IMPORTANCE OF PRENATAL EDUCATION

VI

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"As in a building,
Stone rests on stone, and wanting the foundation
All would be wanting, so in human life
Each action rests on the foregoing event
That made it possible, but is forgotten
And buried in the earth"

- LONGFELLOW

IMPORTANCE OF PRENATAL EDUCATION

Nietzche has said "A time will come when men will think of nothing but education" - but that time has not yet arrived. We are still struggling for enlightenment in many fields and one on which we need particular emphasis is that of education for motherhood. Up to date this factor has been greatly neglected bringing as a result serious consequences which the public has not fully realized.

It does seem odd that men seek to perpetuate their memories in enduring monuments of bronze and stone. In doing so they have neglected the most enduring monument of all - that of Posterity. It seems they have overlooked their real opportunity, for in posterity - that is in our children we may best hope to reflect a lasting greatness. Our most obvious hope for the future is thru our children. In them we can see our soul stuff, our character traits, the very forms of our physical selves continuing after we are gone.

Woman is Nature's supreme instrument of the future and must be prepared for it. It is thru her our monuments will endure and thru her that education

should take its hold.

It is the aim of this paper to show the need for prenatal education within our country today and to emphasize the overwhelming importance of it as a serious problem to be faced.

The recent publications, not in medical journals alone but in magazines which reach all the classes of the laity, of statistics of maternal mortality, have given the world somewhat of a surprise. Moreover comparative statistics, as good as they are at the present time have not reflected glory on this great country of which we are so proud. We might take it calmly perhaps that there has been no great improvement in the rate of maternal mortality since 1915 in this country but when we know that there is only one other country, whose records of maternal deaths can show as high a rate as ours, our patriotic pride should be touched. We should become truly alarmed when our maternal mortality rate has not improved as has other countries' such as Belgium, Chile, Finland, Japan, New Zealand and Spain.

All of us, I think have an instinctive feeling that bearing children is a natural, and should be a simple and normal function. We are willing to ad-

mit that accidents may happen in childbirth, just as they may happen in the course of any normal, healthy life. But we cannot look calmly on the facts, if we know them, about the death of women and infants in childbirth from preventable causes; of women who were anatomically and physiologically fitted to bear children. Why should we sit back and say"One woman in one hundred and fifty dies in childbirth. It is a chance all women have to take. Let nature take its course". All women should not have to take that chance. And we are not too far removed from nature in other respects to sit back and let it take its course in this respect, especially as in many cases death is not due to letting nature take its course.

Let us, without being too technical, look at the chief causes of maternal mortality and see just how much we can blame nature.

1 - Diseases of pregnancy. The names of these diseases which are recognizable to everybody are: Pernicious vomiting, kidney disease and convulsions. In most cases these diseases are possible to diagnose early, and much may be done to check them and prevent fatal termination.

2 - Accidents of labor, such as hemorrhage, prolonged

labor and malformations or malpositions. In this class are the majority of deaths which are very difficult to prevent, even with expert care. It is significant that in the year 1927 only one third of the maternal deaths in the United States fell into this class.

3 - Childbed fever, also known as puerperal septicemia or blood poisoning following labor. As a cause of maternal death this stands first. Its proportion to other causes of death is variously given by different authorities as from thirty-five to forty-five per cent.

A glance at these three main causes shows us clearly that the work to be done in the attempt to reduce this rate must be divided into two parts. The first part is to educate the women themselves, to bring knowledge about themselves up to the point where they will seek medical advice and information. The second part is the crusade, we may call it, to improve the standards of care of women during, just before and after labor.

It may seem that this part of the work should fall on the shoulders of the doctor alone, but it does not entirely. Many babies in this country are not delivered by doctors, and for years to come many will not be. The midwife is still a large factor in the

obstetrical situation, and will continue to be so, we might suppose as long as we have a large unassimilated foreign population, and as long as there are isolated country districts where doctors are not available. Incidentally, many a good word may be said for the midwife. If properly trained the midwife is a good obstetrical specialist. The properly trained midwife does not care for other patients and is therefore not likely to come in contact with infection and carry it to the mothers she cares for; she does not attempt operative interference, but transfers cases she cannot handle to the hospital; she does not make dangerous examinations late in pregnancy, and she is well acquainted with aseptic technique. The poorly trained midwife of course is another story.

The attempt to educate the women of this country in the care of themselves during pregnancy has already been made by various agencies. Not only have the staffs of maternity hospitals been conducting prenatal clinics for years but there are Maternity Centers in many cities. Investigations have been made by separate departments of health but in the course of these investigations it became evident that the statistics as at present published by the Bureau of Census, by state and city health departments and other sources fail to offer any really clear and satisfactory insight into the causes of the death of either mother or newborn infant. A special study therefore was made of this specific problem:

MATERNAL MORTALITY RATES FOR THE UNITED STATES AND CERTAIN FOREIGN COUNTRIES 1915-1928

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Deaths of mothers from causes associated with pregnancy and childbirth per 10,000 live berths :

