XXIII. MATERNITY SERVICES

MATERNITY SERVICES

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THE PRINCIPLES OF MATERNITY SERVICE

(1) "The aim of adequate maternity care is the minimum of mental and physical discomfort during pregnancy, the maximum of mental and physical fitness whereby she may keep herself and baby well".

Prenatal care, clean deliveries, and intelligent motherhood are the three requirements to reduce maternal and infant death rate. Obstetrical care today stresses the future health of the mother and baby, as well as the immediate safety. The death rate is high in spite of the good care given. The reason perhaps for this is, that it is such a common event, it is considered a perfectly normal incident of life. We are used to hearing that child bearing is not a disease but a normal function. This is not true, since great stress is placed on the mother at this time, which may result in disease. Too much is taken for granted. Only when assistance will be given throughout the entire period, under good medical and nursing care, will the death rate be reduced. It behooves both doctors and nurses to bear in mind there are many ways of doing well, many things.

Maternity care exists throughout every part of the world. The medical and nursing service should be available before, during pregnancy, and following delivery. The environment and attitude of the family and patient will be different, but this should not make any difference with the necessary service of the nurse, since two lives are in her keeping.

The services of the doctor and nurse are distinct and the nurse

Footnote: (1) Maternity Center Association, New York City. The Unborn Child, The Oregon Nurse, Johanna Eggers.

at no time should assume any of the care of the doctor.

Infection in pregnancy is preventable and is one of the greatest causes of mortality due to childbirth. In severe cases, the birth tract becomes infected and the patient has septicemia.

The Government report on 7380 deaths from puerperal causes found that forty percent were due to infection, twenty percent due to delivery near term, which means the child bed infection of mothers is a serious fact.

Nature provides a mucus which keeps the vagina and cervix fairly sterile. Before birth, the uterus and birth sac are kept sterile by the unruptured membrane and the mucus in the cervical canal. During normal labor the amnotic fluid, the child and membranes move outward and tend to keep the canal clean. Vital resistance causes a wall to be built up against invasion.

The organisms in the vagina do not produce disease unless the patient is not well. Infection depends upon the vitality of the organisms and the resistance the body can offer them.

The maternal death rate continues to be high in the United States. Sixty three deaths in every 10,000 live births a year. Infant mortality rate is equal to fifty-eight deaths in every 1000 live births a year. The infant rate is decreasing some as obstetrical care has improved. For a country as far advanced as the United States, their figures should show the average person, that child bearing is not the simple procedure it has been considered, but is affecting the welfare of the future generation. The public, the doctor, and the nurse should do their share toward demanding an all around program which has yet to develope,if this demand was made by rich and poor we could hope for the coming generation.

In the last few years and more so today, it has become the work of the obstetrical and public health nurse to be teacher for the family and the pregnant woman, teaching prevention and after care. She has helped remove superstition and stressed proper care for the maternity care, carrying out the doctor's orders. Each nurse must assume her share of this responsibility, to improve this present condition in maternity and child welfare.

SURVEY OF PROBLEMS

Ramon S. Hooker, M.D., Director of the study made by the New York Academy of Medicine Committee on Public Health Relations, in connection with Commonwealth Fund in 1933, states:

The death rate was unnecessarily high in maternity cases. The percentage from all cases was proof of that fact. Two-thirds of all deaths were preventable if the women had had proper care. It was ignorance and insufficient training of the attendant which prevented him giving a high quality of care and prevented him from understanding the fact that he was incapable.

The death rate from puerperal causes has not decreased in the last twelve years in spite of improved treatment and hospitalization. Infant mortality and communicable diseases have decreased.

One of the first causes of the high death rate in maternity cases was due to patients who failed to seek prenatal care. If they did come to the clinic, it was too late in pregnancy, and it was impossible to give adequate service. This was true in the lower economic level. Other reasons for this high death rate are: inadequate and improper prenatal care by the attendant, ignorance on the part of the woman as to the proper care for herself, her neglect in reporting vomiting, bleeding, pain, hemorrhage and toxemia. Many of those who did return for treatment were not given proper care.

Forty-five percent of deaths, including abortions and ectopic gestation, resulted from operative deliveries; the operation chosen was the wrong one or undertaken at the wrong time; trial labor was too

prolonged; or the caesarian section operation attempted demanded greater training and skill than the attendant could give.

The incapacity in either judgment or skill added to this death list; the prognosis was incorrect; labor improperly conducted; operations on infected patients or attendants were tardy in getting proper consultation, and the lack of proper asepsis.

The standards and physical equipment of some of the hospitals were inadequate. Facilities for labor and delivery were lacking in many institutions. Isolation was not carried out as promptly as possible. The resident physician performed major operations unsupervised after telephonic communication and consultation with the attending physician. Difficult operations were done by junior members of the staff without consulting the chief. Many hospitals had no supervision over their staffs as each physician had his own standards. Midwives gave their share to the high death rate of the cases.

It was recommended that the prospective mother must have better prenatal care. Because a mother has had a normal delivery at one time or because her one visit indicates no difficulty, is no proof she will have a normal pregnancy this time.

The mother should be given information as to what prenatal care means, what to expect from the attendant as an urinalysis, blood pressure, and measurements of pelvis. She should be told what symptoms to watch for in order to prevent trouble later.

Operative delivery, to relieve pain or shorten labor, is dangerous.

The New York Academy of Medicine Committee further state that delivery at home is safer.

Lay people have attempted to give maternity information in the past. This is the task of the physician. He should give maternity information by teaching those connected with social service and lay organizations suitable to help in the work.

The training in the medical schools has been lacking in teaching normal obstetrics. To become a specialist requires longer study. So important has the subject of maternity become it might be necessary to prevent any but those qualified in maternity work to practice operative obstetrics.

Obstetrical societies or other qualified groups should have a list of the specialists who are permitted to practice operative obstetrics.

T. Floyd Bell, M.D. read his paper on "Maternal Mortality" at the meeting of the Northern Branch of the California League of Nursing Education, at Oakland, California, February 20, 1934. He states the maternity death rate is highest in the United States as compared with twenty civilized countries. Scientific advancement has been made in other branches of medicine but not in helping women in childbirth.

The report from the New York Academy of Medicine showed that sixty-five percent of the maternal deaths were preventable, sixty-five percent were ascribed to physicians, thirty-seven percent to patients and two percent to midwives.

