

Mother and child attention in Mexico between 1921 and 1930 by the Department of Public Health

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Abstract

A series of actions during the years of 1921-1930 took place in Mexico City by the Department of Health in order to protect the women during the gravid puerperal state and the product of conception through the different stages. These activities were initiated based on a work presented in 1921 by Dr. Isidro Espinosa de los Reyes during the Child's First Mexican Congress sponsored by the newspaper *El Universal*. In this work entitled "Childcare Intrauterine", the author proposes the foundation of pre- and post-birth clinics, with the intention of protecting the mother and fetus, increasing the birth rate, as well as improving the physical conditions of those born. These clinics were given the name of Hygiene Centers and under the supervision of Dr. Espinosa de los Reyes eight centers were founded, the first one in 1921 and the last one in 1930. The work contains, in full, the activities undertaken to protect the mother and child during the decade indicated. (Gac Med Mex. 2016;152:206-19)

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Introduction*

The present manuscript evokes things happened in our country between 1921 and 1930, a period during which a series of medical-social activities were organized aiming to protect both mothers and children.

This interrupted series of events occurring during the referred decade were the basis for two specialties, obstetrics and pediatrics, to favorably evolve in different aspects, especially in the adequate surveillance of the mother during the gravid and puerperal states and

on her child's care, both during the perinatal period and the first years of life.

For a long time, doctors who looked after women and children did not have adequate resources available to establish adequate diagnoses and know the causes originating the elevated figures of maternal, fetal, neonatal and children morbidity and mortality.

On the other hand, the situation for women was, from time immemorial, of constant fear during the evolution of pregnancy, delivery and postpartum and, in addition, they had doubts on the vitality and conditions of their children. These concerns were logic, since they were aware of the frequency of maternal,

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fetal, neonate and children death, especially during the first month of life.

This social, material and spiritual affliction of such an important being as the mother was shared since 1920 by a Mexican physician, Dr. Isidro Espinoza de los Reyes, who, since those days, diffused the goodness of prenatal consultation. He started his Obstetric Clinic course with introductory obstetrics, a method of his authorship that, if adequately applied, led to provide adequate prenatal consultation and opportunely diagnose problems, not only in the mother, but also in the fetus.

This physician, who was an obstetrician, frequently had to act as a pediatrician, as it used to happen on those days, and was the first one in Mexico to address perinatology.

His wishes to found pre- and postnatal care centers, aiming to protect the mother-fetus dyad by increasing birth rates and improving newborns physical conditions, found an opportunity when the newspaper *El Universal* announced, in 1921, in Mexico City, the celebration of the First Mexican Congress of the Child (from January 2 to 9).

Aware of Dr. Isidro Espinoza de los Reyes knowledge and concerns, the Public Health Higher Council commissioned him to present, on its behalf, a work on childcare in the eugenics section of the congress. The exposed manuscript was entitled *Notes on intrauterine childcare*.

As a result of the discussion on this work, Dr. Espinoza de los Reyes' proposal to found in Mexico City pre- and postnatal care clinics intended to protect the child, increase birth rates and improve the newborns' physical conditions was supported.

The Department of Public Health, under the direction of doctors Gabriel Malda and Alfonso Pruneda, accepted the idea and commissioned Dr. Espinoza de los Reyes to visit pre- and postnatal care clinics in the USA. At his return, he was put in charge to organize and install the first clinic, which was given the name of Hygiene Center.

Owing to its importance, the work read by its author 94 years ago (1921-2015) is entirely transcribed below.

Notes on intrauterine childcare

In a lecture given by Pinard on preservation and improvement of the human species, he said: obstetrics should not be restricted to the tight circle of mechanical, physiological and pathological phenomena of childbirth, and has all the right to treat everything concerning the reproductive function.

The same author defines early childcare as "the science intended to investigate and study causes relating the preservation and improvement of the human species", and adds: "it should be divided into childcare before procreation, during gestation and after birth".

The second part of this classification constitutes the official subject that the Honorable Public Health Higher Council saw fit pointing out to me, the development of which, circumscribed to my ideas and limited time, I will have the privilege to expose before this illustrated contest.

I will start with intrauterine mortality statistics in Mexico, over the past 7 years (from 1916 to 1921), as reported by the Public Health Higher Council: "Embryonic and fetal mortality in Mexico reaches 7.26 of each 100 pregnancies, with the main cause being syphilis (45.70%). Maybe this figure is not as high as in more advanced countries, since in ours, abortive manipulations are still not widespread. On the other hand, in Mexico, 28 children out of every 100 births die at early childhood".

