RESULTS GAINED IN MATERNITY CASES IN WHICH ANTENATAL CARE HAS BEEN GIVEN*

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It is now well recognized that maternal welfare includes both medical and social activities. It is not our purpose to go into a consideration of the latter phase, but we wish to emphasize the importance of having this sort of work closely coupled with the medical activities.

We include under medical activities those which fall within the scope of nursing as well as those which fall to the lot of physicians and surgeons. The medical men to whom women come for maternity care should not take a narrow obstetric view of their patients. We as obstetricians must be more than obstetric specialists, and must not only consider the general health and welfare of the mother but also constantly remember the life of the offspring committed to our care.

One might ask when prenatal care should begin. One could answer that it begins in the antenatal period with the prevention of disease and prematurity. It is of great importance in infancy in the prevention of the development of rachitis, which causes in later life obstetric complications.

In the study of a maternity case one should develop the history of the patient with diseases; and, of course, the facts of obstetric importance should be included. A careful physical examination should be made with special obstetric observations. Subsequently the patient should be under continuous supervision, and routine observations made of such commonplace things as weight, temperature, pulse, hemoglobin, blood pressure, urine, and certain other symptoms both subjective and objective. This has been our procedure for many years, and we shall try to express as definitely as possible the results we have been able to obtain in 2,000 cases of pregnant women who have come under our supervision for antenatal care. This series does not include patients seen in consultation, but only those who came of themselves or were referred by physicians to be under our supervision and care. As we have given special attention to this type of work, it would be only natural to expect a somewhat higher percentage of abnormal cases than the common run of obstetric practice would show.

We have included a considerable number of expectant mothers who have sought our care because of difficulties in previous pregnancies or because they had knowledge of some complicating condition. We have also incorporated a group of referred cases sent by physicians who did not wish to take the responsibility of handling the pregnancy and labor in the presence of certain complicating conditions.

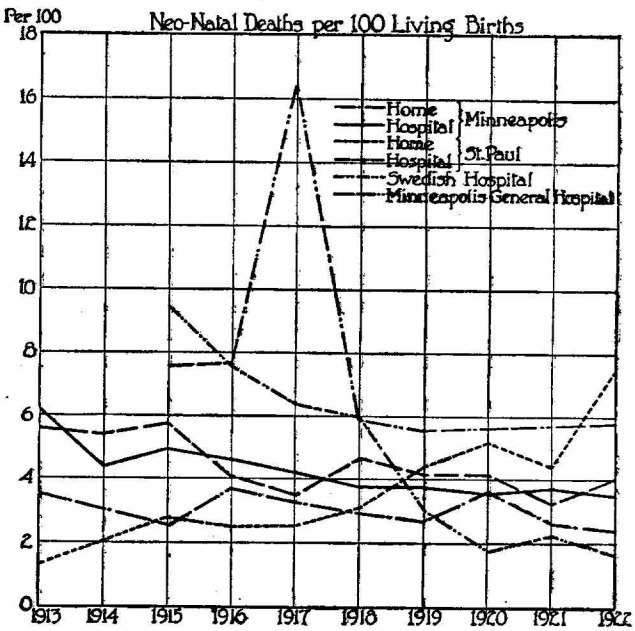

Chart 1.—Neonatal deaths per hundred living births.

In our series we have included all cases of intrauterine pregnancy in which we have given prenatal care within a specified time. This is made up of our last 2,000 cases prior to May 1, 1923. The only cases excluded are those in which we have given no antenatal care which were seen in consultation either when the patient was in labor or after the development of some serious complication. We feel justified in excluding these cases because in this paper we are trying to reach some conclusions regarding the results that can be obtained by careful supervision of obstetric patients.

In our 2,000 private cases of intra-uterine gestation there were 902, or 45 per cent., primiparas and 1,098, or 55 per cent., multiparas.

The gestation was terminated before the period of viability in 105 pregnancies, or 5 plus per cent. In 1,895, the gestation reached the period of infant via-

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bility. There were nine multiple pregnancies in the group, making a total of 2,009 offspring. There were two women who died undelivered, leaving a total of 2,007 fetuses and new-born. The abortions as given above account for 105 of these, which leaves 1,902 pregnancies which went to the period of infant viability. Of these, 1,834, or 91 plus per cent., resulted

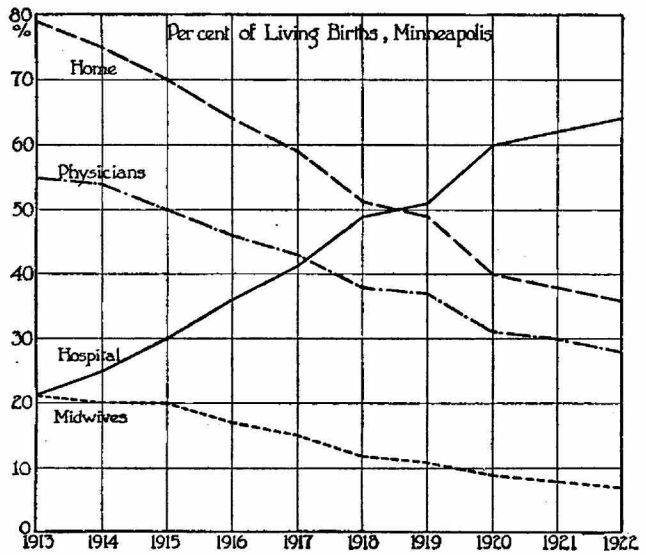

Chart 2.—Percentage of living births in Minneapolis.

in living infants, and sixty-eight, or approximately 3 plus per cent., were stillborn.