Investigations by the Children's Bureau of the United States showed that seventy-five percent of maternal deaths due to abortion could be prevented.

Puerperal septicemia, eclampsia, and albuminuria are the more common causes of death.

Proper prenatal care and clinics where the woman could register and be observed would be a great help. In this connection, the physician needs good training and knowledge in clinical treatment as well as judgment.

Dr. Bell suggested five points which would reduce maternal death rate, namely, better education of the lay group, more obstetrical practical teaching in medical schools, for better general trained obstetricians, special training of nurses and social workers, and provision for post-graduate training in obstetrics to develope specialists.

The recommendations by the Advisory Committee on Maternal Mortality in fifteen states in the United States through the Children's Bureau 1934:

This study was made in fifteen states which were in the birth registration area where the state boards of health and medical society made formal request and promised the cooperation of the local physician.

Leadership in this maternity program is the physician's responsibility for control in both medicine and community program. If the physicians do not take this work up, some one else will from another group not connected with the medical profession. Five recommendations were made to adequately take care of the maternity service. It was suggested that the doctor must take the leadership; more accurate information was to be obtained on cause and prevention of maternal deaths, physicians should have the fundamental of obstetrics, that all physicians work toward a plan, a regional obstetrical consultant supported by the state medical societies and state board of health, also, that the general public be better educated, that the community has a responsibility in seeing that every pregnant mother has proper care, that the physicians, nurses, and midwives have better training in obstetrics, according to the standards of American College of Surgeons, for hospitals taking obstetrical patients.

The death rate is two and one-half times as great as any other nation and more than any other civilized nation of the world on which statistics can be obtained. The maternity death rate has increased in the last ten years although the general death rate has decreased. Throughout Europe, the death rate due to puerperal septicemia has decreased in the last twenty to thirty years. Mothers not only die from this cause but are left permanent invalids or have ill health the remainder of their lives.

Seventeen thousand women die from childbirth in the United States each year. A greater number die from this cause between the ages of fifteen and forty four years of age than any other cause, but tuberculosis.

(2)

Finland 1927	-3.0%
Netherlands 1930	-3.3%
England & Wales 1931	-4.1%
Switzerland 1929	-4.6%
Canada 1929	-5.0%
New Zealand 1930	-5.1%
Italy 1929	-5.6%
United States 1930	-6.0%
Birth registration area in maternity center area	-2.2%

Some statistics are not kept the same in various countries, it is difficult to make comparisons. These figures just quoted are from reliable authorities and show the death rate of United States is higher than Europe.

The chief factor in influencing this death rate is the colored race, in which almost twice as many women die during childbirth as white women. The colored women have rachitic pelves, poor general condition and lack of obstetrical care. Other causes are; poor housing, lack of food,

Footnote: (2) Provisional figures. Statistical Bureau, Metropolitan Life Insurance Company.

lack of medical and nursing care, and fatigue due to over work during the pregnancy.

In European countries the death rate is lowest among the Russians and Italians. It is highest among the Irish, English, Canadians, Hungarians and German peoples.

The mortality rates among babies were higher in forty six-states in the United States and the District of Columbia in 1930. This was thirty-nine percent for the still birth rate and the rate for babies under one year was sixty-four percent according to Dr. Louis I. Dublin, with the Metropolitan Life Insurance Company, 120,000 babies under one year die yearly from causes which are preventable. This is due to ignorance of mothers and fathers and the difference of communities.

PRENATAL MORTALITY RATES

(1)"There is a cropping time in the races of men or in the fruits of the field; and sometimes if the stock is good, there springs up for a time a succession of splendid, then comes a period of barrenness."

Aristotle

It had taken ages even for a beginning of an understanding of the human body and its workings. David in the Psalms spoke of how wonderful the body was but knew little about it scientifically. It was 1500 B.C. when we received the first reliable information on the human body. The experimental work of Aristotle and others was done on animals and accepted for more than a thousand years.

Hippocrates, the father of Medicine, believed that the uterus of a woman was double and like a double barreled gun, discharges male fetuses from the right and female from the left barrel; that the fetus sat placidly on the brim of the pelvis and then took a header into the outer world; that its time of waiting was spent, amongst other things, in learning the act of sucking, for how otherwise could it do so intelligently from the first. Not until the sixteenth century did Vesalius defy all civil and ecclesiastical laws in the pursuit of his investigations. He robbed the graves and the gibbet, daring to dissect the body of a man. He was imprisoned, excommunicated, and while sent to the Holy Land, was lost in a shipwreck. He has now become the saint and benefactor of modern science.

William Harvey, two-hundred years after, developed the theory of

Footnote: (1) Johanna Eggers, "The Unborn Child", The Oregon Nurse.

the human ovum. William Hunter gave the world information on the anatomy of the pregnant uterus in the same century. This was the real scientific beginning of the understanding of the human body. From this time on, much has been learned but today, we realize how very little we actually knew of the true workings of the human anatomy. Ancient investigators thought the single cell contained the entire individual but we know it requires the male and the female to cause this fusion. The egg leaves the ovaries, enters the tube, then on to the uterus. It is in this four inch tube that the germ becomes fertilized. After the fertilized ovum enters the uterus, it attaches itself to the inner lining of the uterus, and develops into the complex organism we call the unborn child.

The growing ovum is a parasite that feeds upon its host. Its whole existence depends upon its organic connection with the mother's womb. The blood of the mother goes through the uterus and is conveyed to the fetus. As long as this interchange takes place through the maternal and fetal circulation, the life of the fetus is safe and development proceeds.

Beside the fetal life phase there is the physical and mental phase of the unborn child which is important. Since nutrition is the most important function in the world, it is necessary that the mother be properly nourished.

(2) The experiment of Dr. H. H. Donaldson in connection with the University of Pennsylvania, where he had ninety-six generations of white rats under ideal conditions, showed the effects of drugs and nutrition on the animals. The hope to produce a pure breed, disease free strain of animal, thus hoping to find clues of what to expect of the human race if

(2) "Rats", Henry Martin Robinson, author of "Science Versus Crime" in "The Readers Digest" of May 1936. States in many essentials rats are like men.

it were kept free of disease for a few hundred years.

It is not enough for the mother to receive nourishment but that the food be assimilated. This demands a healthy body. To keep physically fit, the mother should be under the care of a good obstetrician from the beginning of her pregnancy, that the physician may give care over the entire period.

