WHAT PRICE POSTERITY

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This paper was written to present a few of the ourstanding facts found most predominate in our Infant and Maternal Mortality.

To visualize what these statistics mean to us, as a nation, can not but stimulate thought and action ---- the end results from which we may work as individuals to improve, by public influence, the present death rate and make our country and safer and saner place for mothers and babies.

MATERNAL MORTALITY

It is evident that there has been a decline in infant and maternal mortality during the past twenty five years, but it is also an undubitable certainty that there is much more to be done through out the world in measures to control the present death rate. We rely on statistics for a measuring gauge in our comparisons, however, it must be born in mind that there are decided factors influencing the accuracy of statistics and one of the greatest as applied to infant and maternal mortality is that the cause of deaths associated with pregnancy and childbirth vary in different countries. This compiling of vital statistics makes the results not strictly comparable, as for instance in England or Scotland, if the death certificate mentions both nephritis and childbirth, this death is tabulated as due to nephritis. Statisticians in the United States would record that death under childbirth. In this way many foreign countries assign deaths to pneumonia, heart disease, influenza or septicemia that we would classify under maternal mortality.

The variety of interpretations as to what constitutes a live birth presents another difficulty in making comparisons. Some European countries do not consider the child who dies before his birth is registered a live birth. In the United States, a child is considered a live birth if he draws but one breath.

In a recent survey made by the Bureau of Census, to refine and make comparable the maternal mortality statistics of different countries, some four hundred and seventy seven certificates were

sent to twenty four foreign countries. The information of these certificates was set up in list form with each line representing one death. It consisted of the case number, age of mother, primary and contributory cause of death and performance or nonperformance of an operation and of a necrossy. The first column was to be checked if the case was classed as puerperal and the second if nonpuerperal. A reclassification of the records for the United States on the same basis of assignment of cause as that made in each of the foreign countries was made and the United States rate exceeded the official rates of five countries, Norway, Sweden, France and Netherlands, by at least 100%.

Since we base our infant mortality rate on the number of deaths per one thousand live births, these studies must be remembered.

To realize that sixteen thousand mothers or seven mothers for every one thousand live births, die each year in the United Stated from childbirth seems incredible. Tuberculosis alone exceeds this rate and when we observe how the public health program has reduced this along with Diptheria, Scarlet Fever and other diseases of a high mortality, in the twenty five years to over half, we may justly feel a qualm of conscience.

Until the beginning of the seventeenth century, it was the popular belief that the fetus, much as a chick, made its exit from the uterus by its own effort. The attendants, in this period, believed that with the use of abnoxious and foul smelling drugs the child could be "smoked out". This was a common practice, accompanied by many religious and other spiritual ceremonies, subjecting the mother to added pain and discomfort.

William Harvey is credited with being the first to observe and perceive the contracting muscles in the uterus in the voluntary expulsion at birth. We find our first reference to artificial rupture of the membranes was revealed by Dr. Kelly in 1756. He was assisted by his colleague William Hunter and the operation successfully performed using a porcupine needle.

In 1827, ergot was introduced as a means of inducing labor, but this was abandoned due to the harm done on the fetus. In 1855, Krause, used what is known as bougie, a flexible catheter extrovularly inserted into the uterus and left for a few hours. This produced labor by the presence of a foreign object in the uterus and caused the fetus to be expelled.

In 1843 Oliver Wendell Holmes, published his famous treatsie on puerperal fever, while at this same time, Dr. Ignaz Semmelweis, worked through adverse conditions to impress in the minds of his fellow physicians the importance of cleanliness and aseptic technique in childbirth. In the Vienna General Hospital, childbed fever dropped from 9.9 to 3.8 per cent in over one year after Semmelweis inaugrated his antiseptic methods. It was not until 1909 that pitutrin, now widely known and used by obstraticians was discovered. It is to these men and their contemporaries that we pay credit as with the beginning of the advanced theories in childbirth.

Doctor Richard A. Bolt made a study of sixteen thousand confinement cases in the city of Cleveland, Ohio,* and found that one third of all the cases resulting in death, followed abortion either criminal, therapeutic or self-induced. In these cases he

found that 151 deaths followe abortion, that in addition to the live births there were 592 still births and of the babies born alive 596 died under two weeks and 529 under one month. The death rate was 7.2 deaths of mothers for every one thousand live births.

Because the induced abortion is considered immoral and criminal, it is practiced by some physicians whose code of ethics and legal practice have fallen below the physicians standard of living, therefore, he resorts to this means of earning a livlihood. In the United States, it is impossible except through education and cooperation of conscionious physicians to do a great deal toward the prevention of the deaths caused by abortion. However, it has been found that most cases of septicemia caused by this were among married women.