There were six maternal deaths, or 0.3 per cent., and forty-two, or 2 plus per cent., of neonatal deaths.

ABORTION IN RELATION TO ANTENATAL CARE IN ITS EFFECT ON THE OFFSPRING

Threatened abortion, miscarriage, and premature labor constitute a very important phase of prenatal care. Among our cases there were seventy-four women who had symptoms and signs which led to this diagnosis and whom we were successful in carrying to a period of infant viability by the use of absolute rest in bed, with doses of morphin and atropin pushed to the physiologic limit, if necessary. Of these, twenty-nine were primiparas and forty-five multiparas. Two of these babies died neonatal deaths. The others survived. There were fifteen therapeutic abortions done in our routine cases, a percentage of 0.7. The indications for the performance of this operation will be considered under pathologic conditions in the mother, as, in our opinion, it is almost axiomatic that a therapeutic abortion could never be considered to be in the interest of the offspring. It is perhaps unnecessary to speak of this, but some physicians fail to grasp this self-evident fact.

There were three abortions which followed operations done on the genital organs. There was one case of hydatidiform mole among our routine cases, a percentage incidence of 0.05. There were also three ectopic pregnancies, an incidence of 0.15 per cent. Antenatal care could have no effect on the last two conditions so far as the welfare of the fetus is concerned.

Of the remaining eighty-nine abortions, thirty-one were incomplete and fifty-eight were complete. Of these, thirty occurred in primiparas and fifty-nine in multiparas.

We have not considered missed abortions or pathologic abortions in this discussion because at present one is at a loss to know how to benefit the offspring in these cases by antenatal care.

We should like to mention cases giving a history of habitual abortions in whom no definite cause for its occurrence could be found. We have a small series of these cases in which corpus luteum was administered hypodermically during the first trimester of pregnancy. It is difficult to know what would have occurred in these cases without its use, but a number of the patients have gone through to term and given birth to normal living infants for the first time.

PREMATURITY

Prematurity is a very serious handicap to the new-born. In our series of cases there were born alive seventy-three premature infants, which is a percentage of 3.7 of the total pregnancies and 4.0 per cent. of the living births. Of these premature infants, sixteen, or 22 per cent., died within one week after birth; the others survived the neonatal period. The sixteen deaths of premature infants made up 36 per cent. of our neonatal deaths. Of the sixteen infants, five were nonviable, which accounts for 32 per cent. of the neonatal deaths of premature infants. The causes of death among the others were toxemia, two; accidents of pregnancy and labor, six, and prematurity with cause not determined, three.

As already stated, sixteen of our forty-two neonatal deaths were in premature infants. Of the remaining twenty-six, the deaths were in babies born at term; eleven of these had some brain injury, probably due to or associated with hemorrhage resulting from trauma or hemorrhagic disease. Congenital defects caused eight deaths. The nature of these defects was:

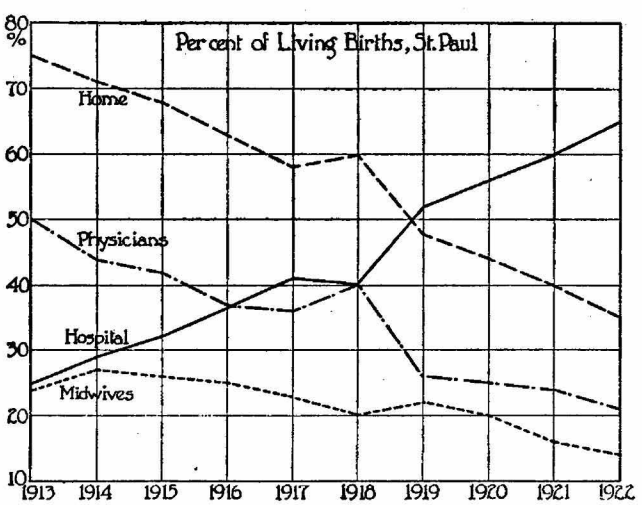

Chart 3.—Percentage of living births in St. Paul.

mongolism, one; cardiovascular disease, four; defect of the central nervous system, two; defect of biliary tract, two, and enlarged thymus, one. The other six infants died from: toxemia, one; infection, one; accident of labor, one, and causes not determined, three. We note that 1.4 per cent. of our living term babies died neonatal deaths, and in all living births there were 2.3 per cent. of neonatal deaths.