The hygiene of pregnancy, the second phase of the care of the unborn child, is a broad term, including exposure to sunshine, fresh air, exercise, proper clothing, diversion and cleanliness. This can only be obtained by the average mother by being under the observation of medical and nursing supervision.

Another phase of prenatal care in regard to the function of the teeth. The fetus' mouth can be detected before the twelfth day. Many malformations may occur which are microscopic but cause caries in later life. Much is to be learned about dental histology and embrology. We are able to make a moving picture of the growth and opening of flowers, but development of a tooth is impossible. It is only during the last half of the nineteenth century that important studies of the tooth have been made, according to Dr. Fredrick Noyes, Professor of Northwestern University Dental College. During the sixth week of fetal life, soon after the jaws have developed, there is a thickening of epithelium near the full margins of the jaws. By the sixteenth week (2)"calcification of the teeth begins and the germs of all the temporary teeth have been completely enclosed in their follicles and the enamel organ for the corresponding permanent teeth have begun their development." "The origin

Footnote: (2) Johanna Eggers. "The Unborn Child". The Oregon Nurse, November 1936, page 9.

and development of the first permanent molars differ from that of all the other permanent teeth in important respects. It is the only permanent tooth where enamel organ springs directly for the dental lining in the same way as those for the temporary teeth. It is the only permanent tooth whose crown is calcified before the individual is thrown upon its own resources for the obtaining of nourishment. Nature to have taken special precaution in the formation of this most important tooth. At first the jaws contain all of the temporary teeth and the first molar, in a practically formed condition, and the follicles for all the permanent teeth except the second and third year molars". Is not this information of Professor Noyes interesting?

Statistics show an increase in our institutions for the insane and feebleminded, therefore, the more normal and healthy a mother is the better offspring she will have. Studies show syphilis to be very prevalent. The medical profession states that if the mother would be treated during the last six or seven months of her pregnancy, the fetus could be protected from this dreadful disease. We know definitely, feeblemindedness is hereditary and that research is being conducted to cope with this situation. With all of these facts relating to prenatal care, it would seem education is the last weapon to develope better men and women.

NEONATAL MORTALITY RATES

The neonatal death rate is still quite stationary according to data obtained on the countries of England and Wales, by Dr. Kerr, Regius Professor of Midwifery, University of Glasglow. Half of the infants who die within the first year die during the first month. The present methods before, during and after birth demand the attention of the obstetrician and pediatrician. While premature and congenital deformities are not preventable, many deaths are preventable.

When the pathogenical lesions found at autopsy are considered, then will the medical profession have a better idea of the causes of neonatal mortality, which are considered prematurity, congenital, debility, marasmus, asphyxia, both injuries and developmental defect. The outstanding causes are infection of the gastrointestinal tract, birth injury and prematurity which run thirty percent each. Improved obstetric technique will include an early examination of the new born baby without undue exposure and good after care should reduce the neonatal mortality rate.

Eight thousand consecutive live births at the Royal Maternity Hospital showed thirty-five cases with fractured bones. Twenty to twenty-five percent of all infants born alive had retinal hemorrhage or injuries to the nervous system. Sixty-six cases had facial paralysis and twenty-eight cases had brachial paralysis. The death rate in breech presentation was thirty percent. Of all birth injuries, those to the nervous system are of the most importance and with those of the skin are the most frequent. Surgery is not used any more for brachial paralysis but the limb is placed on a suitable splint and kept there for a year or such time as is required for recovery.

Injury to the spinal cord is more common than is generally supposed. Difficult and abnormal labor account for many intracranial hemorrhages, which if death does not occur, recover but carry permanent injuries. Good nursing care is of great importance for these cases.

The commonest causes of convulsions in the new born are hemorrhage and disease of the cerebro-spinal system.

Infection may occur in the new born through minor skin injuries and from hands of the attendant and infected clothing. The commonest infection is pemphigus neonatorum.

Pneumonia may be caused by insufflation of the amniotic fluid or from the attendant with a respiratory infection.

It is difficult to diagnose gastrointestinal infection, but, breast feeding is one of the greatest safe guards for the young infant with such a disturbance.

Some immunity is derived from the mother but the new born child is very susceptible to tuberculosis.

Syphilis and ophthalmia neonatorium are both controlled by proper treatment. The infant can be born free from a syphilitic infection provided the mother has received treatment for the necessary length of time prior to delivery. All infants' eyes are treated immediately after birth with silver, which care has practically wiped out the disease.

The premature infant is in danger from before labor to months after birth. This is due to his fragile tissues. Out of one hundred and three cases of intracranial hemorrhage observed at the Royal Maternity Hospital, twenty-four were premature. Even if the child succeeds in living, he often is ill equipped to meet life.

If neonatal deaths are to be lowered more attention must be given the infant before, after and during labor. This will be brought about by having skilled obstetricians and good after care from which both mother and baby will profit. Unavoidable causes of neonatal deaths are being eliminated. The improvement in the death rate lies in better antenatal supervision, careful delivery and a greater knowledge of infant hygiene.

Many private and public agencies, both state and national, have done much work on this subject during the past fifteen years, but have accomplished little. Some good records have been made in small institutions and organizations but nothing for mothers on the whole.

Where mothers are given care, instead of six die out of one thousand live births, twelve instead of thirty-eight are still born out of every thousand births, and only ten instead of thirty-eight babies die under one month out of one thousand births. Dr. Dublin further states, in the last twenty years the infant mortality has been reduced six percent. At present only seven percent die during the first difficult year and this will be cut two-thirds in the near future.

The fetal death rate and the neonatal mortality rate have remained about the same for several decades in Great Britian. It is roughly estimated by these authors that congenital conditions cause some of the neonatal deaths, but that birth injury, infection and prematurity are each responsible for approximately thirty percent of the neonatal births. They estimate the fetal death rate at about one hundred eighty-five per one thousand conceptions.

One cannot take too myopic a view of maternal lives. It is hardly consistent to spare a life temporarily in the face of a pregnancy

complicating a progressive condition which is made definitely worse by permitting the gestation to continue. Nor does it seem reasonable to expose a woman to risks of repeated pregnancies in the face of a serious chronic or recurring disease.

There is evidence pointing to the conclusion that the first pregnancy is the most dangerous for the mother and the infant, the second and third are less hazardous, but that the fourth and subsequent pregnancies seem to become progressively more dangerous.