NTRY:	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
-														
alia:	43	53	56	47	47	50	47	45	51	55	56	53	59	-
gium:	-	-	-	-	72	60	57	53	56	58	50	61	-	-
ada	-	-	-	-	-	-	51	55	54	60	56	57	56	-
le	67	73	72	82	88	75	79	80	74	61	61	58	58	47
cho- vakia	-	-	-	-	37	40	37	-	33	31	33	34	36	-
mark:	-	-	-	-	-	24	20	20	26	23	24	26	31	-
land Wales	42	41	39	38	44	43	39	38	38	39	41	41	41	44
onia	-	-	-	-	-	-	-	-	45	40	38	41	41	-
land	-	36	38	44	40	36	33	30	31	35	29	32	30	-
ece	-	-	-	-	-	-	73	72	85	83	-	-	-	-
gary:	-	42	40	52	29	32	29	30	28	31	29	32	30	-
ly	22	27	30	37	29	28	26	25	27	32	28	26	26	-
an	36	35	35	38	33	35	36	33	34	31	30	27	28	28
h- ia	-	-	-	-	-	-	-	-	-	-	59	56	50	-
her- ds	-	-	-	29	33	24	23	25	23	24	26	29	29	34
land	47	59	60	52	51	65	51	51	51	50	47	42	49	49
th land	56	50	51	47	46	69	52	47	49	45	44	56	48	52
way	27	28	30	30	34	26	22	25	28	29	27	32	-	-
vador	-	-	-	-	-	57	57	46	50	57	50	56	63	-
tland	61	57	59	70	62	62	64	66	64	58	62	64	64	70
tzer- nd	-	54	56	51	57	56	55	51	46	48	43	44	37	-
S.(Birth g.area)	61	62	66	92	74	80	68	66	67	66	65	66	65	69
guay:	22	29	32	30	23	34	33	27	27	25	25	30	22	24

NOTE - (1) The U.S. Birth Registration area expanded from 10 states in 1915 to 44 in 1928.

(2) Figures compiled by U.S. Department of Labor.

The following recommendations were made by the last White House Conference on Child Health and Protection - held April 6, 1931:

1 - Efforts must be increased to provide early and better prenatal care to more women, since only early diagnosis allows adequate treatment of a disease complicating pregnancy.

2 - A warning should be disseminated that compliance with insistent demands of women for shorter and painless labors inevitably increases the risks for both mother and baby.

3 - Interference of any kind with pregnancy or labor should be limited to well defined indications.

4 - In view of the fact that abortions are responsible for the immediate death of many women and permanent disability in many others, at least all febrile cases of abortion should be hospitalized.

5 - More precise information should be obtainable concerning immediate causes of maternal and neonatal mortality from standard certificates of birth and death.

Here let us look a minute at this Body called the White House Conference as regards prenatal care. The first conference, called by President Roosevelt in 1909, was chiefly concerned with the dependent child. It was due to the stimulus of this conference and other factors that the Children's Bureau of the Department of Labor was organized.

The second White House Conference was called in 1919 at the request of President Wilson. The radius of this conference was enlarged to include: economic and social basis for child welfare standards; child labor; health of mothers and children; children in need of special care; and standardization of child welfare laws.

The third and fourth conferences included even wider ranges of these fields. As a preliminary to the last conference sixteen months were devoted to preparatory study, research and assembling of facts on the part of 1,200 experts working on nearly 150 different committees, assembled under seventeen main committees, divided into four sections:

Medical Service
Public Health and Administration
Education and Training
The Handicapped.

We are chiefly concerned with the educational field in relation to prenatal care. This field includes education of the students in medical colleges, education of nurses, education of social workers and midwives and finally education of the laity and public. Each one of these seem a field of its own and in which there is a chance for a vast amount of progress along the educational line.

The matter of statistics is one which cannot be touched upon lightly. Standard certificates of birth and death furnish basic data from which to draw conclusions as to the success of the efforts in the reduction of maternal and infant mortality. Further progress demands more complete and accurate morbidity statistics as well as those now available for mortality. Vital statistics as now presented, concerning maternal and early infant mortality leave much to be desired on the part of those who are striving to arrive at a clearer understanding of the intimate causes of such deaths. Even more difficult to determine are the causes of still-births as set forth in official statistics.

It is true that since the establishment of the Birth Registration Area we have been able to

compute with some degree of accuracy infant and maternal mortality rates based upon the total number of live births. These rates have been used in comparing different geographical units within the United States, and the United States with foreign countries. There has been an inclination to regard these rates as specific, however, and thus invest them with an importance which the manner of their collection and their intrinsic value does not merit.

When viewed critically, it is seen that the rates from foreign countries and from different parts of the United States are not strictly comparable. It is due to the fact that there are differences of completeness, definition, classification and interpretation in the vital statistics as tabulated in various countries and even with the United States itself. Considerable progress has been made, however, by the adoption of the International Classification of Causes of Death and Joint Cause. The Vital Statistics Section of the League of Nations has undertaken recently to bring greater uniformity into the use of Standard Certificates of Birth and Death.

The items so appearing on these certificates should be so arranged as to be easily read and interpreted.

The definition of each item should be clear, explicit and unambiguous. It should be stated plainly that every item on the certificates should be filled out completely and physicians should be required to do this in each locality. The responsibility for this obviously falls upon the local registrars, although the State Bureaus of Vital Statistics should keep a careful check on them.

Let us first consider the action of the federal government in the direction of maternity and infancy welfare. When the Children's Bureau was created in 1912, there was only one state which had organized for promoting the health of children and mothers by creating a child hygiene bureau in the state department of health. A few such bureaus had been organized in the health departments of some of our larger cities, but as a whole, the child health and maternity work was being done by private infant welfare and visiting nurse associations, usually only in the larger cities and without the resources necessary for carrying out the whole program.

Baby week campaigns, which the Bureau sponsored in cooperation with the General Federation of Women's Clubs, and the Children's Year Program, sponsored by the Women's Committee of the Council

of National Defense in an effort to prevent the lowering of standards of care during the war, extended to almost every county in the United States and showed up the unnecessarily high death rates among mothers and babies, and showed also the value of organized activities in the saving of lives.