STILLBIRTHS

Stillbirths make up one of the great and important obstetric problems, and they might be divided into two groups:

First, those infants which die before the onset of labor and can be saved only by antenatal care. It is not to be supposed that we can save all of these. We

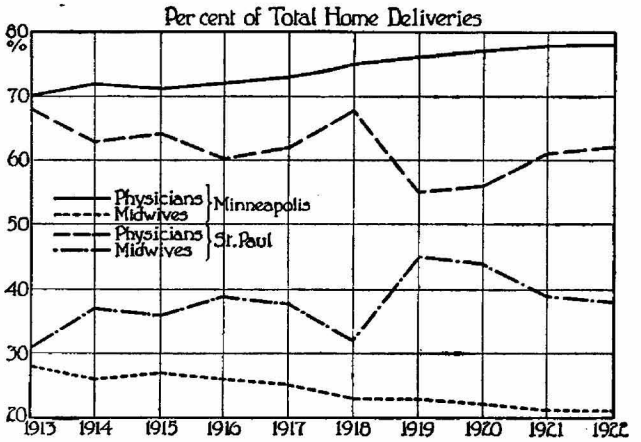

Chart 4.—Percentage of total home deliveries.

can save some, and, as our knowledge increases, probably the lives of more can be preserved.

Second, those infants which lose their lives during labor. The lives of these infants are not to be saved by antenatal care so much as by better natal care. In all, we had sixty-eight stillbirths, which is a percentage of 3.7 of the total living births. Of these, thirty-seven, or 2 per cent., were born at term, and thirty-one, or 1.7 per cent., were prematurely born. Of the prematurely stillborn, twenty-five died before the commencement of labor and six died during labor. The causes of the antepartum deaths were syphilis, two; toxemia, eleven; maternal infection, two; hydrops fetalis, two; monstrosity, one; accidents of pregnancy, four, and causes not determined, three. Intrapartum deaths occurred in six instances among the premature births: toxemia, two; prolonged labor, one; second twin one, and faulty presentation, two. There were thirty-seven stillbirths at term, in which eleven infants died antepartum and twenty-six intrapartum. The antepartum deaths were caused by syphilis, one; toxemia, two; accidents of pregnancy, two, and cause not determined, six. The twenty-six intrapartum deaths were caused by dystocia, nineteen, in which forceps were used eight times; podalic version, three; breech extraction, three, and craniotomy, two; and spontaneous delivery occurred three times. Aside from the foregoing causes of death were prolapsus funis, three; monstrosity, one; cerebral hemorrhage, one; toxemia, one, and cause not determined, one.

WELFARE OF THE MOTHER

The other important problem involved, aside from the welfare of the offspring, is that of the mother. It is very vital to know what can be accomplished for her.

In the first place, good natal care can be secured only by good antenatal supervision, because by this method alone can proper and adequate preparations be made for the care of mother and child during the natal and postnatal periods.

Another important problem is the detection and eradication of abnormal conditions in the pregnant woman, with ultimate benefit to both her and the offspring. We wish to present some data, gathered from our series of private cases, bearing on this problem.

We will first consider the question of abortions. An abortion is more serious for the offspring than for the mother. Aside from the effect on the maternal impulse, the woman suffers no ill effects from the abortion except such as result from certain complications, such as hemorrhage or infection. It should be remembered that infection may cause death, morbidity and sterility of the prospective parent. The management of abortion is of great importance to the mother for her future welfare and happiness and, even though disastrous to the individual offspring, the result of the treatment should not be such as to deprive the woman of life, health or the future opportunity to bear children.

In all our cases there were 105 abortions and miscarriages, which means that about one in ten of our total pregnancies terminated in an abortion. This is much better than the usual ratio of one abortion to four pregnancies and is a definite accomplishment of antenatal care as shown, for instance, by the results of treatment of threatened abortions. Doubtless, more of the abortions could have been prevented if the patients had appreciated the importance of early symptoms and if some had been more willing to cooperate in an effort to prevent their occurrence.

In our series there was no fatality among mothers. There were no serious infections. About one third of our patients were curetted.

The incidence of pathologic abortion in this group was not high.

Nonobstetric operations on the genital organs of the pregnant woman are not frequently required. In our routine cases they did not exceed 0.5 per cent. Of patients operated on in early pregnancy, fully 50 per cent. had a termination of the pregnancy following the gynecologic operation. We feel, therefore, that gynecologic operations on the pregnant woman should be undertaken only when the interest of the prospective mother demands such interference, and that it should be done with the understanding that the fetus has not better than an even chance of survival. Therapeutic abortions are done to preserve the health or life of the prospective mother alone.

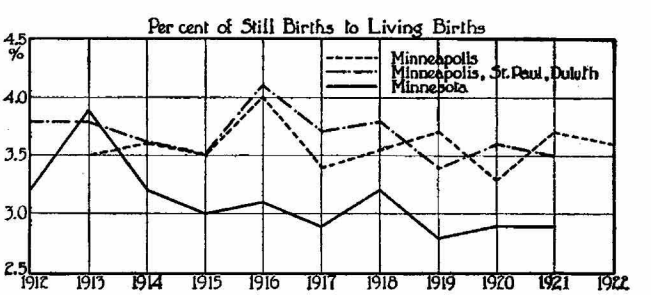

Chart 5.—Percentage of stillbirths to living births.

In our routine patients it was deemed necessary to terminate the pregnancy by therapeutic abortion in fifteen instances, or 0.7 per cent. of the cases. The reasons were: tuberculosis, five; hyperemesis gravidarum, six; cardiac disease, one; mental disease, two, and pyelitis, one. The subsequent course of the disease in these patients seemed to justify the procedure. It was not often that disease in the mother justified the

early termination of pregnancy, and in those it was of a persistent and more or less chronic character.