We know the causes of death and disability. It is impossible to eliminate all maternal fetal and neonatal deaths. We do know enough to prevent so many fatalities. It is not the lack of knowledge but the indifference of the application of knowledge which keeps up the high maternal and fetal morbidity and mortality rates.

Dr. Thomas Parran, Jr., Surgeon General, United States Public Health Service, Washington, D.C., in his article on "Impediments to Maternal Health", in the Public Health Nursing Journal of June 1937, sums up maternal health with four factors, which coincides with conclusions reached by other outstanding authors.

1. The same one-third of our people of the United States whom President Roosevelt says are "poorly housed, poorly clothed, poorly fed," get poor obstetrical care. Several hundred thousand babies delivered by untrained midwives and forty thousand have no attendant.

2. The next greatest factor is ignorance and indifference.

3. The third factor includes interrupted pregnancies through intentional abortion and deaths due to sepsis. One-fourth of the deaths are abortions, the three-fourths due to sepsis. Puerperal septicemia

being the greatest cause of death. These known cases represent only a small portion of the total number. A survey of 10,000 clinic patients in New York City show fifteen percent of pregnancies are criminal abortions during the first five years of marriage; after ten years of marriage the rate runs to forty percent.

4. Syphilis, the fourth big factor, is more easily corrected than all the other three factors. One individual in sixty has syphilis germs in his body. Through proper treatment before the fifth month, the syphilitic mother can give birth to a normal child. Connecticut has passed a law requiring freedom from syphilis before a marriage certificate is issued. There must be not only medical change but a change in the economic system and social concept, before nation wide results can be obtained in maternal and child welfare to any marked degree.

MORBIDTY

(1) It is difficult enough to analyze mortality statistics and secure accurate and comparable results. Statistics of morbidity are much more difficult to evaluate because the condition is poorly defined and there are very few comparable standards for different institutions and various communities. If any one doubts the accuracy of this observation, then let him attempt to secure uniformity of opinion relative to such a simple standard as temperature as an index of febrile morbidity or endeavor to obtain a generally accepted definition of puerperal infection.

In general, maternal morbidity and mortality statistics are undoubtedly more reliable than those pertaining to the fetus and new born infant. It should always be remembered that no study of statistical reports can be more accurate than the original source. We all know how far death certificates fall short of absolute accuracy and, of course, all of our mortality statistics are based on death certificates. Naturally, the more careful study of patients before and after death tends to make the final statistical analysis more accurate. If such data are compared with those from other sources where less care is exercised, the results are not exactly comparable.

Furthermore, there are often more causes than one to which deaths may be attributed. In these cases opinions may differ and rules may vary

Footnote: (1) Fred L. Adair, M.D., Chicago, Illinois. (Chairman and Professor in the department of obstetrics and gynecology. The University of Chicago and the Chicago Lying-in Hospital.)

for the proper assignment of the primary cause. This is particularly true in various countries, not all of which have agreed to follow the same standards and rules. It is for this reason, among others, that there has been so much discussion relative to exact position which the United States occupies with reference to material mortality in the family of nations.

At first thought, maternal and fetal morbidity and mortality would seem to be the sum total of the dire results of uncontrolable causes of the type of obstetric care rendered to individual patients. In a sense, this is true, but on the other hand it must be recognized that there are great social and medical movements taking place and over these, the individual doctor and patient have relatively little control. Among these might be mentioned many changes which have taken place within the last fifty years and even shorter lapse of time.

The increase in hospital beds has been enormous, followed by a tremendous increase in the hospitalization of maternity patients. Changed housing conditions have been a factor in bringing this about. There are now enough maternity beds in this country to accommodate practically all the women having babies. They are not all ideal but they exist, even though the institutions are not properly distributed geographically.

There has been much in favor of hospitalization of maternity cases, from the points of view of both the patient and the physician. In many instances, the institutions were not properly planned and equipped for the adequate care of these patients. The personnel, both nurses and doctors, have too frequently had insufficient education and training in this field, as a rule through no fault of their own.

There has been much popular and medical propaganda for a quick and easy delivery at the expense of a safe one. This has led to the indiscriminate use of numerous analgesic and anesthetic agents and the frequent injudicious resort to operative measures.

For many years past, a greater general interest in health problems and maternal and infant welfare, as well as other matters of vast social importance, have led to more extensive individual and public interest in morbidity and mortality, associated with maternity, that in most countries health is a matter which is considered to be of increasing importance to both the individual and the community. Undoubtedly, on the one hand, the development of greater humanitarian ideal has been an important factor in producing these human interests. On the other hand, social conditions have arisen which have made the conservation of the health and lives of mothers and infants of greater importance to various states.

It is much easier to define mortality and obtain and analyze statistics pertaining to it than it is to define morbidity and secure accurate statistical analyses concerning it. As a rule, the same conditions and factors which in some cases produce morbidity, may in other instances cause mortality. Morbidity may be defined as any condition which departs sufficiently from the normal to produce disability, no matter whether it is immediate or remote, temporary or permanent. Naturally the degree of disability varies enormously, not only in its intensity but also in its duration. Without morbidity there would be no mortality.

The factors producing morbidity may or may not result in mortality. A fatality may occur close on the heels of the morbid condition, for example, in patients with acute hemorrhages, or death may result after a lapse of

days, as for instance, in patients with infection or toxemia. The mortality may be a remote consequence of primary condition and may occur years after the onset of the morbid condition. Such a situation may present itself in vascular or renal diseases which were primarily associated with pregnancy.

Similar conditions exist with reference to the fetus and neonatal infant. Death may occur suddenly from an abnormal condition which causes a very transient morbidity as in cases of abruptio placentae or prolapsus funis. A traumatic morbid state as intracranial injury may lead to rapid death or the fetus may be born alive with more or less permanent damage, leading eventually to a long continued disability and terminating ultimately in death.

A congenital condition may be present at birth and may result in a transient or long continued morbidity and ultimately lead to death of the infant. A fetus may be born alive apparently healthy, harboring a syphilitic infection which may lead to a protracted course of congenital syphilis with ultimate handicapped survival or death. An infection, such as ophthalmia neonatorum, may develope in the new born infant, producing a morbid state from which it may recover completely or suffer partial or total blindness. An infection of umbilicus may manifest itself subsequent to birth. This may be of minor consequence or of sufficient seriousness to cause a fatality.