Accurate ststistics on these deaths throught our country are impossible, because the cases, if they recover are not reported as such, and often if they result in a death, are reported by the physician as a blood stream infection. The patients family or relatives do not wish it made known that an abortion has been preformed and so no record is made. Such cases happen much more frequently than we are aware.

In 1927 and 1928 facts revealed that about twenty five percent of maternal puerperal deaths followed abortion; illegal, and septicemia, constituted 91 percent of the cases. 50 percent were criminally induced, 37 percent spontaneous and 13 percent therapeutic. These figures cannot be classed as statistics, they were merely facts, gathered from the small number of cases reported through out the United States.

How can we reduce montality from abortion? Let us perceive what other foreign countries have done. Russia in 1925 had approximately 89,000 abortions which within the next two years mounted to 150,000 and 242,000, all legally and expertly performed. There were no deaths from septicemia. France, Germany, Italy and England have not reached Russia's program but are far a advanced as compared with the United States. What has been done in Russia could not be done in the United States over night. It would take a generation in education toward the values of eugenics, and disease control, this in turn would be made more difficult due to the mixture of nationalities found in this country and to the territorial expansion.

To think of abortion as the only cause of septicemia in erroneous, this appears only as the leading cause in our country. Following this, we find the next cause classed under other accidents of pregnancy, these include hurried cesarean sections, and intervention of labor by the use of forceps. The unskilled midwife is listed under these, but she is not known in this country as in England, Whales, Scandanevia and other countries. In the United States, we find midwives in the southern states especially among the negro population and in the Kentucky mountain region, where physicians are scarce. The later are a well organized and highly skilled nursing group, who have been trained as midwives, and render a noble service to families who are hemmed away in a mountaneous region where distance is great, travel tedious and lack of education a great handicap.

The old negro midwife is our greatest problem. She has existed as a religion with her people. The recent years have seen a definite advancement in the education of the negro, and also the midwive, nevertheless, the maternal mortality among colored women is nearly twice that of the white woman.

A combination of indications preceeding ceasrean sections are found most frequently. These include eclampsia, contracted pelvis, pre-eclamptic toxemia, placenta previa and women who have had a previous cesarean section. The greatest risk with these operations occurs when the patient is under the care of an incompetent physician. If labor is allowed to progress to the dilitation of the cervix before the physician realizes that the birth canal will not permit a normal delivery, the risk of the mother's life is greatly enhanced by a cesarean. This would never happen had the patient received early pre-natal care and periodic examinations.

That per-natal care is essential to the lowering of maternal mortality, is beyond any doubt. European countries have proven this. Here child hygiene and maternal care are considered definitely part of the public health program and it is intergated with every other health function in the community. At present England has 1,300 pre-natal centers and 5,000 health visitors and district nurses. The work is done through some form of social insurance, thus making these clinics available to everyone, especially to those whose economic status makes a private physician impossible

In France, home care and public health nursing has been a most recent development in pre-natal work. They have much the same

program as England in comparison to clinics and institutional care.

Germany has placed her whole maternity program on a scientific basis and investigatings due to two important influences collaborated with the determination of fetal maturity in effecting the improvements recorded. In deliveries the general use of pentobarbitol and scopolamine analgesia has caused much interesting discussion and has been very successfully used unter careful supervision in Germany.

Italy, in 1925 created "The National Institution for the protection of Motherhood and Infance". Under this act, provissions are made for complete pre-natal care as well as confinement and infant care.

Adequate pre-natal care means consulting a physician every month during pregnancy, here the blood pressure, urine, weight, diet and exercise are checked and the prospective mother evades at least 60 percent of the dangers of pregnancy and childbirth.

Toxemia and eclampsia are very important in relation to maternal mortality. These complications require early and careful supervision during pregnancy. Provisions for premature deliveries and cesarean operations can be made at an early stage of intro-uterin development when periodic examinations are made by a physician.

From a psychological as well as a physiological point of view, early care in pregnancy is valuable, as much anxiety, false superstitions and fears of childbirth are eleminated for the patient making her mental attitude over this period as cheerful and hopeful as possible.

John Burns in the England conference of Infant Mortality said "Give us good motherhood and good pre-natal conditions and I have no dispair for the future of this or any other country. I believe that what the pre-natal condition of the mother is so her offspring will be. The stream is no purer than its source. Let us glorify, dignify, and purify motherhood by every means in our power". This is the attitude we must instill into the minds of the public, because only through them can a successful appreciation of pre-natal work and care be attained.