We have encountered many serious acute infections, especially of the respiratory tract; but, owing to careful supervision of the patients, who have been kept quiet, the mortality has been low. We lost three patients from pneumonia that developed during pregnancy. Cardiac disease is relatively frequent; but, with careful attention, serious complications are rare. In one instance of a mitral stenosis with a broken compensation occurring early, it was thought best to terminate the pregnancy. In another instance with a mitral stenosis, the interruption of pregnancy was seriously considered, but abandoned. The patient died subsequently from a pulmonary edema after labor followed by pneumonia. A clinical diagnosis of cardiac disease was made in about 4.5 per cent. of our cases. This emphasizes the importance of an antenatal examination of the cardiovascular system.

Thyroid hypertrophy was commonly found, and nontoxic goiters were not uncommon. We have had no toxic goiter in our prenatal series of cases. It may be regarded as a rare occurrence.

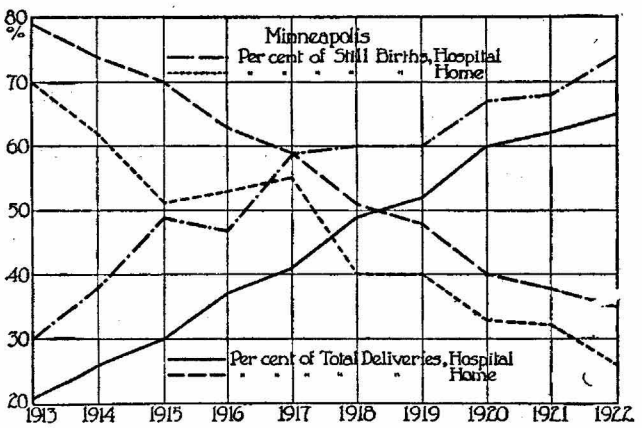

Chart 6.—Percentage of stillbirths and of total deliveries, Minneapolis.

Affections of the gallbladder and appendix which require operation are not of great frequency, but should be kept in mind.

Acute disturbance of the gastro-intestinal tract associated with diarrhea should be promptly and carefully treated, as such affections are very likely to be followed by abortions.

Diseases of the urinary tract are not infrequent. Cystitis and pyelitis are seen rather frequently, but with appropriate care usually result favorably. It is rarely necessary to terminate the pregnancy because of pyelitis.

In the type of patients encountered in this series, acute infections of the genital tract, such as gonorrhea, have been rare. The few cases which we have cared for have responded slowly to treatment, but no serious complications developed. Treatment should begin as early in the pregnancy as possible and be carefully carried out to as complete a cure as possible before the termination of pregnancy.

Syphilis is of great general importance, but in our group relatively few cases were found, which accounts for the few fetal deaths from this cause. One patient died undelivered while receiving active treatment. The patient died in a rapidly developing coma, the exact cause of which was never determined. The incidence of syphilis in our cases was not over 0.5 per cent.

Diabetes is occasionally seen, but with careful attention the patients may be carried through pregnancy with relative safety. The ultimate outlook has in the past not been particularly good. We had no fatalities in six cases.

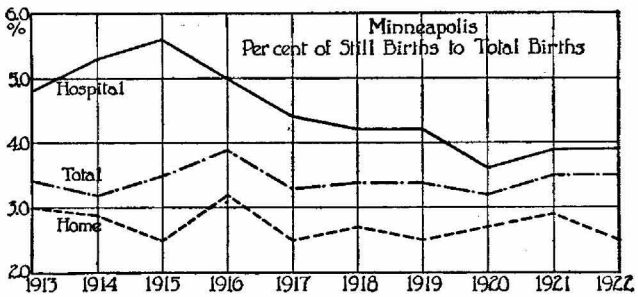

Chart 7.—Percentage of stillbirths to total births, Minneapolis.

We had many patients with some toxic symptoms, 143 in all, which is an incidence of about 6.5 per cent. Of these, there were thirty-eight with rather mild symptoms. Of the others, thirty-three had marked hyperemesis, and in six of these it seemed necessary to empty the uterus. There were no fatalities in this group. The others were delivered of viable infants with one exception. In this case, complicated with syphilis, there was a stillbirth. Most of the other cases showed varying degrees of hypertension, albuminuria and edema. The results with regard to the offspring have already been mentioned. So far as the mothers are concerned, we have had no fatalities when we have had an opportunity to give antenatal care. Convulsions occurred in eleven of the patients either antepartum, intrapartum or postpartum.

It was deemed advisable to try drug induction in a considerable number of the cases, and the bag was resorted to in seventeen of them.

Vaginal hysterotomy was done in one instance and abdominal cesarean section was done twice. Other methods of delivery were resorted to as seemed necessary in individual cases.

We feel justified in concluding that maternal, but not fetal, deaths from toxemia may be practically elim-

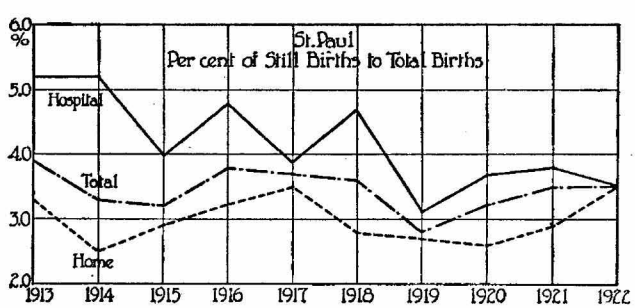

Chart 8.—Percentage of stillbirths to total births, St. Paul.

inated by adequate antenatal supervision and intervention at the proper time.