There have been many improvements in maternity care,and individual physicians and some institutions show very low morbidity and mortality rates. These good results have been counterbalanced by other factors which tend to and actually neutralize the good results obtained in some areas.

It is well known that our negro population maintains a constantly high rate for both fetal and maternal morbidity and mortality. It should be clearly recognized that hospitalization and coesistant operative incidence is unusually high and probably unequalled in any other country in the world.

Both the fetal morbidity and mortality are higher among women of lower parity, which is to say that the risk is greater in the first pregnancies than in subsequent ones. The morbidity may not manifest itself objectively or subjectively during the period when it is primarily acquired. The subsequent course of events reveals the morbid state which may be such as to eventuate in early death or it may be carried along in an infant or child who is handicapped for a shorter or longer period of his life.

The prevention of morbidity and mortality of mothers and infants cannot be absolute. The prophylaxis depends upon adequate care for the fetus and the mother and for the infant from birth onward, which includes preconceptional, antepartum, intrapartum, postpartum, gynecologic, and neonatal and infant care. Such care implies a properly educated laity who will seek and accept such attention and personnel who are not only educated but also trained and experienced in administering it.

It is undoubtedly unnecessary to point out that many individual physicians, nurses, etc., can furnish proper care to their own patients. It is, however, important to stress the fact that in many communities such work is not organized in a manner so that all mothers and babies can receive the requisite care, either in their own homes or in the hospitals. The physicians of various communities can accomplish much

if they lead in organizing the resources of their own communities so that adequate care will be available to all mothers and infants in their own localities.

Statistics from various sources show that certain causes operate more or less uniformly and in about the same percentage and relative frequency in causing morbidity and mortality of mothers and their progeny. Some statistical facts stand out clearly in a recent report of maternal mortality study conducted by the Children's Bureau. There were 7380 maternal deaths analyzed. Over 1550 of these women had not reached the seventh month and one-third had not passed the third month of gestation at the time of death.

Some pertinent facts may be gleaned from this report. Details will not be given here relative to the incidence of various operative procedures, except to note that cesarean section was performed in eleven percent of the women who reached the last trimester, and concerning whom information relative to operative procedure is available. Twenty four percent of all the operations for delivery were cesarean sections. Toxic states were the most frequent indications for operation. The most frequent causes of death in this group were puerperal albuminuria and convulsions septicemia and accidents of labor.

Abortions were defined for this report as previable termination of pregnancy. Seventy three percent of the deaths following abortion were from septicemia and constituted forty five percent of the total deaths from puerperal septicemia. Puerperal septicemia was the most frequent cause of death and it accounted for forty percent of the 7380 deaths. In this series, 1529 women died from sepsis in the last trimester and

of these, ninety-four percent had a spontaneous onset and sixty-five percent a spontaneous termination of labor. In thirty percent of these women, toxemia was the chief or principal contributory cause of death. Twenty-six percent of these deaths were due to puerperal albuminuria and convulsions. Only twelve percent of these women had received good prenatal care and over one-third of them were not seen by a physician prior to death or were already in convulsions or coma when first seen. Hemorrhage caused eleven percent of these deaths. Placenta previa, ablatio placentae, postpartum hemorrhage, and other puerperal hemorrhages are listed. Traumatic conditions, rupture of the uterus, inversion, etc., make up a small percentage of the total fatalities considered in this study.

There was no special study of fetal and neonatal deaths in connection with this analysis, but incidental data reveal that only forty-three percent of these women gave birth to living children, eight percent died undelivered, twenty-nine percent gave birth to non-viable fetuses and twenty percent were delivered of still born infants.

Munro Kerr has recently published a treatise dealing with maternal mortality and morbidity and problems confronting medical practioners in Great Britian. He recognizes, as do others in various countries, that the maternal mortality rate has remained stationery for years, and that the same etiologic factors continue year after year without material alteration, in spite of the fact that rates from other causes of mortality have been reduced. It is also believed, the main reason for this failure to reduce mortality is not the lack of knowledge of measures to prevent these deaths, but neglect of application of known facts. This is evidenced by the observations that mortality is reduced

materially where these well known principles are practiced.

Statistics have been compiled for decennial periods, 1855 to 1930, for England, Wales, and Scotland. The maternal mortality rates for puerperal fever and other puerperal causes show no decrease in the last seventy-five years. It is interesting to note that the causes of mortality have the same order of incidence as was found in our country, that is, puerperal sepsis, eclampsia, hemorrhage, and other diseases, and accidents of child birth.

The percentage of frequency is not markedly different for the two countries as Kerr gives approximately the following proportions for the causes just mentioned: Sepsis, 38%; toxemias, 18%; and hemorrhages, 12 to 15%.

The outstanding causes of mortality are those mentioned above. Hemorrhage is not a great factor in the causation of the resultant disability, the major causes of which toxemia, infection and trauma.

It is a curious fact that obstetric mortality has remained fairly constant, not only for mothers but also for fetuses and neonatal infants. This is all the more striking when one realizes that other causes of death in women of the child-bearing period have been markedly reduced, and that the later infant mortality rate is much less than it was thirty years ago.

HOW THESE PROBLEMS CAN BE SOLVED

MEDICAL ASPECT

The medical profession and the public must know the facts and then definite action should be taken to meet the situation. The following four statements would go far toward meeting and solving the high maternity death rate.

(1)a. Improved "Certificates for reporting births, still births, infant and maternal deaths, their records should satisfy medical, legal, social and statistical requirements."

b. It is not enough to know a maternity case dies. We should know "the period of gestation, operative procedure, place of confinement, name of attendant at time of birth; this would make accurate maternal and fetal mortality rates for the hospital and the home delivery".

c. "Better classification of maternal fetal and early infant deaths" would lead to a more effective program of prevention.

d. "Every child's birth should be recorded because he has a right to go to school, his legal right to go to work, his right to marry, his right to hold office, his right to secure passports for foreign travel. The child's birth should be reported by someone. It is then reported to the state.

(2) Since puerperal infection still remains directly or indirectly the most conspicuous single cause of death following childbirth, every effort should be expended toward its prevention.

Footnote: (1) Henry L. Woodward, M.D., "Obstetric Management and Nursing", page 29.

Footnote: (2) The Journal of the American Medical Association. Maternal and Morbidity, Canadian Chairman's Address. John R. Fraser, M.D., Montreal, November 9, 1935, Page 1486.