The Sheppard-Towner Act for the promotion of the welfare and the hygiene of maternity and infancy, which became a law on November 23, 1921 was in all essentials the same as the plan for the "Public Protection of Maternity and Infancy" submitted by Miss Lathrop as chief of the Children's Bureau in her annual report for the year 1917. This act authorized an annual appropriation of $1,240,000 for a five year period, of which $50,000 could be expended by the Children's Bureau for administrative purposes and for the investigation of maternal and infant mortality, while the balance was to be divided among the states accepting the Act as follows: $5,000 unmatched to each state, and an additional $5,000 to each state if matched, the balance to be allotted among the several states on the basis of population and granted if matched by an equal state appropriation.

The Act intended that the plan of work should originate in the state and be carried on by the state. A Federal Board of Maternity and Infancy Hygiene, composed of the Chief of the Children's Bureau, the Surgeon General of the United States Public Health Service and the U.S. Commissioner of Education, was given authority to approve or disapprove state plans, but the Act provided that the plans must be approved by the Federal Board if reasonably appropriate and adequate to carry out its purpose.

In the Children's Bureau, the administration of the Act was directly in charge of a Maternity and Infant Hygiene division. In addition to auditing accounts and carrying out other routine administration details the Bureau assisted the states by arranging conferences of state direction, by field consultation, by loan of bureau personnel for demonstration and survey purposes. In 1927, the authorized appropriation was extended by Congress for a two year period, not without considerable opposition, especially that of the American Medical Association. Their chief opposition rested in the fact that they thought it undesirable as legislation because it took the responsibility away from the states.

In 1921, Mr. Hoover organized the American Child Health Association and was later made its President. A planning committee was formed and gradually membership in the organization increased. When he became President of the United States, Mr. Hoover resigned the presidency of the association. Out of this association was drawn the personnel of the Child Welfare Conference, appointed by the President in 1929.

The attitude of President Hoover on the question of Federal Maternity and Infancy is set forth in his annual messages to Congress. In one message of December 3, 1929 he said:

> "I have recently, in cooperation with the Secretaries of the Interior and Labor Departments, laid the foundation of an exhaustive inquiry into the facts precedent to a nation-wide White House Conference on child health and protection. This cooperative movement among interested agencies will impose no expense upon the government.
>
> The advance in scientific discovery as to disease and health imposes new considerations upon us. The nation as a whole should be vitally interested in the health of all people; in protection from spread of contagious disease; in the relation of physical and mental disabilities

to criminality, and in the economic and moral advancement which is fundamentally associated with sound body and mind. The organization of preventive measures and health education in its personal application is the province of public health service.

I recommend to the Congress that the purpose of the Sheppard-Towner Act should be continued through the Children's Bureau for a limited number of years; and that the Congress should consider the desirability of confining the use of Federal funds by the states to the building up of such county or other local units, and that such outlay should be positively coordinated with the funds expended thru the United States Public Health service directed to other phases of the same county or other local unit organization".

Yet Congress closed without including in its millions of appropriations a cent for the continuance of that work that the Children's Bureau used to do under the Sheppard-Towner Act for maternity and infancy. For the last two years that program has limped along without

federal aid. The bills introduced into Congress seem to have drifted along without definite results. Nineteen of the richer states have managed to appropriate funds for maternity and infancy work equal to the earlier joint grants of federal and state governments. Twenty-six states have been unable to do so. In the face of greater need than before, during the current depression of both industry and agriculture, state programs this year will have to be cut still further; Michigan for example faces a cut of $126,000 in its health services, in which the state's work for mothers and children will have to share.

The result of all this means that in some of the most trying years in American history, that the government will do nothing at all to cooperate with the states - and this in the year when the President and the Secretary of the Interior have marshalled the social workers and medical services of the country at the White House Conference to lay down a great program of advance in the nurture of child life.

Maternity Center Organization of New York is an outstanding example of a local organization

dealing with this cause. That this high death rate of mothers in our country can be controlled has been proven by the work of this Maternity Center. This organization, among the mothers to whom it gave its assistance, reduced the rate to 2.2 per thousand live births against 6.5 in the country as a whole. To accomplish this, skilled care from the very first intimation of pregnancy until the baby is at least six weeks old, is what is needed. Besides the saving of mothers' lives, stillbirths were 42% lower among women receiving intensive care of the Maternity Center than in the rest of the district, and infant deaths in the first month of life were reduced in the same circumstances 32%. A recent editorial in the Journal of the American Medical Association states, "Proper prenatal care and adequate obstetric care will lower greatly the mortality and morbidity rates in any group". Surely, the work of the Maternity Center bears witness to the truth of this statement. This Association has functioned for seven years.

In honor of Mother's Day (May 8th), the Association planned a nation-wide Mother's Day Campaign to obtain better maternity care for the expectant mother, and this same body has announced that "Special

efforts are to be made in 1932 to awaken prospective fathers to the fact that a well baby and a healthy mother requires more than simply to let nature take its course".

Recently the Center has been very active in distributing the new circulars entitled "A message to Expectant Mothers and Fathers" from the New York State Medical Society. This pamphlet outlines the fundamentals of maternity hygiene and urges medical care from the time the woman thinks she is pregnant until the doctor advises her to resume her regular activities and the care of the baby. It is significant that we are bringing the fathers into the picture. Much has been written about the role of the mother in the family but writers have been conspecuously silent as to the role which the father plays. Surely, fathers should or ought to play a most important part in protecting the health of mind and body of the pregnant woman. It has been suggested that the name of Maternity Center will be enlarged to The Maternity and Paternity Center, which no doubt is a valuable suggestion. The education of the expectant father cannot here be over-emphasized.