Nephritis is, of course, an important complication of pregnancy, but is of much less seriousness than toxemia because of its lesser frequency and danger. It should be differentiated from preeclampsia, which can usually be done by a careful history. The presence

of many casts in the urine is suggestive of nephritis. It should be remembered that a toxemia may be superimposed on a nephritis. We had six cases of true nephritis in our series. The immediate outlook for the mother is not bad so far as life is concerned. Fetal death is not uncommon, resulting in one half of our cases.

Focal infections occurred with relative frequency, usually in the mouth, accessory nasal sinuses, and

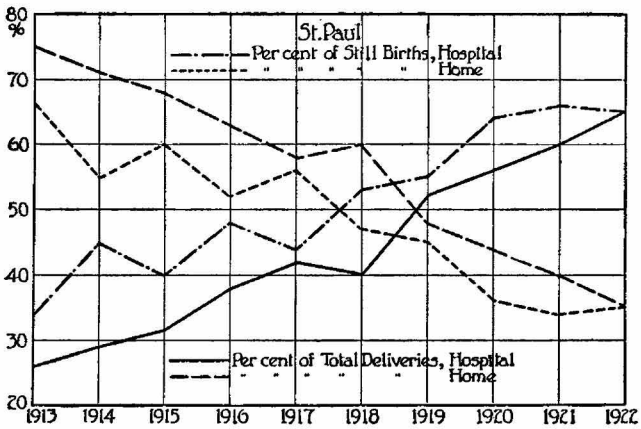

Chart 9.—Percentage of stillbirths and of total deliveries, St. Paul.

pharynx. These infections were both acute and chronic, giving rise frequently to both local discomfort and remote symptoms. We have noted such definite infections in 134 instances. Oral infections were demonstrated in seventy-eight of the cases, definite tonsillar infections in thirty-three, and sinus trouble in twenty-three cases. These conditions should receive appropriate treatment even during pregnancy. Nine of these patients, or about 7 per cent., developed definite toxic symptoms of the preeclamptic type. Abortions were noted in five of these cases. The incidence of the two conditions mentioned was somewhat more frequent in this group than in the general run of cases.

The correction of malpositions is of considerable importance. This can be done in some cases during the antenatal period. In twenty-six instances we were successful in permanently converting breech presentations to cephalic positions. In this group, two forceps operations were necesary to complete the delivery. There was one intrapartum stillbirth following the induction of labor. We feel sure that we should have been unable to secure as good results for mother and child had we allowed the breech presentations to persist in these twelve primiparas and fourteen multiparas. There were a few instances in which we successfully corrected faulty cephalic positions and cross presentations.

It is, of course, of prime importance to appreciate and properly evaluate obstetric complications, and predetermine, so far as possible, the course of procedure during labor. That there is room for improvement in our series is shown by the considerable number of infant deaths due to dystocia. The recognition of small pelves and oversized babies, as well as a careful history of events in previous labors is of great assistance to us in deciding beforehand the best line to follow in the conduct of these cases. In our community, pelvic deformities are relatively uncommon and usually of a mild degree. This perhaps makes us a little less keen in looking for them, and most of those we do discover are relatively difficult to diagnose.

Malpositions of the uterus, especially retroversion, are rather frequent, and often give rise to unpleasant symptoms and may be a factor in the production of abortions. Patients should always be examined for the presence of this condition, and, in our opinion, we have relieved many mothers of symptoms and prevented a considerable number of abortions by the early recognition and appropriate pessary treatment of this condition.

Malformations of the genital tract should be kept in mind, but are of relatively infrequent occurrence.

In order to avoid being accused of important omissions, we should like to mention the necessity of proper advice to mothers regarding the mode of living, personal hygiene in general, and also the care of the genitalia and breasts.

Maternal deaths were too frequent to suit us, but the percentage was not high, about 3.3 per thousand living births. The causes of deaths in these cases were: cardiac insufficiency, one; tetanus, one; antepartum influenzal pneumonia, two; antepartum death due to acute cerebral disease in a syphilitic patient, one, and postpartum lobar pneumonia, one. One half of our maternal deaths occurred from diseases which developed antepartum, and we do not know how we could have prevented these fatalities. How the infection with tetanus developed we do not know, though the patient had a suspicious oral infection antecedent to the development of the tetanic infection. We had no deaths from toxemia or puerperal sepsis.

RESULTS AT TWO HOSPITALS

For comparative purposes we wish to enumerate briefly some of the results obtained in two of the maternity wards of hospitals in Minneapolis, viz., the Swedish Hospital and the Minneapolis General Hospital.