Pathogenic organisms, chiefly of streptococcus family, must be prevented from reaching the birth canal, irrespective of whether it is from the nose and throat.of attendants, the patient herself, her husband, or other patients. Endogenous infection must be cleared up.

The use of masks, properly constructed and applied, must be adopted by all those in close contact with women in labor. No person with respiratory or other infection should be in attendance and the known carriers of streptococci should be constantly supervised. The day is not far distant when for these reasons certain people will not be able to undertake maternity work.

In hospital practice, patients exhibiting any signs of infection must be promptly segregated and at the time of seasonal infections the utmost care should be exercised in segregation of all suspects.

The adoption in obstetrics of many of the principles that have been so successfully applied in surgery, for example, the most careful examination of the prospective mother with a view to establishing her ability to stand the strain of labor will do much toward lowering the mortality rates. Again, more attention must be directed to the mechanical problem in hand, for after all the simple fact remains that a normal pregnancy, the presenting part, should be in the pelvis in the last month.

The impression is gaining ground that more care is necessary in the education of students and physicians in the supervision of pregnancy, in combating the rising incidence of operative obstetrics, such as forceps delivery and cesarean section, and in the building up of a more efficient maternity service.

The provision of antepartum clinics in itself admirable, but cannot in any way be construed as a measure of prevention that will be an infallible guide. It is very necessary that those in charge should have a lively sense of what constitutes a healthy prognosis.

This bespeaks the close correlation of all agencies engaged in this work. Teamwork in obstetrics must prevail.

The present trend in the care of maternity and infant cases is to so simplify information that it can be grasped by the general public. This seems to be the concensus of opinion of those writers on maternity obstetrical service.

Clinical and research work have made many changes in attitudes and procedures in maternity care although maternity nursing care remains the same. Nurses as well as doctors realize the great trend of better obstetrical service for rural and urban areas. Van Blarcolm gives the essentials of obstetrical nursing applicable to any nursing service regardless of the training of the individual nurse. Too often the nurse is overwhelmed by the routine of her duties and fails to grasp the significance of the event in which she plays such an important part. This being overcome by the well rounded maternity program, which includes nutrition, mental hygiene, social service, given in the better schools.

Four principles needed in successful nursing work are cleanliness, watchfulness, adaptibility, and understanding. This requires that the nurse be clear headed and keeps and open mind. In accomplishing her work she should have imagination. It is the nurse, with sympathy as an individual, who after all aids the mother in meeting her situation. The mother in her pregnancy meets this situation mentally and physically alone.

Prenatal care, clean deliveries and intelligent motherhood are the three requirements to reduce maternal and infant death rate. Obstetrical care today stresses the future health of the mother and the baby, as well as their immediate safety. The death rate is high in spite of the good care given. The reason for this perhaps, is such a common event that it is considered a perfectly normal incident of life. We are accustomed to hearing that child bearing is not a disease but a normal function. This is not true since great stress is placed on the mother at this time, which may result in disease. Too much is taken for granted. Only when assistance will be given throughout the entire period under good medical and nursing care, will the death rate be reduced.

It behooves both professions to bear in mind there are many ways of doing well, many things.

Louise Zabriskie in her "Nurses Handbook of Obstetrics", gives the anatomic and physiologic facts and approved routine principle and practices of the art of nursing in relation to obstetrics, both in hospitals and homes.

This is necessary due to the exacting requirements of the changing nursing school curriculum. This starts with the beginning of pregnancy and goes well into the life of the baby.

The preventive side of nursing care is of importance. The outstanding aspect is psychological contribution she can give to the mother since her relations are so close and continued.

The principles of maternity service, therefore, would include knowledge of the anatomy and the physiology of obstetrics, as well as the fetal development of the mother in order to talk with her on the detailed information of prenatal care, of labor, of postpartum care and concerning the many aspects of the new baby.

NURSING ASPECT

Louise Zabriskie in "Nurses Handbook of Obstetrics, 1934", states that in over three million square miles in the United States there are many communities which have no roads and exceedingly poor homes. Some of these localities do not have doctors. Eighteen hundred counties, at this writing of the book, had no public health nurse.

There are 2,500,000 pregnant mothers throughout the United States representing many nationalities who are accustomed to the climate they are living in, dependent on any one but a good doctor to advise and give them needed care before, during and following pregnancy.

Henry L. Woodward, co-authors in"Obstetrics Management and Nursing", published in 1936, feel the woman in labor thinks more of the nurse whether kind or unkind to her than anyone else at this time. Often obstetrical nursing is looked on as demanding too much time of the nurses time and energy. The nurse should remember there is no one who can truly take her place to show the real meaning of the word "Obstetrics" and be ready to be of service at the time of delivery. She should appreciate this privilege and duty given her.

"Obstetrical nursing may be defined with accuracy as the nursing care of an obstetrical patient but its time significance is limited only by the nurses ability, resourcefulness and vision. The more spirituality which prevades this work, the more effective will be the nurse's skilled ministration and the more satisfying will it all be to her."

Nursing had improved by 1900, both in the home and hospital, yet with

the excellent care given, there was no standardization.

The private duty nurse and the office nurse, the teacher nurse and the public health nurse, each in her own field, aids the pregnant mother. The private nurse usually sees her maternity patient once or twice before delivery. The doctor has given all instructions to his patient and as a rule the nurse finds little difference in her work from her hospital routine.

The office nurse may be serving in the capacity of a nurse and secretary. She has as a rule more adjustments to make to fit in with the rest of the office force. It is the nurse who accepts the mother and usually aids in making her feel comfortable and at ease and goes into detail on the doctor's instructions.

The teacher nurse who conducts mothers' craft classes or conferences, spends her time under the private doctors' supervision conducting classes and demonstrations for the pregnant mother.

The Public Health Nurse conducts the classes and demonstrations for pregnant mothers, where economy must be shown in both mothers and baby clothes, as well as the whole maternity care, since those attending these classes are either charity cases or people on low incomes where they can pay but a small fee. She aids unmarried mothers and deserted mothers who find great relief in talking over their personal problems. The public health nurse more than any of the nurses must be able to meet various situations, know community resources and have the ability to carry out the doctor's instructions. This nurse suits the needy family and teaches some one within the family to give the needed care. She continues her supervision until all needs are met or the family is turned over to the agency which

will continue with their care. Very few agencies give bedside nursing service to maternity in labors. There is a continuous educational program in connection with every agency which includes maternity work.