Lastly, we shall consider disease as a cause of maternal mortality. The common diseases are ; syphilis, tuberculosis, cancer, anomalies of kidneys, heart conditions, disturbances of certain endocrine glands, blood and dental conditions, and anemia.

Syphilis appears in 10 percent of pregnancies in the United States. This does not include the negro population, where it runs much more prevelent. However, early and proper treatment prevents the infant from having the disease, and makes labor safe for the mother.

Tuberculosis requires sanitorium treatment but this is far from satisfactory in the United States. Too many cases remain undiagnosed. Here again pre-natal care means checking of the disease. Heart disease as Tuberculosis and Syphilis, requires an early diagnosis and treatment.

Cancer is rarely found, but Anemia , is very prevelent in the more advanced stages of pregnancy. 47 to 65 percent of pregnant women tend to develope secondary anemia. This percent includes the high percentage of anemic patients found in the late

winter months. If this group were omitted the per cent would drop to 43. Some cases recover sponantenously after delivery, without treatment, but it has been found that treatment makes this recovery more speedy. The untreated cases cause premature deliveries, a greater number of toxemia cases, higher fetal mortality and longer labor.

Maternal mortality, has been expressed as "A dank shadow on our national healthe record". It is truly this. Much is being done today for which we as a nation are grateful. But the establishing of free clinics made accessible for rural, as well as city population, is a drastic need of our present condition. The public must be taught to use the facilities it has at present.

We have wiped out distance by our present means of transportation and communication, but we still find these distances a hinderance to the health of our small communities, especially our mothers.

A comparison of our maternal deaths with other countries incites us to arms. It is definitely a challenge to the individual as its results strikes the most vital and binding force in our lives, namely, our homes.

Tenneyson has most logically expressed this feeling in these words.

"The Woman's cause is Man's. They rise or sink
Together. Dwarf'd or Godlike -- bond or free:
If she be small, slight statured, miserable
How shall men grow?"

INFANT MORTALITY

The mortality rate of infants is an especially sensitive index in our present social and economic structure. As a nation, we are concerned with our future and this future rests in the well being of the infant of our generation.

Infant mortality is its highest at birth, from there it takes a steep downward curve until the ages of twelve or thirteen years, from then a steady increase is made with increasing age. Does it not seem appalling that not until advanced old age does the mortality rate equal that of the first year of life?

The Bureau of Census states that there were, in 1933 2,064,944 births, 120,199 deaths of infants under one year of age and 76,837 stillbirths. This gives us a birth rate of 16.4 per one thousand population, a mortality rate of 58.2 per one thousand live births and a stillbirth of 3.7 per one hundred live births. Of these deaths 120,000 died during the first year of life and 73,000 died during the first month. The deaths under one year constitute 9 per cent of the total deaths in the Unites States and those under one month 5 per cent.

The states having excessively high mortality rates were New Mexico with 134.2 and Arizona 111.4. Both thses states have a large Mexican and Indian population and their knowledge of infant care is meager. South Caroline has the next highest rate, and here we nave the problem of Negro population. We refer with pride to the states reporting the lowest

mortality rate, namely Oregon and Washington which appeared 38.9 and 39. 3 respectively.

The infant death rates for some of the foreign countries appear as follows: Sweden, 50 per cent, Australia, 40 per cent Netherlands, 44 per cent New Zealand 31 per cent and Switzerland, 48 per cent. From a comparison of these figures with our rate of 58 per cent, it appears that our biggest task is to reduce the mortality in the first month of life.

Heredity, environment and economic status are the predominate factors influencing our infant mortality. Every problem that infant life presents falls under one of these divisions.

By heredity, we shall consider all the conditions which have been present, before and up to the time of birth. What influence they may have upon the life expectation of any particular baby has been exerted and nothing we can do after birth will change it.

It is a well known fact that family strains show that vigor and vitality pass from one generation to another. Thus a child born of a family whose history shows longlivity stands a better chance of living over the first month and year of life. He also has a greater resistance to communicable diseases, which are the dangers in the second year of life.

Stigmation of disease, such as syphilis, may be transmitted from one generation to another. In some communities it is responsible for as high as 26 per cent of the fetal deaths, and we know that it is definitely the cause of many deformaties that are present at birth. The prevelance of this disease varies

with the country and community into which the child is born. We now have effective measures of control in treatment. If the mother is given treatment early in pregnancy and it is continued thoughout the nine months, the chances are better than even that the infant will escape infection.