In view of these terrifying figures that decimate the children's population, whose causes are almost entirely curable or at least largely diminishable, is it not desirable that we continue with the task that notoriously has been addressed in this congress to prevent as much as possible this hydra from lifting its head to devour helpless beings that clamor for our help?

However, if we accept the aforementioned definition, the purpose of early childcare is not only the preservation of the species, but also its improvement; and with this regard, the causes that degenerate human race should be studied, so that, by subtracting them, we increase the quantity, and especially the quality of the species.

To explain how the child can suffer the morbid influence of his/her generators in the course of his/her development, all we have to do is to superficially recall the conditions under which it occurs. As every living being, the human being is born from an egg, resulting of the coalescence of two cellular elements that when binding together form a complete cell, which, in favorable temperature, humidity and nutrition conditions, is susceptible to create and divide into elements and more and more numerous cell differentiations that, when grouped, form the embryo, which is the rudiment of the new being. The embryo, and later the fetus, is going to receive, for 9 months, the influence of the being that has brought it to life, keeping it safe from temperature variations, sheltered by the womb; being fed with maternal blood filtered through the placenta

in order to adequately nurture it in the different stages of its evolution; guarding it against trauma by means of a hydraulic regulator: the amniotic fluid. An so, during the gestational months, the new being will continue its intrauterine life with no disruptions, with nothing undermining its integrity or conformation, provided the aforementioned factors do not suffer alterations.

The new being is the center where all maternal disturbances are reflected, either thermal, as it occurs with fever, which is enough to kill the fetus; in the mechanical order, position, situation anomalies of the uterine muscle, many times hinder its development and, finally, blood histochemical composition alteration, either by septic or toxic products of an infection or intoxication, or by the presence of germs in the bloodstream, which kill the embryo before reaching fetal age, deprive the fetus from life before the limits of viability or, beyond these, the new being abandons the womb preserving the fatal, indelible seal, imprinted by the beings that brought it to life deprived of human-kind's supreme gift: health.

By virtue of the foregoing, it seems that the mother is the only one who leaves this mark of pain on the fetus and that there is little contribution of the father to this combination of pathological elements. This is not the case, and even if it's true that the fetus is going to be nurtured by maternal elements, it is also true that a fertile ground, no matter how rich it is to fertilize the seed, will never be that much as to be able to provide the child with good health characteristics that neither parent possesses.

This is how the alcoholic transmits his children the stigma of his monstrosity when his semen-producing gland cells have unfortunately not yet been attacked by fatty degeneration.

Since I addressed the subject from the toxic substances' point of view, I will continue to elaborate on it not only to be consequent on its development, but because I believe that a large proportion of our population, especially in some regions of the Republic, has deep-seated habits of chronic alcoholism.

Unfortunately, I cannot speak to you with statistical foundations, I do not have the good fortune to know in this sense anything that has been written in Mexico on the subject, but works carried out in Europe provide us with general data that apply to the purposes of this congress.

From the studies by Feré, Nicaud and Richar on chicken eggs, it is known that, when submitted to alcohol vapors or when injecting a small amount of this toxic substance into their albumin, a considerable proportion of abnormal development forms, monstrosities

and even dead embryos is observed. Moreover, if anise or absinth essences are added to the alcohol, deformations reach specially the nervous centers. Miss Craig and Stockand experiences are very interesting, and their conditions, very similar to regular intoxication in man; having made females and males breathe alcohol vapors once-weekly, and taking care not to go beyond the first signs of inebriation, the following results were observed: of 24 alcohol-exposed males mated with 24 non-alcohol-exposed females, 14 turned out being sterile; of the remaining 10, 5 produced 8 death *in utero* chicks; the other 5 procreated 12 alive, out of which 2 died at birth, 5 died within 1 and 6 weeks, with epileptiform convulsions, and only 5 survived, but were smaller than normal.

The consequences of moderate alcoholism, frequent in the human species, without reaching drunkenness and allowing the subjects to maintain apparent good health, even in case only one of the parents is alcoholic, are deplorable for the offspring.