Since we have considered a Federal bureau

and an urban organization outside our own state, let us now take a look at Oregon as a representative of some phases of the development which has been achieved thru educational care. Of all the forty-eight states, Oregon is the best for babies. Such is the testimony, at least, of the birth and death records. In every year but one since 1919 (This was the year in which Oregon was admitted to the Birth Registration Area; that is when its records became so complete that they were accepted without question by the United States Census Bureau) babies born in Oregon have had a better chance of living than babies born in any other state and even in the exceptional year Oregon ranked second.

Portland, which holds between a quarter and a third of all the people of the state, ranks second among the larger American cities.

Marion County, Oregon is its outstanding county as concerns the progress of maternal and child welfare. We are not chiefly concerned here with the infant mortality as much so as maternal, but it is well to show the progress in this field because it is so closely related. The rate of improvement in Marion County, as measured by the following, is twice that of

the United States generally and twice that of the State of Oregon. The figures follow:

Infant Death Roles, 1920-1929
(Deaths under one year per 1,000 live births)

	1920-24	1925-29	Reduction
U.S. Registration Area	77.1	69.1	10%
Oregon, omitting Portland	57.4	52.3	9%
Oregon, entire state	56.4	49.2	13%
Marion County	55.4	43.3	22%

Marion County in the last five years has bettered its death rate for babies under one month by nearly a quarter. It has done almost twice as well as the State of Oregon and four times as well as the nation at large. As regards maternal mortality the condition is somewhat different but it too has made progress. Before 1925 it was more dangerous to give birth to a baby in Oregon than it was in the United States generally. This condition has changed for the better but Oregon is still lagging behing other states, including its neighbors, California and Idaho. Here again Marion County has outdone the state in which it lies, as in 1920-24 it had a little less than its share of deaths at childbirth, yet it had more than its share in comparison

with the whole Registration Area. In the last five years it has cut its rate squarely in half. Marion County now outranks both state and nation.

Maternal Death Rates, 1920-29
(Deaths at childbirth per 1,000 live births)

	1920-24	1925-29	Reduction
U.S. Registration Area	6.9	6.5	6%
Oregon, omitting Portland	7.9	6.5	18%
Oregon, entire state	7.7	6.4	17%
Marion County	7.3	3.6	51%

Here in Marion County during 1929, after conferences with the medical advisory committee, it was decided that nursing service at delivery formerly available to every mother, should be made available to those mothers who had engaged a physician before the fifth month of pregnancy. The purpose of this is to encourage more mothers to receive the proper medical care during this most important early period.

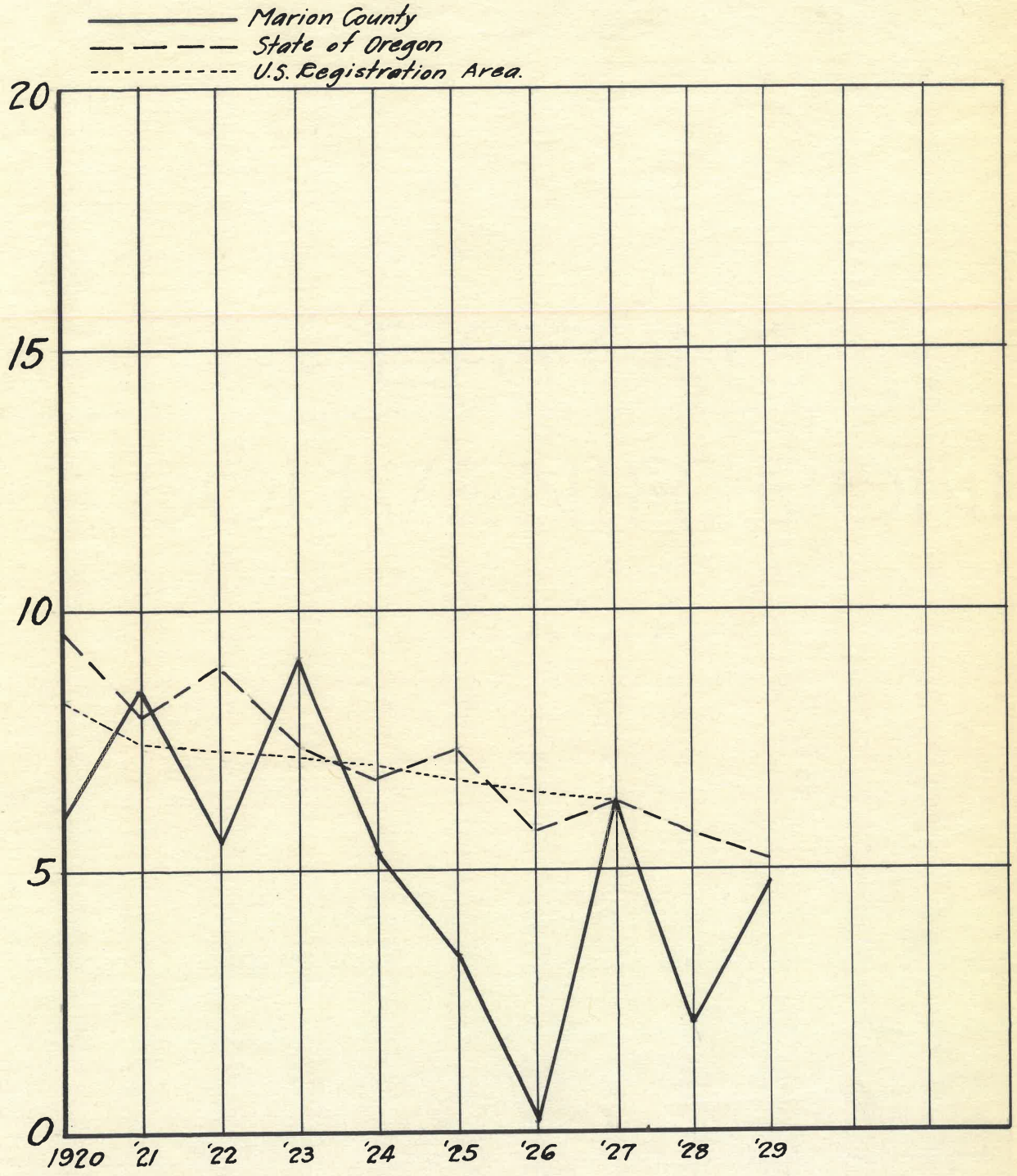
Last year in Marion County 833 babies were born, including twenty-six who died before birth; 194 of the mothers of these babies had, in addition to their physician's care, some supervision by the