The economic status into which a baby comes includes all the social and community conditions which bear some relation to his chances of life. Poverty includes; overcrowding, ignorance and neglect. Neglect in its results ~~of~~ is harmful upon the infant, whether it is dependent upon willfulness or upon unavoidable lack of provisions.

One of the frequent results of poverty is the results that the mother must work away from the home in order to supplement the family income. This is not always unfavorable for the infant as often the duties of housework and its manuel labor are harder than light industrial work.

In Russia, where employment of every able bodied person is required, provisions for the pregnant woman are generous. Their code recognizes the importance of building a strong and vigorous nation. Allowance is make for the woman working in a factory who is engaged in physical labor to be released from all work eight weeks before and eight weeks after confinement. If labor is mental the time allowed is six weeks before and six weeks after. Also that the woman cannot be discharged during pregnancy or motherhood leave, is specefically stated.

Economically she is made independent by being insures in The State Social Insurance Organization which is carried out

by: First, giving help in pregngncy and delivery. Second, free medical care and Third, care for infants feeding and for nursing him during illness. The nursing mother, in addition to usual intervals of rest during work is entitled to no less than half an hour every three and one half hours of work. The nursing child is kept at the place of employment in a nursery school where only graduate nurses and expert medical care are maintained.

To contrast, we find in our country, a young mother with several children, living in a rural area and doing work far beyond her physical capacity. Or in a crowded city district, going to work at an early morning hour leaving her baby to be fed and cared for by a young high school girl or an elderly woman, both of which are incapable of caring for a baby, due to their lack of intelligence, interest and tendency to neglect.

The fact that babies whose mothers are able and willing to exercise intelligent supervision, do well in spite of most unfavorable conditions, while those who are deprived of intelligent care do badly, no matter how favorable the other factors may be, certifies the fact that intelligence in caring for infants is necessary.

In the United States, there are 176.1 mothers for every one thousand, employed away from home; 114.6 employed in a home and 98 employed in their own home. These figures prove the necessity of nursery schools where, for a small charge young children can be properly cared for if the family's economic status necessitates the mother working out of the home.

The solution for the rural mother is not so easily found. Distance and the nature of her work make it impossible for her to take her children to a nursery school. They must be kept at home. Therefore, outside help is her only salvation, and this, because of finances is rarely possible. The problem rests with the community, state and nation. We must give her an insurance for protection for herself and her baby. How can this be done? Only through the realization of its necessity and improved rural condition by the nation itself. One billion dollars has been appropriated by our country for the 1935 naval development. It would take but a small appropriation, under proper supervision, to suffice the needs of our rural mother, Is it not as important to give our children a secure foundation on which to build a healthful and effecient life, and their mothers time to give them in developing this, as it is to build huge naval vessels, which by the time these babies have reached ten years of age will have to be discarded because of newer and more scientific developments.

Environmental influence deserves consideration because, at birth an infant has to adjust himself to these immediate conditions, and the success or failure with which this is accomplished is the measure of his chances for life. These include climatic conditions, such as heat, cold, and humidity, which are undoubtably factors in producing infant diseases and deaths.

The hot summer months bring a marked increase in diarrheal disease, which is one of the leading diseases of infancy.

Many cases have been traced to improper handling of milk, the most inexusible cause, because it is a known fact that bacteria multiply rapidly in milk unless strict sanitary conditions are observed. This means, inspection of cattle and testing for tuberculosis, pastuerization of milk, throughly cleansing of bottles and cans in which it is delivered and the personal sanitation of dairy employees.

Nature has decreed that breast mild is the best for babies. Babies thus fed not only receive an immunity for six months or longer from their mothers, but if entirely breast fed the chances of developing diarrheal infection are slight, if however, complimentary feedings are given, though but one feeding a day and the milk is not pure, serious complicaions may arise.

It is an interesting fact that in times of industrial depression, when women are thrown out of employment, and even though the general mortality rates increase the infant mortality rates decrease because of increased prevalence in breast feeding.

Education of the mothers is the most important factor in reducing the incidence of diarrheal diseases. This has been answered by our child welfare stations or clinics. In the past five years these have been greatly increased, and a noted decrease is found in diarrheal disease. Although these clinics are available in every community, rural, urban and city, more mothers must be taugh to use their services.

New York state now leads with 185 child health centers in 57 communities and over 80 per cent receive municipal aid.

This does not mean that New York is the only state well equiped, far from it, the infant welfare clinics have rapidly increased and we are proud of their results.