At the Swedish Hospital, all patients are under the care of private physicians and receive a certain amount

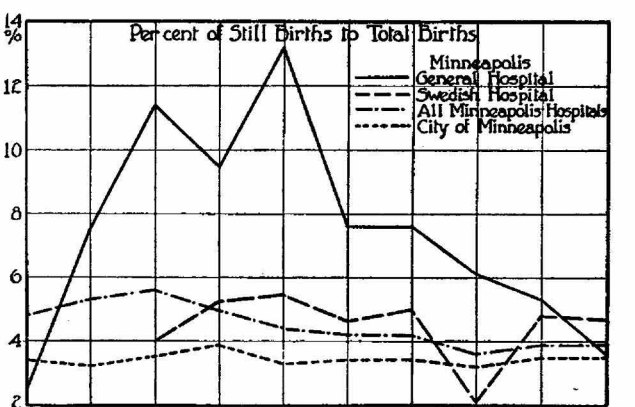

Chart 10.—Percentage of stillbirths to total births, Minneapolis.

of antenatal care. We have in this series 1,512 cases of pregnancy admitted to the hospital from November, 1921, to April, 1923. There were 206 cases of abortion in this series, a percentage of 13. Therapeutic abortion was done thirteen times for tuberculosis, toxemia and mental conditions. There were 104 premature births, a percentage of about 7. Over one fourth of these premature infants were either stillborn or died neonatal deaths. There were fifty-eight stillbirths and thirty-four neonatal deaths, a percentage of 4.7 and about 3,

respectively, in relation to the total living births. There were eight maternal deaths, or 6.5 per thousand living births. Of these, five were due to toxemia, and might have been prevented by better prenatal care. There were no deaths due to puerperal infection, which speaks well for the hospital technic.

In the Minneapolis General Hospital, during 1922, there were 210 abortions; and the reported births were

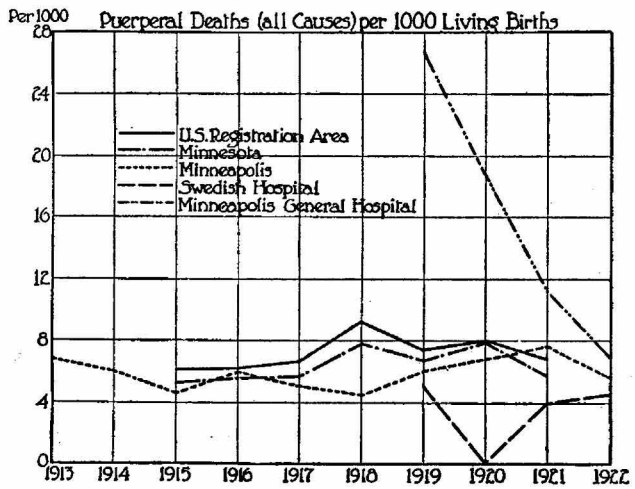

Chart 11.—Puerperal deaths (all causes) per thousand living births: comparison of statistics for registration area of Minnesota, Minneapolis, and certain Minneapolis hospitals.

1,069, making a total of 1,279 cases. This makes a ratio of 1:6. Of the 210 cases, fifty-four were admittedly induced. Here is one fruitful field for antenatal care.

In this series of 210 abortions, there were thirty which were discharged as threatened abortions. Of these all except two were subsequently followed by our prenatal clinic, with the result that thirteen patients were delivered at term and fifteen aborted. Very few of these patients, not over 4 or 5 per cent., had received antenatal care prior to the development of symptoms of abortion. There was only one maternal death in this series of 210 abortions; it took place in a woman who was removed to a private hospital where she could receive more active treatment.

During this year there were forty-three stillbirths, a percentage to living births of about 4.4. Of these, twenty-two, or about one half of the infants, were delivered at term. Of the twenty-one premature stillbirths, ten or about half, occurred before the period of viability was reached.

Twelve patients died at a result of dystocia and complications of labor; some of these infants might have been saved had the patients received prenatal care and been hospitalized earlier. Complications of pregnancy caused five of these fetal deaths. Syphilis was responsible for six of the forty-two stillbirths. Other causes of fetal death were: fetal diseases and malformations, five; toxemias, two; miscellaneous factors and undetermined, thirteen. Only twelve of the forty-three patients, or 28 per cent., had any antenatal care.

There were sixty neonatal deaths; about eight of these patients, or 13 per cent., had some prenatal care. The causes of death were: prematurity, forty-one; hemorrhagic disease, seven; congenitally weak, diseased and deformed infants, six; miscellaneous and undetermined, six. No doubt, with proper antenatal care the incidence of prematurity could be somewhat reduced.

Maternal deaths in 1922 were only two, one from toxemia and the other from puerperal psychosis with epilepsy, the ratio to living births being about 2 per thousand.

In 1921 there were six maternal deaths, due to puerperal sepsis, three; ruptured uterus, one; tuberculosis, one, and placenta praevia, one. During this year there were about 800 living births, a ratio of about 7.5 per thousand living births.

An interesting phase of our prenatal work is the dental work done on our patients by Dr. D. E. Ziskin. We try to get all of our expectant mothers to go to the dental clinic for examination. About 200 patients who have been to this clinic have been delivered. In this group of 200 cases there have been two premature stillbirths and two stillbirths at term. This is a relatively low percentage of stillbirths. Three patients showed moderate hypertension; one had marked albuminuria with a premature stillbirth.

Bad oral conditions were found in many, with abscesses of 149 teeth; pyorrhea in forty-eight cases; roots, 234 times; gingivitis in fifty-one cases; strawberry red gums in ten cases, and cavities 666 times. The following procedures were carried out: prophylaxis in 111 cases; 586 fillings; teeth extracted, 457, and alveolectomies eight times. This shows that necessary dental work can be done not only without apparent harm to the pregnant woman, but seemingly with benefit.