nurses before their babies arrived - that is prenatal care. The nurses were present to assist the physicians at ten deliveries, many of the others being delivered in hospitals. In this group of 194 mothers who had either prenatal delivery service or nursing supervision, no deaths occurred. In the group not under nursing care there were four maternal deaths.

Certain it is that when the public generally realizes how much can be done by prenatal care, how many mothers can be preserved, how many women can be rescued from wretched lives of invalidism, how many babies can be saved to the state, then we shall see a determined effort made to provide such care for all classes of society.

MATERNAL MORTALITY

PER 1000 LIVE BIRTHS



Marion County also recognizes the importance of vital statistics and realizes them good clues for the individual problems of health. In studying the vital statistics of Marion County for 1929, we find that there were 781 births and 655 deaths, exclusive of non-resident deaths occurring in state institutions. This leaves a balance of 126 in their favor which would indicate that at least a fair proportion of the population consists of young adults who are bringing up families.

With a calculated population in Marion County of 50,055 the birth rate for 1929 was 15.6 per 1,000 population in comparison with 11.9 for Oregon and 12.1 for the United States Registration Area.

In order that there might be an impartial judgment of Marion County's progress in the organization of an adequate health program, an expert from the American Public Health Association visited and made a report. The scores for prenatal and vital statistics are as follows:

	Marion County Score	Maximum Score	Percentage of Maximum Score
Vital Statistics - - -	60	60	100.00
Prenatal Service - - -	63	75	84.00

Since 1925 Marion County has had a broader and more extensive health service and a larger health staff than any other county in Oregon except Multnomah, which includes Portland. If public health service has been an important factor in the lowering of death rates in the County, one would expect to find the saving of life more or less directly associated with the service given by the public health workers to individual citizens. According to available records, this has been the case in Marion County.

To put this assumption to test, a special study was made of all the births and maternal and infant deaths in a period of four years from October 1, 1925, when Marion County's health program was well under way. During this period there were 3,363 births in the County. In 483 cases prenatal care was given by a public health nurse, leaving 2,880 without such service. Maternal deaths, still-births and the deaths of babies under one month of age were counted separately for the group which the nurses had reached and the group not reached, with the following results:

Deaths and Death Rates among Mother and Infants in Relation to Prenatal Nursing Care

	Under Care	Not Under Care
Total births	483	2,880
Maternal deaths	0	11
Death rate per 1,000 births	0.0	3.8
Still-births	3	108
Still-birth rate per 1,000 births	6.2	37.5
Live births	480	2,772
Deaths under 1 month	8	87
Death rate per 1,000 live births	16.7	31.4

There is a decided advantage for the babies born and unborn and also for mothers who have had the benefit of public health and medical instruction and care.

The work which was done to guard the health of women at childbirth deserves fuller discussion because it is so close to home. The health of the mothers is of double importance to the health department; the deaths and disorders associated with childbirth are a severe drain on the resources of the community; and it is a loss of time and effort to begin child health work after the child is born, for then his physical assets and liabilities are already to a large extent determined.

Guarding the health of the mothers is primarily the task of the family physician, but the health officer can stand by to urge pregnant women to put themselves under the doctor's care and can reinforce the doctor's influence by sending his nurses into the home to teach the principles of prenatal hygiene, especially as they effect the unborn child.

In Marion County it is now only the exceptional mother who fails to make intelligent preparation for her baby and engage a doctor. One mother was found who had relied on her husband's help at the birth of each of twelve children and survived to bear a thirteenth under orthodox care. Occasionally a baby would arrive at the hop yards in a more than ordinarily casual way. Midwives were practically unknown and only one mother out of five, in the first year of this demonstration was going to a hospital for delivery. Some physicians were giving regular prenatal care, but in many cases the quality of this care - as is usual in the United States - left something to be desired.

The demonstration nurses found in this situation an opportunity to do something to educate mothers to take better care of themselves during pregnancy and