It should be noted that the above-described experiences are in agreement with observed clinical facts; of the children of male alcoholics, 58% are sterile, and there is 22% of dead children and 20% alive, but sick, epileptic or small. If alcoholism in the father has such a disastrous effect for the offspring, alcoholism in the mother is not less deleterious, although special conditions are required: alcohol should have been ingested before ovules complete their formation, since while spermatozoids are known to be constantly generated in male's testicles during his reproductive life and suffer all disorders suffered by the individual, ovules stop forming when the mother has reached puberty and only the alcohol ingested at that time or during pregnancy exerts an overt action on the offspring. It is perfectly demonstrated that when making a woman ingest a certain amount of alcohol during labor, the umbilical vein can be dosed with an amount of alcohol that is equivalent to that contained by the mother's blood, without the placenta showing the slightest alteration, since it does not constitute a barrier against maternal alcoholism. To support the above, a glimpse at the second part of Miss Craig's aforementioned experience should suffice: of 4 alcohol-exposed females and fertilized by healthy males, one is sterile, another has given 3 full-term chicks, which died immediately, and 2 have given a normal chick that has survived. On the other hand, the clinic shows that, of alcoholic mothers, 25% are sterile, 25% bear dead children and 50% are normal. Finally, of 14 matings where both elements have been exposed to alcohol vapors, 10 are sterile,

3 had 6 stillbirths and one has had one live birth that died after six days with epileptiform convulsions.

Toxic action on the fetus also occurs in women with abusive consumption of tobacco or that owing to their regular activities have to handle it, as it happens with cigarette factories' female workers; predisposition to abortion, frequent early deliveries and membrane rupture and even general weakness in the offspring with marked weight decrease.

Something similar occurs with women who work in places where there is release of carbonic acid or in factories where lead salts are used, since in both cases, the fetus suffers a toxic action similar to that of the other poisons we have addressed.

Currently, a toxic substance comes to add to the list of those already referred and unfortunately, its abuse spreading to females makes for its effects to be more fetocidal than when exclusively limited to males. I am taking about morphine and preparations based on this drug or its derivatives: toconalgia, pantopon, sedal and twilight-sleep, since all these have direct action on the fetus, as demonstrated with analyses performed in umbilical vein blood or dead fetuses' liver, after the mother received an injection of this drug hoping to reduce labor pains.

And on this point, there are two topics that deserve to be addressed and that, unfortunately, due to time limitations, I can only outline; the first one refers to morphine as a vice; the second, to the use of this drug or its derivatives as an analgesic during labor. Of the first one, you may well know the experiences reported by Luteaud, in the sense that both man and woman undergoing this intoxication are likely to become sterile, lose all sexual appetite, and remain together only by common affinity to the drug rather than by love.

However, fecundation between these intoxicated couples is not rare, and Giraud, on his thesis written in Paris in 1915 on morphine and puerperium, referred the case of six women at the end of pregnancy, in whom suppression of the drug for some gestation days was sufficient to elicit abrupt movements in the fetus and uterine contractions, which ceased with the administration of this drug. The same author noted that children at birth take longer to breath, frequently show the pulmonary asphyxiating form and, after a few hours, experience sudden convulsions and new asphyxia accesses that soon enough end with their lives.

I have had the opportunity to see the son of a medicine student who, excited with the recent thesis of a fellow student, injected his wife two ampoules of a preparation based on morphine and that, according to

the author, makes labor painless, and is harmless for the mother and the child. The result was disastrous: the baby, born with apparent death, required great patience and effort for respiration to acquire normal characteristics but, all too soon, our efforts, which appeared to be crowned by success, rendered useless and the child died 12 h after being born.

I wouldn't be doing justice when addressing this issue, so important since it directly relates to the life of the child at the moment he is about to leave the maternal womb, if I didn't mention a beautiful monograph published in 1916 by the Argentinean journal *La Asociación Médica* on obstetric analgesia, where the author demonstrates with statistical data the failures of all chemical-pharmaceutical products on the fetal element.

When addressing this point, we shouldn't forget that Pinar, the author of this procedure, after having passionately advocated it at the Academy of Sciences of Paris, one year later admitted that his product had toxic effects on the fetus, with the government of France forbidding the sale of this product soon afterwards.

Gentlemen, please allow me to make a digression to refer a preparation that, without toxically acting on the fetus, is used by criminal hands to quickly terminate an already ongoing abortion and, in other cases, to abbreviate the delivery with no other indications but the hands of a clock. I am referring to pituitrin, which in more an occasion has terminated the mother's life and, consequently, that of the child, since it is irresponsibly used without knowing its precise indications, with highly unpleasant results.

Following on the intoxication pathway, we arrive to a problem that, in spite of its old age, is the subject of current studies and discussions to elucidate its etiologic and therapeutic characteristics; I am referring to puerperal eclampsia. This syndrome accounts for 30% of maternal deaths, as demonstrated by statistical data collected at the Baudelocque clinic: in 57 eclamptic mothers who deliver 59 children, 3 die *in utero*, 11 during labor and 6 after birth.

Fortunately for the mother and child, if care is opportune, all children will surely be saved.

