.

The question now arises—who should be held responsible for the mental health of the child of preschool age? It is not practical, neither is it desirable, to have all these children examined by a so-called "specialist." We do not find the Department of Agriculture sending a trained chemist around to ride on the back of every cart of fertilizer to tell the farmer to put so much here and so much there; but general instructions, I presume, are sent out to farmers giving them an idea as to how best to fertilize certain lands. I think our approach to the problems of education and our approach to these problems of health need be handled in much the same way; that is, the responsibility for the mental health of the child must necessarily rest upon parents, teachers, social workers, and those individuals who are making daily contacts over long periods of time with these children. Many of the most difficult problems concerning the mental health of children are brought about by environmental

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situations so obviously unhealthy that it does not take a trained psychiatrist or psychologist, or any other specialist, in fact, to determine what the defect is, and frequently to make intelligent recommendations to correct it. This does not mean, of course, that there are not innumerable problems concerning the mental health of the child that are very vague and ill-defined, in which it will take all the skill and all the ingenuity of those best trained to comprehend the underlying difficulty. Herein, of course, lies a certain element of danger which is stressed and frequently, I believe, overstressed by the specialist; that is, the parent, the teacher, and the untrained individual must appreciate which problems lie within their province and which ones present fundamental difficulties of such a nature as to need the services of the expert.

At the present time there is much valuable information concerning the mental health of the child, rather well-defined ways of meeting certain problems and mechanisms that are not too complicated for the intelligent person to understand, which gives lay people a much better understanding of how asocial activity develops and what it means to the child. It is extremely important that all you individuals who are held responsible for the physical welfare of the child take advantage of every opportunity to familiarize yourselves with the fundamental principles of child psychology. Many serious mistakes would be avoided if we all utilized the material that is at hand and available. One of the things that parents, teachers and numerous other persons who come in daily contact with children fail to recognize is that the child really has a mental life. If we can get the parents to appreciate that they are dealing with an individual, regardless of his chronological age; an individual who has a mental life capable of experiencing many of the same emotions at 3 years of age which he experiences at 30, much will be accomplished. These children have hopes, ambitions, doubts, fears, aspirations, joys, and sorrows that are thwarted and gratified in much the same way as our own.

Parents tend to look upon the child as a rather mechanistic individual that responds physically to a certain situation and without any relation to events of the past. It is pathetic, I think, and a bit discouraging that so few of us, as adults, can remember in any great detail what our emotional lives were prior to the sixth year. But those who will take time to get close to the mental life of the child, taking conduct as a sort of guide post and the mental content of the child's mind as their objective—what is going on in the mind of the child, what he is thinking of, what he is hoping for, what he is fearing—will find that this mental life is very well established, very well organized.

In understanding the conduct of the child it is of great importance to know what he is thinking, how he is planning, what he is attempting to avoid and to attain, how he feels about things and people, situations and events, which we, as adults, are prone to believe make little or no impression upon him. We must bear in mind that the mental attitude of the child toward life is highly colored by the personalities with which he comes in contact. We must become less concerned with symptoms and more concerned with fundamental

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causes. From the environment and the personalities with which the child has to deal we can expect to learn much regarding the basic forces that are the causative factors of asocial conduct.

There is nothing more important in dealing with children than the psychiatrist's attitude toward the parents. It is not sufficient in most cases to point out parental defects and to lecture parents about being domineering, oversolicitous, or whatever their fault may be. It is quite essential that the parents be helped to understand why they have developed this particular attitude toward the child. The following briefly indicates this point: A boy of 6 years was brought to the clinic only yesterday morning by a mother who stated, "This child is stubborn, refuses to do anything I tell him, makes a terrible fuss about his food. I have to coax, tease him, and finally feed him. If he takes a nap I have to lie down with him. He scratches and kicks and pinches the smaller children. He is extremely cruel to animals, sticks pins in the cats. When denied he screams and yells." During the questioning of the mother a child was staging what I considered a violent temper tantrum in an adjoining room. When I inquired whether he was her child, she replied in a half-hearted way, "Yes, but that is a modest protest at my being away." This mother seemed to be a woman of average intelligence. She had three other children who were apparently getting along without great difficulty, and on the whole she seemed to be handling most of her problems in a very sensible sort of way. In reply to inquiry regarding her husband she stated, "He is really quite a problem, so far as managing the children is concerned. He resents my correcting them and frequently remarks, 'Oh, don't bother the children, let them go, don't be nagging them all the time. They are going to be young only once. Give them a good time,' and during the hours that he is home he refuses to permit me to discipline them in any way whatever."

We find that this man had been brought up in a very cold, forbidding home. He had a tyrannical uncle whose treatment at times was extremely cruel. He could not remember either his father or mother. Childhood was an extremely difficult and unpleasant time in this man's life, and as he grew up he had carried in his own mind the idea, perhaps at times only, in a rather vague sort of a way, that if he ever had any children they were going to have a different childhood from what he had had. "They are not going to be nagged, picked on, and punished as I was when I was a kid." Here we see a very interesting example of a man who is really overcompensating his own children for what he himself had to go through as a boy. Now this overcompensation on his part can not be corrected by simply telling him that he is doing the wrong thing, that he has got to change his attitude, that he is spoiling the boy, and that he knows nothing about handling his own problems. His whole attitude toward the child will be more permanently and happily changed if he can be made to understand exactly what he has been doing and that there are certain dangers in permitting the child to have a life of license just as there are dangers in curbing, thwarting, and at times completely annihilating any initiative on the part of the child. It may also be pointed out that his wife is trying to

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sail between these two shoals upon which so many children are wrecked and that his cooperation is absolutely essential to the future welfare of the family.

I have pointed out many times that frequently the very love and devotion that parents have toward children prevent them from meeting their problems of child training on an intellectual level. People who are perfectly stable about meeting the ordinary problems of everyday life become extremely panicky when dealing with some of the difficulties in training children.

I might briefly summarize the thoughts that I wish to leave with you this morning as follows: First, there is no more important period in the life of the individual than the first five years. During this period many of the physical and mental defects which handicap the individual in adult life can be recognized, and it is during this period that they can be most easily understood and treated. Frequently this will prevent the personality from becoming twisted and distorted to the extent of rendering the individual unhappy and inefficient. By the very nature of things as they exist to-day the responsibility of child training must be assumed by parents, teachers, nurses, and general practitioners, and not by specialists. The psychiatrists and psychologists have a very important function to perform in presenting the knowledge at hand regarding mental hygiene in such a way that it can be utilized by various groups with whom the child comes in intimate contact. The problems of mental health are brought about frequently by undesirable factors in the environment and by physical defects, both of which can and should be recognized by intelligent laymen as soon as they appreciate their importance.

I would therefore urge upon you all to avail yourselves of the vast amount of information already at hand concerning the mental life of the child and use it in your daily contacts with your patients, whether you meet them in the clinic, in the home, the nursery school; whether they be found in the congested districts of New York City or in some of the sparsely populated hamlets with which many of you are so intimately concerned.

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