The records which are kept should give a complete picture of all work in each case, that the worker following may easily take up the family problems with no difficulty.

The nursing agencies, whether official or voluntary, limit as a rule their maternity care to prenatal clinics, classes and visits. One reason bedside care is not given is due to the large districts each nurse has to cover. The nurses' work is varried and includes any phase of community health. City and county health departments conduct like programs.

The present trend in the care of maternity and infant cases is to so simplify information that it can be grasped by the general public. This seems the consensus of opinion of those writers on obstetrical service.

Clinical and research work have made many changes in attitudes and procedure in maternity care although maternity nursing care remains the same. Nurses, as well as doctors, realize the great need of obstetrical service for rural and urban areas. Van Blarcom gives the essentials of obstetrical nursing applicable to any nursing service regardless of the training of the individual nurse. Too often the nurse is overwhelmed by the routine of her duties and fails to grasp the significance of the event in which she plays such an important part. This is being overcome by the well rounded maternity nutrition, mental hygiene and social service given in the better schools.

The public health nurse more than ever today realizes she occupies the strategic position to aid the ignorant pregnant mother whether her

ignorance arises from timidity or from overseeming confidence.

"It is not preposterous", says Hebert Spencer, "that the fate of a new generation should be left to the chance of unreasoning custom, impulse fancy joined with the suggestions of ignorant nurses and the prejudiced counsel of grandmothers. To tens of thousands that are killed, add hundreds of thousands that survive with feeble constitutions and millions that grow up with constitutions as they should be and you have some idea of the curse inflicted on their offspring by parents ignorant of the laws of life".

It is the nurse rather than the doctor, with her watchfullness, adaptability, understanding, sympathy and open mindedness who does more in aiding the mother in understanding the many problems. She is ignorant concerning her condition and through the weeks that follow, teaches the endless detail in the care of the new born baby, which makes for an everlasting attachment for both baby and mother.

(1) Anne A. Stevens, R.N., states the solution of the complex problems of maternal morbidity and mortality will be found in an all round tightening up as well as strengthening of each link in the chain of obstetric supervision, and increased watchfullness over all states of pregnancy and labor rather than any single or comprehensive remedy. What is being done for some women can and should be done for all.

About the beginning of this century a new light began to shine upon the problems of the maternity patient and little by little the light has grown brighter and very gradually more and more doctors and patients have come to follow the gleam.

As early as January 1901, the Instructive District Nursing Association of Boston, began an affiliation with the South End Branch of the Boston Lying-in Hospital.

In early reports it is recorded that the obstetric nurse received from the hospital the "list of the cases to be visited of those who have already been confined and of those who are going to be".

(2) In 1901 the nurse visited 174 prenatal patients and taught them to get ready for delivery, to make their layettes, and to prepare other necessary articles. "In abnormal or threatening acute cases the nurse takes the temperature and reports all symptoms to the doctor in charge".

In 1902 with a second obstetric nurse added to the staff, the first

Footnote: (1) Interim Report of the Committee on Maternal Mortality and Morbidity of the Ministry of Health in Great Britian.
Footnote: (2) "Obstetrical Nursing", Van Blarcom, Part VI, Pages 441-462.

maternity work was done for private doctors and included one prenatal patient and thirty-seven postpartum patients. From then on this work has increased.

In July 1907, the Association for Improving the condition of the poor in New York City, a social work agency that became interested in health work because of the relation between poverty and illness, employed two "teacher-nurses" to visit the pregnant women in the families under its care. This work was undertaken in connection with a "Rest House" for mothers, which was opened in March 1907. A report the next year contains this statement, "Teaching mothers before confinement reduces the infant death rate. In 202 cases visited before and after confinement, there were nine infant deaths, 4.9%. In 135 cases visited after confinement only, there were 22 infant deaths, 17%. What would happen to the infant death rate if all mothers were taught and cared for before confinement, as well as after."

In 1909, the Woman's Municipal League of Boston, under the guidance of Mrs. William Lowell Putnam, supplied to the Boston Lying-in Hospital, "a trained nurse" for social service among the hospital's patients. Cases referred to this have been visited during pregnancy and instructed in the lessons of personal cleanliness and hygiene. Cases requiring medical advice have been referred to the hospital and some of these cases have been admitted for observation and treatment. Serious complications of labor have thus been prevented. "From the annual report of the Boston Lying-in Hospital for 1909.

Beginning in January 1917, the Metropolitan Life Insurance Company, which offered visiting nurse service to holders of industrial policies, contracted to pay visiting nurse associations for two prenatal visits to maternity patients having these policies. This was a real stimulus to the spread

of prenatal nursing. The number of visits has since been increased and the example of this insurance followed by others. Dr. Louis I. Dublin, the Statistician of the Metropolitan Life Insurance Company, has made many studies of maternity records and is therefore the authority most often quoted in support of the life saving value of prenatal and other maternity care.

In 1917, stimulated by the late Dr. Ralph W. Lobenstine, the Women's City Club of New York, under the guidance of Mrs. Irene Osgood Andrews and Miss Annie W. Goodrich, established the first maternity center in this country. Through the center it was planned to secure medical supervision and nursing care for every woman in the district, served from the beginning of pregnancy until her baby was one month old by co-ordinating the maternity work of every hospital, private physician, midwife and nursing agency in the community and by stimulating the development of additional facilities as a need was indicated.

A register was kept of the patients being cared for and of those in need of care. A nurse employed by the Center did the home visiting and teaching for these latter patients. Every effort was made to help them arrange for immediate care. A clinic was opened at the Center where patients under no other medical care might be examined by an obstetrician and supervised until they could register with a doctor or hospital for care at delivery. Patients to be delivered by midwives too, were here given medical supervision.

Classes were developed for the mothers and a teaching exhibit of baby clothes and mother's supplies was displayed at the Center. One of the nurses had office hours every afternoon and the patients learned to visit

the center freely. To give mothers needed rest, a working housekeeper service was established with a special fund and used with the greatest satisfaction. A list of women known to be good clean housekeepers and willing to do several hours work a day was kept at the Center. When need arose, one of the women was sent to the patient's home, paid for out of the fund and the patient paid the Center such proportion of the cost as she could.