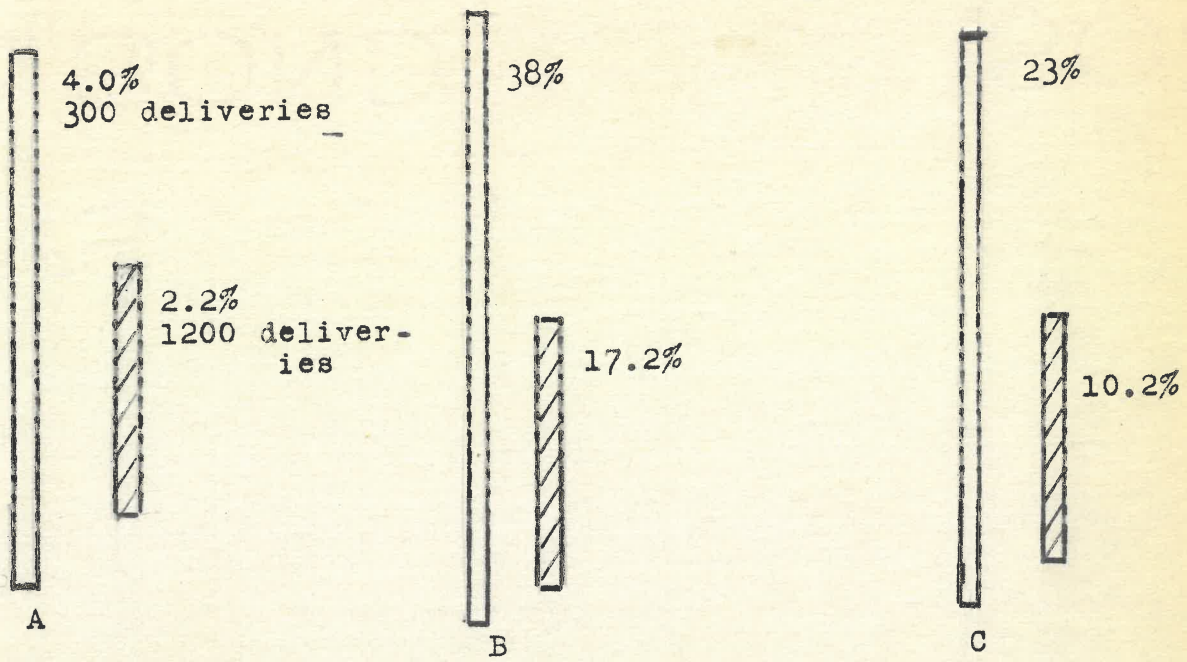
to make more use of medical care. They learned of prenatal cases in various ways; about a third of them were referred to the nurses by the doctors in charge, and many more were reported by the mothers themselves, or by friends and neighbors. The nurse visited the home to advise the mother to see her doctor promptly and frequently, to help her plan for her delivery, and, under the doctor's directions, to make sure that her diet and general hygiene were such as to protect both herself and the child.

The health department offered for loan or rent the sterile supplies necessary when the baby was born at home. The fact that there were no deaths in childbirth among the mothers receiving prenatal nursing service indicates that they were under good care. A large percentage of the mothers visited by the nurses had medical care during pregnancy and most of them had seen their doctor at least once before the nurse called. 41% of these mothers saw their doctors before the fifth month, 89% before the ninth. The nurses may, perhaps, have influenced these women to make more frequent visits to the doctor. The average of such visits per patient rose from 3.6 in 1926 to 5.7 in 1929.

Marion County has the advantage of good medical service and exceptional medical leadership, is

reasonably well supplied with hospitals and is relatively free from poverty. The nursing service could hardly have been expected to bring about any dramatic change in the prevailing standards of maternity care, but it does seem to have played a part in the substantial lowering of maternal and infant death rates.

As to the education of the laity in Oregon at large, 22% of prospective mothers are now receiving grade "A" of prenatal care but four fifths remain to be educated. Excellent work has already been done by the Oregon State Board of Health thru its Bureau of Child Hygiene which furnishes valuable information to every expectant mother applying for it. This chart shows clearly the necessity of prenatal care.



A- Fetal deaths
B- Fetal deaths due to abrupted placenta
C- Fetal deaths due to pre-eclamptic toxemia

Since this is in reality a public problem - this problem of adequate prenatal care as an influence upon the lives of mothers and children, let us look at a few moments in that light. Before the advent of what is commonly called modern public health, health administration was comparatively simple; its field was narrow, and the duties prerogative of health officials were generally accepted without dispute, not only by the public, but by the medical profession. With the constant expansion of the field of public health, due to popular demand, the administration has become more difficult and complex. The definite recognition of maternal mortality as a public health program can be said to date from the enactment of the Sheppard-Towner Act whose content has been before stated in this paper. Before that time the welfare of the expectant mother was being looked after in a few large cities by unofficial organizations.

The problems with which the public health workers find themselves confronted are shown in a recent pamphlet published by the Maternity Center Association, which may be summed up as follows: In the United States

there are -

3,026,789 miles of territory,

Whole communities without roads,

Wide stretches of territories without doctors,

1,900 counties without a public health nurse,

At any given time more than 2,000,000 pregnant mothers distributed over this vast territory.

As a result of a questionairre sent out to various hospitals in New York State, these facts were brought out in relation to prenatal care: 41% failed to answer. Of the 408 answers 65% reported yes; 35% reported no. From the meager information as to the details of prenatal care, it was most difficult to gauge the effectiveness of such care. Judged by the generously accepted standards - the minimum standards as issued by the State Department of Health - it would appear that few cases had enjoyed what might be termed adequate prenatal care. An attempt to ascertain when such care began showed that 34% did not have prenatal supervision until the seventh, eighth or ninth month. The most important fact to be derived from all this is that 74% of the patients had been hospitalized, but that half of them had been delivered before going to the hospital, and later died

therein. This represents a high degree of emergency with the inevitable conclusion that the patients received little medical supervision until it was too late.

An efficient public health program must provide adequately for maternal and early infant care. A report given by J.H. Mason Knox Jr. M.D. before the American Child Health Association summarizes the development of maternal and early infant care in its relation to a public health program. We are chiefly concerned with the Prenatal Care.