France has always lead in the organization of public and private activities for the reduction of infant mortality. Here the first day nursery was established in 1844 . Today milk depots and infant welfare centers are accessable to all of France.

England and Belguim also have grown rapidly. In 1914, England had 250 child hygiene centers and in 1920 it had increased to 2,000. Belgium in 1914 had 70 and 1920,768. The past fifteen years have seen as steady an increase.

A marked predominance of respiratory infection is found in the winter months, due partially to feeding and housing conditions. It is especially prevelent in tenement districts of large cities where the babies sleep in crowded and poorly ventilated rooms where clothing is insufficient and lact of sunshine appalling.

It has been found that certain national groups are particularly susciptable to respiratory infection. In a study made in Buffalo, it was found a striking fact that Italian babies concistently had a high death rate from respiratory infection; 36 per cent of all deaths under one year in this racial age were due to respiratory infection. This in contrast with the 17.5 in babies of native born mothers and 16 per cent of Polish mothers, has been found as a general ruling in all parts of our country.

Respiratory infection is just one of the handicaps in the field of infections, essentially important to reduce, for the safety of infants. The others are: Tuberculosis, Smallpox, Whooping Cough and other contagious diseases that show a high mortality.

Tuberculosis, in infants, although it has been greatly reduced over earlier figures, is still an outstanding cause of death. We have an extensive public health program for educating and trotecting the public against this disease. This indludes infants, but it is almost with despondency that we enter homes where adults with open cases of Tuberculosis live in close contact with infants and small children.

The infant furnishes the most receptive soil for tubercular bacilli. His resistance is low and when infection takes place, death follows in a high percentage of cases.

One quarter of these deaths have been estimated as due to bovine or cattle type of Tuberculosis. Pastuerization and boiling of milk will kill thses bacteria rendering no harm to the vitamin or food content in doing so. We cannot expect to overcome these conditions unless some effort is put forth in the isolation for those who furnish the source from which new infection occurs.

France has developed a vaccine for Tuberculosis, and has carried this into her Infant Welfare Stations. However, this vaccine has not been accepted by our medical profession as entirely safe, and therefore has not been used in the United States.

Smallpox, onve the most dreaded disease ofr infants, no longer appears as such. Specific vaccine has reduced it in this country, but there are countries today who have abandoned the use or never used it, that witness deadly infant scourges from it.

Whooping Cough, because it is epidemic is not easy to control, except through control of contacts and good isolation. This is defenitely a provlem of the community and health officer. There are numerous contagious diseases, to which infants fall victims each year. But to all these, the use of vaccines and innoculations as a preventative measure, when possible, plus keeping away from all cirect contact are common sense measures, which is used, would greatly aid in reducing our mortality

Race and Nativity present a phenominal picture that we find very interesting and important. This may be due to living conditions to some extent, but the tendency is to credit it to inheritent characteristics and racial customs.

The infant of native mothers stands better chances of living than those of foreign mothers, although infants with Russian, Scandenavian, English or German mothers have a lower mortality. This may be due to the large numger of immigrants from other nations who have come to our country and are handicapped by language and our mode of living, or by lack of educarion,so that even though they have, through heredity, a more vigorous endowment, the environmental factors lower their chances.

The Jewish group has a strictly lower mortality rate than

all other groups, including the native born. Especially in the first month of life. These facts have been explained in some, as due to the fact that foreign mothers are more eager that their babies have breast milk than to artificially feed them, a fact which does not hold true for our native mothers.

Age of the mother and spacing of births are not only important in maternal mortality, but it has been found that when babies are born of mothers between the ages of twenty five and thirty, the infants have their best chances of living and that between thirty five and fourty, infants have a better chance than those born in the fifteen to nineteen years of age group.

In a study made by Dr. Louis I. Dublin, he observed that first births had a slightly higher mortality than second. The figures were 104.7 per cent as compared with 95.7 per cent After the second child, the death rate increased slowly for the third and fourth, and more rapidly as births increased reaching 146.8 per cent for the ninth child and 151.5 for the tenth or more. Spacing of births showed that children who followed the preceeding child after one year, presented a mortality of 146.7 per cent as compared with 98.6 and 85.5 at an interval of two or more years.

It is easitly illustrated by the place we hold in infant mortality with that of other countries, that we need to overcome many obstacles.

To accomplish some of these we need increased knowledge as to causes of deaths of new born, especially pre-mature.

We need extensive educational programs, given by physicians and nurses on infant and child care and that are fostered by the state, to insure availability to all parts of the country.

Lastly we need tthe help of the public in receiving these state aids, as well as the utilization of them.

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