"Every woman in the district was never reached but the work of the various agencies was coordinated and the amount of service thereby increased. Each nurse learned all that any of the other nurses knew as the records, routines and printed "Advice for Mothers" were developed in the nursing conferences. Excellent working relations were established with the hospitals, the doctors and the midwives in the district.

In connection with the opening of the Center of the Nurse Service of Henry Street Settlement, a twenty-four hour delivery nursing service and a month's supervised experience were given to the students at the Manhattan Maternity Hospital. This was the first complete maternity nursing service in the city, including prenatal, delivery and postpartum nursing that served private physicians as well as the out door service of the hospital.

Finally the maternity center of the Women's City Club became a part of the Maternity Association, a voluntary organization formed to establish centers throughout Manhattan.

These different ways of beginning this work encourage one to believe that a need, once it is recognized, can be met, if not in one way, then in another.

The real impetus came to rural maternity work in 1921 with the passage by Congress of the Maternity and Infancy Act. This Act administered by the

Federal Children's Bureau, stimulated the formation of bureaus of child hygiene in the state departments of health and made funds available for maternity and infant hygiene work, the plans for which were approved by the Federal Board created in the act.

There was no school for training midwives until 1911 when the Bellevue School for midwives was established in New York City, through the combined efforts of the Board of Trustees of the Hospital and Sub-Committee of the New York Committee for the Prevention of Blindness, consisting of Miss Lillian D. Wald, Miss Carolyn C. Van Blarcom and Dr. J. Clifton Edgar.

There are still many thousands of midwives in the country, estimated to be caring for from 10 to 15 percent of the births each year.

In 1925 a new type of midwife, a nurse who has studied midwifery in England, was introduced into this country by Mrs. Mary Breckinridge, as one practicable way to provide more adequate care for mothers in isolated regions. She established, in consultation with the State Department of Health of Kentucky, the Frontier Nursing Service in the mountain region of that state. The only attendants the mothers of that region had had up to this time were the "granny-women" whose only qualification for midwifery seemed to be that they were too old to work but could still "catch" babies.

The midwives combine general public health nursing with midwifery and add to maternity care the nursing of the sick and injured, the prevention of communicable disease by immunization and the promotion of the health of the family by teaching personal and home hygiene, nutrition, sanitation, and the like. The work, supported by voluntary contributions, has grown to include a hospital with a resident physician, several centers where the nurse midwives live and hold clinics and classes, periodic clinics by

visiting doctors and dentists and is in reality a community health service of no small proportions.

One of the many obstacles to be overcome was the costly necessity for sending the nurses to England for the training in midwifery. Another was the poverty and inaccessibility of the patients. The long rides on horseback over steep mountain trails and through rocky creek beds, sometimes flooded with "tides", to reach the isolated cabins where they live make it all but impossible to get doctors when abnormalities develop. In the fact of these difficulties the first one thousand patients were delivered with no deaths. from puerperal causes,there was a reduction of one-third in the usual still birth and neonatal mortality rates.

In 1932 in New York City, the Association for the promotion and standardization of midwifery, fostered by the late Dr. Ralph Waldo Lobenstine, opened at the Lobenstine Midwifery Clinic a memorial to him, the first school in this country to train public nurses in midwifery. The graduates will be available as nurse-midwives to supervise and teach midwives under the direction of departments of health, to practice midwifery under medical supervision in the out-of-the-way localities, such as those served by the Holman Association or the Frontier Nursing Service, or to act as assistants to physicians practicing obstetrics.

These developments indicate a trend toward a much needed improvement in the midwifery situation in this country.

While maternity work has been done satisfactorily from time to time under various organizations, both official and non-official, in Europe as well as in the United States, it seems that the trend at present is toward establishing work according to the standards of Maternity Center in New York City. The supervision of this work is being taken care of by the local county set-up and financed by the federal, state and county.

In 1918 Dr. Harem Emerson, who was Health Commissioner of New York City, with others established "Maternity Center", New York City, which is today the outstanding maternity center. Because of the high death rate of mothers and babies, they decided to do something about it. The board was composed of obstetricians and pediatricians who called together women's clubs for the purpose of sponsoring and financing this work. The aim was to give medical and nursing care, also instruction, to the mother, beginning with her prenatal period, delivery and instruction following delivery. Well trained obstetrical nurses were put in charge of this Center. These nurses gave the prenatal visits and helped at the clinic while the nurses at Henry Street Settlement did the follow-up care. This was not satisfactory and in 1922, the association took over a definite district where they gave all the service. This district contained 200,000 people, representing twenty-seven nationalities, which made it large enough for study. The aim now was to so educate the public and tax payer that they would realize, while child bearing was a natural condition it was necessary to have the services of the medical and nursing profession through the entire period of the pregnant mother to save her from the suffering the women had had in the past which was all too unnecessary.

The aim was to give this complete care to the pregnant mother and

develop such a technique that it might be in turn given to nurses and medical students who in turn would be able to teach in their communities. Maternity Center is now in connection with the New York Lying-in Hospital and is the first unit of the East Side Medical Center. Cornell University Medical School is the educational center while Bellevue, Manhattan Maternity, Old New York Lying-in Hospitals and Cornell Clinics are laboratories.

MATERNAL AND CHILD WELFARE PROGRAM

The Social Security Act approved August 14, 1935 by President Roosevelt, represents the results of the National Committee in formulating a plan which can be used in the attainment of economic security for the individual and family.

(1) "The Social Security Act" is to provide for the general welfare by establishing a system of Federal Old Age Benefits and by enabling the several states to make more adequate provision for aged persons, blind persons, dependent and crippled children, maternal and child welfare, public health, and the administration of their unemployment compensation laws; to establish a Social Security Board, to raise revenue; and for other purposes."

Title IV Grants to states for aid to dependent children.

Title V Grants to states for maternal and child welfare.

a. Maternal and Child Health Service.

b. Services for Crippled Children.

c. Child Welfare.

Title VI Public Health.

These titles are the ones the medical and nursing profession are and will be interested in, in developing a rounded program with particular stress on maternity. These grants from the government with the monies of the states and counties will be used in developing a rounded program to meet the need of every community. This is the task of the well trained public health physician who as leader will be in charge of the various units and staff of public health nurses to carry out the detailed work.

Footnote:(1) The Social Security Board, Washington Informational Service Circular No.I, Page 1, April 1936.

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