PRENATAL CARE

It is becoming increasingly evident that the death rate among mothers and newly born infants can only be successfully combated when the care of the infant is projected into the prenatal period and included in the adequate care of the mother; this care commenced as early as possible in her pregnancy. One can readily see the necessity for this care when statistics show that over 23,000 women die during childbirth in the United States every year. Millions of women are more or less permanently invalided by childbirth and over 200,000 children are born dead or die in the first few weeks of their existence. A certain portion of all this misery is,

because of our present meager knowledge, inevitable, but we know enough to prevent a large part of it, as has been amply proved by the experience of the Metropolitan Life Insurance Company, the Maternity Center Association of New York, and the numerous maternity hospitals and visiting nursing associations conducting prenatal clinics.

In order to reach the mother, various means have been employed. The instruction of the community in general, particularly the women, in the importance of adequate prenatal care. Care of the expectant mother throughout her entire pregnancy has been urged upon all physicians doing obstetrical work not only by obstetricians but by State and County Medical Societies and by Health Departments.

Let us give the ultimate objects of maternal education and show the relationship between them and the educational opportunities.

1 - To prepare each mother to attain intelligent motherhood.

2 - To reduce the number of deaths of mothers and infants to a minimum.

3 - To leave the mother in the best of condition to carry on the home and family duties.

4 - To give each baby a good start in life.

The activities of the national organizations which touch upon programs for maternal care fall into three groups:

1 - The collection of data on maternal and infant mortality, the rate of live and still-births, and various factors influencing these rates.

2 - National, state and local demonstrations of the practical value of adequate prenatal care.

3 - Education of the physicians, nurses, midwives, the expectant mother and the public concerning the value of prenatal care.

All this work has been carried on by federal, state, nursing and voluntary lay organizations. The work of the national organizations has been a stimulus to local communities and while there has been some duplication of effort, this has not been wasted, but has served to emphasize the importance of the work in the minds of the public and which still needs considerable more emphasis. Theoretically, this information, being a medical problem should be given to all groups by physicians but in practice it has not worked out that way. It is a public problem and therefore other methods have been adopted.

From prenatal clinics, mother's classes started. Prenatal letters and pamphlets are written in order that more and more women, especially those remote from medical care can be reached. Traveling Clinics, the

so-called Health Care Conference of the Child Welfare Special, have gone about from town to town in some of the states, distributing prenatal pamphlets, holding clinics, showing many posters, charts and statistics on maternal problems. In a few of the states, correspondence courses are carried on either by the State University or Department of Education.

In the education of the public at large the necessity of maternal care and the results that are obtained are explained. Lectures before women's clubs by physicians and nurses trained in obstetrical work arouse much interest and stimulate the communities to demand better work and to have better facilities with which to work.

In some of the universities, colleges and normal schools, courses on maternal welfare are given to the student.

From time to time magazine articles appear, and in a few magazines, physicians conduct departments on prenatal care in which questions are answered and articles of interest on this subject are published. A few magazines have their own prenatal letters and pamphlets for distribution to their subscribers.

Life insurance companies, commercial houses dealing in maternal supplies, baby clothes, or food products, publish pamphlets and articles for the education of their policy holders or patrons. In recent years the moving picture has been used to good advantage and more recently the radio broadcast has become a source of information.

In all this, the stressing of prenatal care is the outstanding feature. Prenatal care is essential and until the public at large is educated to the necessity for adequate care in this line, and demands that the high maternal and fetal mortality that exists in this country be reduced, little real progress can be made. These methods have been condensed and given briefly. They are all helpful, but it would seem that education, to be more effective, must be made more extensive and intensive thruout the entire country, keeping the facts on maternal welfare before the public constantly.

The interest and zeal of the Children's Bureau of the Department of Labor and the Census Bureau have been of invaluable aid in the collection and correlation of statistical data on factors causing maternal mortality. The Children's Bureau has given

valuable service in the direction of the administration of the Federal Maternity and Infancy Act and in other demonstrations as I have already before cited, in addition to the publication of many bulletins of educational and practical value dealing with prenatal care.

The practical results of the Maternity and Infancy Act cannot be truly evaluated, but it is significant that all but three of the State Bureaus of Child Hygiene cooperated fully in carrying out the demonstrations. Through the continued cooperation of these State Bureaus much valuable work may be done and information secured.

From a survey of this entire subject of prenatal care as a part of an educational program certain conclusions may be derived and suggestions given as to the furtherance of this education in our country. The conclusions to be derived are:

1 - Infant mortality and maternal mortality are unnecessarily high.

2 - The universal application of our present obstetrical knowledge would improve such condition. The public needs further education as to the necessity of prenatal care. The various methods now used for educating the pregnant woman are all valuable and should be continued.

3 - More accurate and complete statistical data as to the number and causes of

deaths. This should lead to a better understanding of the causes and therewith result in a more effective plan of prevention.

4 - The education of the parents should be stressed first instead of last, including items such as the following:

(a) Importance of early and constant prenatal care.

(b) Choice of good obstetric physician.

(c) Importance of prevention of syphillis. Desirability of Wasserman test as a routine procedure.

(d) Placing before the parents the results of organizations' work for better prenatal care.

(e) Emphasize the importance of insurance in some form to take care of emergencies and meet extra demands.

5 - That research work is valuable and needed. Some of the points to be covered would be:

(a) Complete study of pregnancy in the light of the whole family background.

(b) More complete records of pregnancy and its outcome.

(c) Prolonged observations of cases - detailed reliable case studies which will bring out valuable information.

6 - That some form of maternity benefits are needed in this country, especially for the poorer classes. Skilled medical, nursing and hospital care should be afforded all those who become mothers whatever their economic circumstances.

It seems as if a nationwide educational program conducted extensively by County health units along this prenatal line would be a great step forward in the progress of attacking such a problem. The starting point in mapping out such a program is naturally its objectives. These I have already stated previously in this paper are fitting for such a program. The next step is to select and identify those to whom the publicity is directed. This question is very closely bound up with the objectives, and as we are concerned, it means the public at large, but more especially expectant mothers and fathers.