VITAL STATISTICS AT MINNEAPOLIS AND ST. PAUL

We have also studied the vital statistics for Minneapolis and St. Paul for the last ten years, being indebted

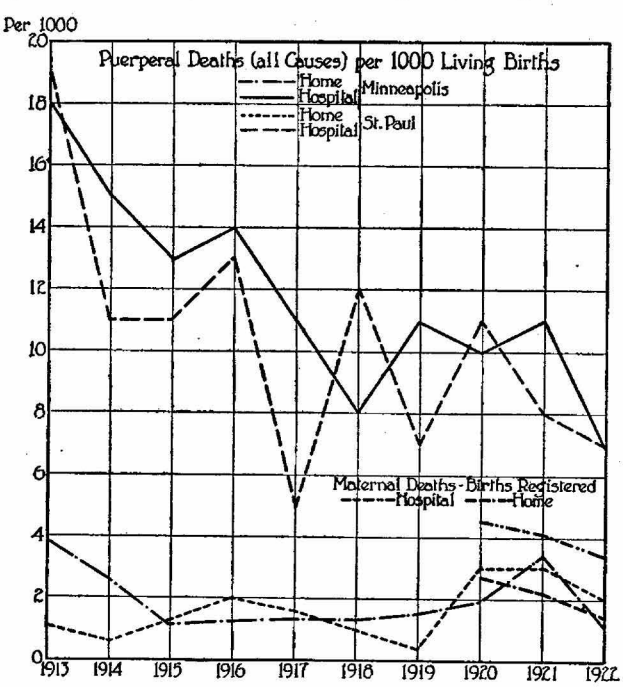

Chart 12.—Comparison of puerperal deaths (all causes) in hospitals and homes of St. Paul and Minneapolis; short curves show number of maternal deaths according to place of birth.

to Dr. F. E. Harrington of the Minneapolis Department of Health for the former statistics, and to Dr. A. J. Chesley of the Minnesota State Board of Health for the information regarding the latter city. The most striking feature is the almost identical percentage increase of the hospitalization of maternity cases in the two cities. There has naturally been a proportionate

decrease in the percentage of home deliveries. The present relationship between hospital and home deliveries is almost the reverse of that ten years ago. Naturally, the number of deliveries by physicians and midwives in the homes has decreased. In Minneapolis, the number of deliveries by midwives has both actually and relatively decreased. The number of deliveries by physicians in the homes has decreased, but has increased in relation to the percent of deliveries by midwives. The condition is the reverse in St. Paul.

During this period, the percentage of stillbirths and puerperal deaths in the hospitals has gradually decreased, though naturally remaining somewhat higher than in the homes, because of the fact that more patients with complications enter the hospital and because puerperal deaths and stillbirths are more completely and accurately returned from institutions.

The improvement in relation to stillbirths is greater than is apparent from the vital statistics, because we are now reporting to the department of vital statistics all births subsequent to the fifth month of gestation. Formerly, only those after the seventh month were reported. This increases not only the number of premature births, but also the number of stillbirths and neonatal deaths.

OBJECTS OF ANTENATAL CARE

We believe we have brought out some of the things to be accomplished by proper prenatal care and supervision:

1. The reduction of sterility by securing proper care for mothers, and the consequent reduction of infection.
2. The lessening of the number of abortions.
3. The diminution in the number of premature deliveries.
4. The reduction of the number of stillbirths.
5. The saving of infant life during the neonatal period.
6. The saving of the health of the mothers.
7. The virtual elimination of maternal deaths from toxemia and infection by proper instruction, supervision, preparation, and treatment of mothers during the periods of gestation, parturition and the puerperium.

2500 Blaisdell Avenue South.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. RUDE, AND ADAIR AND MALAND

DR. HUGH A. COWING, Muncie, Ind.: Maternal mortality is too high. This is true in Indiana, where the maternal death rate has not changed in fifteen years, and where the infant mortality rate, 71 per thousand, should be lower. One-half our baby deaths are from premature births (not counting 10,094 stillbirths in the last five years), and one-half the maternal deaths are due to septicemia. How may we improve obstetric practice? Briefly, we may answer: With better facilities for bedside instruction in hospital schools, more postgraduate obstetric work, more and better hospitals for obstetric service, and greater prominence of obstetric subjects in medical societies. Obstetrics should be dignified. The public should be educated to appreciate the best in obstetric practice. A permanent personal record of every case should be kept. Strict asepsis is invaluable. Patience and wisdom are essential. Meddlesome midwifery contributes much to maternal mortality and morbidity. The obstetrician may be selected for service because of a pleasing personality or a neighborhood popularity rather than because of any special fitness for obstetrics. Sometimes he is overworked and without adequate assistance, and as a result his technic and his patient suffer. The great problem of motherhood cannot be solved by the physician alone. Maternity and infant care bring a responsibility not only to the family, but to the community and to the state. Prenatal, maternal and infant care should be adapted to the needs and conditions in the community. Dr. Schweitzer, our director of the division of infant and child hygiene, reports that the problem of the professional midwife is practically limited to the areas with foreign population. As to prenatal care, 97 per cent. of the mothers who brought children for examination at the division conferences had a physician attendant at birth. Mothers who had adequate rest before delivery had fewer complications and healthier babies. Fifty-four per cent. of the mothers had from two to nine months' prenatal supervision by a physician. Of 4,820 mothers, 86 per cent. report good recovery and 83 per cent. good health from two to five years after the birth of the child examined. Our report on obstetric care includes the mothers and babies brought to the conferences in four counties in Indiana in 1922. The report on 9,985 pregnancies indicates the need of better conditions, including better obstetrics. Stillbirths averaged one in thirty pregnancies, and miscarriages one in nine pregnancies. Our board, through our child hygiene division, is conducting a campaign of publicity and education, instructing mothers in baby health conferences, and also teaching public health nurses to become helpers and instructors, and establishing health centers where physicians and nurses give instruction in maternity and infant care, and encouraging local organizations to continue this work.