Another factor in the educational program is the selection of subject matter. This would include an entire prenatal course from conception till after delivery, with special emphasis on preventive work.

Some understanding of the mental attitudes of the persons to be approached is important in every phase of the program. Principles of attention, interest and motivation must form the basis of the plan of approach to a particular public.

When facts are once established, a further statistical analysis must be made in order to obtain a definite idea of the particular cause of the difficulty.

The reason for its existence must be sought. As I have tried to show, a large number of these maternal and infant deaths were due to lack of prenatal care and education. Therefore, it is evident that attention must be directed to the period before birth and to the institution of prenatal work.

We have defined our problem and our basic objectives. Our audience is primarily the expectant mothers and fathers. We must now define the causes and arrange the publicity to interest the audience and eliminate those causes. The greatest stimulus for such an audience, regardless, seems to be that of the layette. What preparation is necessary for the new baby? What clothes are needed? How shall these be made? Now that we have a stimulus to arouse the interest,we may bring in all the other related items of prenatal care.

The psychology underlying such a program must necessarily be dealt with and realized as an important factor. The average citizen of today needs something which will penetrate into the central fields of his consciousness. There must be an appeal - an appeal to some want - a great interest aroused. Reasoning alone is insufficient. We will not win thru arguments. It is poor psychology to stress the horrors of lack of care. This we cannot do. Emphasis should

be laid on the positive side of health education. Silk stockings develop holes, collars become soiled, clothing becomes baggy, automobiles acquire flat tires - but are these the things which are emphasized by those who urge us to buy.

Recently two organizations in China undertook smallpox vaccination campaigns. Both developed large posters. One developed all the horrors of the disease, pock marks, blindness, poverty and graveyard bones. The other merely showed a smiling child pointing with pride at a vaccination scar. The latter poster was more in demand without doubt. Eighty-five percent of our knowledge is said to come to us thru the eye and we should take note of this fact when building up a prenatal program. It is said that even the best product in the world will not reach its highest possible sales without being truthfully visualized.

Statistical analysis indicates the relative importance of our program. Certainly statistical analysis of existing conditions gives us the basis for an attempt to alter the faulty conditions. Our objectives have been determined by scientific accuracy.

It should be up to the individual unit in what manner it would contact its audience. Different

sections of the country vary greatly and so do individuals. The audience must be reached thru agencies, groups or individuals who may not be personally concerned in the objectives but are necessary. There is no object in creating a desire for action unless there is a reasonably easy outlet and to limit our selection of audiences to those that are provided with that outlet is hopelessly to limit our campaign. No particular gain is made when we urge regular care during pregnancy and our prospective mothers live in the plains country far from a doctor. We should either choose to have the facilities for action at their command, or provide such facilities.

The reason I have chosen the county as the factor in carrying out such a prenatal program is for the fact that in the United States the county as a rule is the governmental unit which best serves as a basis for local organization. The average county in size, population and wealth is suited to the requirements of a small health organization composed of full time trained staff members. The cities or towns cannot be utilized to such an extent in the development of a state-wide program. The taxpayers of the county so conducting a program should be reasonably well informed as to the cost of health service and the ac-

tivities customarily expected.

Since ours is a universal problem, it is of interest to all people and not necessarily one of small local districts. Oftentimes the taxpayer feels like he is being neglected in other fields of health service, for instance: a person not afflicted with hookworm disease may have or be threatened with another preventable disease and feel that he should not be neglected indefinitely. But as I have said, our problem concerns every home, every man and every woman.

The organized health demonstration of Marion County in our own state is a splendid example of a well organized program with gratifying results. The first principle of a demonstration organization is a sincere and careful adaptation to local conditions. Such should be our program with sweeping results.

According to my method of thinking,and that of many others, not woman but mother is the most precious possession of the nation, so precious that society advances its own highest well-being when it protects the mother. One of the most important questions before our nation today then is the protection of the great career of motherhood.

The problem of educating the public to demand prenatal care divides itself into two parts: educating the wife and educating the husband.

A doctor is not to blame for not looking after an expectant mother if he does not know she is expectant. Once an intelligent woman realizes that both easy motherhood and safe motherhood are largely dependent on her own prompt and regular calls at her physician's office, she will make those calls just as often as she can. There are no insuperable obstacles to persuading expectant mothers to avail themselves of proper prenatal care. Local conditions and facilities alter cases but with an efficient program and efficient administration the results can be obtained.

Somehow the task of educating the father is a more elusive one. The average husband during his wife's confinement is a picture of worried affection. It is hard to say why man has so long maintained this attitude of indifference toward a human experience which he himself induces and as for the results - once they are safely accomplished, he invariably takes such a large share of the credit. Perhaps his attitude is due to ignorance of modern obstetrical care. Perhaps it is due to the fact that he neither suffers the pains

of childbirth nor incurs its dangers. But it may be that he just does not think about it.

The husbands of our nation need to be shown that the wives who get early, regular, skilled and clean prenatal care seldom die in childbirth. That wives who do not receive this type of care frequently do. This fact should be impressed upon the husband, that he can secure this right kind of care if he starts early enough and keeps after it regularly and that it is up to him to do for his wife what she is unable to do for herself.

If our fathers would get behind the movement for better and safer maternity with the same enthusiasm that they get behind their own fight for better wages and safer working conditions, we would get results! The education of expectant mothers and fathers as to their cooperation in the demanding of proper prenatal care will no doubt lower our maternal mortality rate and make us proud of our achievements and progress in prenatal welfare.

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