DR. G. C. MCPHEETERS, Fresno, Calif.: Every few years this problem of the midwife bobs up, and it is discussed more or less in a hopeless manner. A midwife, whether she is very bad or merely mediocre or whether she is passingly good, may be compared to the use of the lumbering stage coach of early days, which was used because there was no better means of transportation. Obviously, the midwife is being used because she is a makeshift and because we have in those districts no better means of maternal and postnatal care. As we provide better means, the midwife will gradually disappear, as the stage coach has disappeared from transportation in our country. The education of the medical profession, primarily, and then the education of the lay public in the appreciation of what constitutes maternal care is necessary. The education of the midwife alone will never accomplish this problem any more than the improvement of the old stage coach would improve transportation. The education must concern itself not only with the people of the present generation, but also with the education of young people in our schools and colleges. I would be in favor of this section's appointing a standing midwife committee which should classify and compile laws of the various states with regard to midwives. We might then recommend to those states that are still floundering in the sea of midwifery some standard laws to educate the profession and the public to the need of better obstetric care. I would be in favor of having a committee on sex instruction which could compile data to be furnished to those who are teaching sex subjects in our schools. The young people of our generation and of the coming generation should know what to expect in prenatal care, what to expect in the important problem of confinement, and what to expect about postnatal care. In my work in obstetrics, I have been able to control the nausea and vomiting of pregnancy in its early stages so that the vitality and strength of the mother is saved and so that the existence of severe nausea and vomiting and hyperemesis gravidarum may be prevented in many cases. I have instructed the mother so that she may preserve her figure and the contour of the body so that her health in later life is preserved. Enteroptosis is prevented. We have been able to control hyperthyroidism in some mothers, and I think I have been able to prevent the development of goiter. I have detected early hypothyroidism and prevented obesity. I have been able to teach our mothers more about the vital problem of breast feeding so that there is a higher than normal incidence of breast feeding.

DR. RUDOLPH W. HOLMES, Chicago: It seems to me a sad commentary on the practice of modern obstetrics that we have on one side the invaluable contribution of Drs. Adair and Maland, and a discussion of the midwife problem on the

other. About twenty years ago I headed a committee of the Chicago Medical Society to investigate the midwife. We, as a committee, believed that the midwife problem was a matter of economics, and a matter of education. Legislation does not improve the status of the midwife, unless it is accompanied by careful, conscientious supervision of accredited authority. Education of the public to something better in obstetrics will eliminate the midwife. At the same time, obstetric dispensaries must be created to care for the indigent obstetric woman. During the war, at the high period of affluence of the working people, the midwife cases diminished more than 25 per cent. With the recurrence of poverty after the war, the numbers of midwife cases increased greatly. In the last twenty years, the number of midwives in Chicago diminished from 400 to about 200. This is a natural reduction. With proper supervision of the midwives' work, there is not such a problem as we have believed. The director of infant welfare of New Jersey has shown that the maternal morbidity and mortality, as well as that for the baby, is less in the hands of the midwife than in the hands of the physician. Likewise, Nicholson showed that this was true in Pennsylvania—and is true because there is adequate supervision. We believe that the increasing death rates for the obstetric woman and her child are due to two causes. During the last ten years, too many of our assumed authorities have demanded that all women must have operative deliveries; that routine cesarean sections, forceps, versions and bag therapy spell greater success than spontaneous effort on the part of the woman. Their successes may be comparable to those in which watchful expectancy was the rule, but this teaching, going out to us, the rank and file of the profession, convinces us that this is the ultrascientific course to follow. Without a development of that skill which comes from an enormous clientele, without the facilities of a modern maternity clinic and all that goes with it, we blindly follow only to be led to disaster. The promulgation of an operative furor has greatly contributed to the present high maternal and fetal mortality. The second point is that since the influenza epidemics, infections during the puerperal state have increased. We see this in the greatly increased numbers of breast abscesses and general puerperal infections, for which increase, focal infections are largely responsible.

DR. HENRY PARKER NEWMAN, San Diego, Calif.: The issue of today is for the proper handling of obstetrics. Motherhood and childbearing should be a health-giving and not health-destroying or health-impairing function. But what is it? Sixty-five per cent., and more, is the morbidity of the child-bearing woman. We see it in our gynecologic work every day. A remedy has been suggested, largely the supervision of pregnancy, prenatal and post partum, covering the period in which we restore the individual mother as well as the child to normal health. I wish we could all take this home with us and emphasize the importance and carry out the instructions that have been given us today.