Consistent with the classification of these points, I'm going to refer to the histological modifications of maternal blood due to the presence of germs or their toxins that, by crossing the placental filter, will cause the death of the fetus since the first months of pregnancy or lesions that imprint a mark that is difficult to erase during extrauterine life. This infection, known as the fetocidal disease par excellence, not without reason has been placed at the top of our statistics, and to

strengthen this argument and national statistics, I will refer to you the overwhelming figure taken from the work by Fournier entitled *The syphilitic inheritance*. In 90 women infected and pregnant within the first year of infection, pregnancy has ended as follows: 50 children aborted or expelled dead, 38 die at birth and only 2 children have survived. These numbers by themselves are eloquent enough to give this ailment the preferment place in all works on children salvage and especially when every day the growing advance of this condition, which has motivated actions in foreign countries, is palpable for everybody. Among us, the means opposing the disease are so reduced, that it mows them down and advances devastating the new generations.

In general terms, all infections that attack the human being can attack pregnant women and, owing to their toxic products and germs that cross the placenta, cause in many cases fetal death, as a consequence of hyperthermia or loss of liver compartment glycogen that infiltrates fat, disturbing the nutritional and calorific functions of the new being, soon to succumb, unable to regulate its temperature and nutritional functions.

At the beginning of this dissertation I said that the fetus is the center where all changes in the maternal body are reflected; in addition, pregnancy itself has the property that it influences on all body organ systems.

Now, with this organism being modified by the evolutionary process triggered by conception, in order for these modifications not to turn into pathological alterations, it requires for care and attention of the pregnant woman to constitute an element of constant general hygiene during the 9 months of gestation. As a general rule, it can be said that a pregnant woman should not introduce great modifications to her lifestyle; pregnancy is a physiological fact, the life of a pregnant woman is within the limits of general hygiene, and only the milk secretion functions that will develop by influence of this state deserve special attention. Therefore, good nutrition, life outdoors, avoidance of physical or moral fatigue, toxic substances (alcohol, carbonic acid, lead, tobacco, morphine or its derivatives, etc.), scrupulous hygiene of the body in general and internal genital organs, total avoidance of sexual intercourse during the last months of pregnancy and during the days corresponding to the menstrual cycle should be recommended.

Similarly, all means to maintain the correct functioning of emunctories and excretory organs that play such an important role in endogenous intoxications during pregnancy should be recommended.

Knowing that the intrinsic and extrinsic influences of the place where the fetus develops are highly important for the positioning or orientation in the maternal womb, and that they are closely linked to each other, during pregnancy, the rules of hygiene do not coadjuvate with normal elements, orientation and position of the fetus are modified to constitute position-related dystocias, which quite often terminate the child's life, as demonstrated by statistical data. But, fortunately, opportune intervention by the physician can correct these disorders or apply the appropriate treatment, entirely suppressing the figures of fetal death by this cause. The same thesis can be sustained with modern operations for the treatment of pelvic dystocias, which should allow the passage of the fetus. These easily executed operations, when opportunely performed, yield a 100% proportion of success for the life of the new being.

In addition to these elements that destroy fetal life and that can be entirely eliminated by perfectly known therapeutic methods, there is one beyond the resources of medical science that, proportionally, is occupying a prominent place in fetal devastation; I am referring to criminal abortion; for its extinction, I believe the juridical part is the one indicated to collaborate.

It is time, gentleman, to do something practical. Let's not talk about problems anymore and let's address conclusions that, proposed and discussed by elements of value, crystallize the ideal of this dissertation: to do good to humankind so that, in a not too remote future, the expression race degeneration becomes surpassed and only regeneration is spoken of.

By the aforementioned statistical data, experiences and considerations, it can be deducted that the intra-uterine child mortality figures are overwhelming and that, if not entirely, a considerable number of conditions of the fetus *in utero* can be safely and favorably fought by applying the appropriate therapeutics with precise indications with regard to its opportunity, consequently decreasing the percentage of children mortality, perhaps even down to zero. Which means will we use to fight these conditions? I propose to the Honorable Congress the following ones, inspired in the constant tasks I have undertaken, either in teaching or in different official posts I have occupied and that clinical practice necessities have suggested to me: to found in Mexico City maternity as an entity free of the influences of nosocomial establishments general organization. It will comprise a central office where obstetric surgery can be practiced with all the rules and, at the same time, provided with the necessary elements for

obstetrics outpatient daily care, as well as for the treatment of venereal-syphilitic diseases. Adjacent to this central office, to install, in different areas of the city, conveniently distributed subordinate offices provided with the necessary elements for daily outpatient care, eutocyc delivery care or execution of minor obstetric operations, as well as to help the central office on its activities against venereal-syphilitic diseases. To diffuse by any means possible the rules of hygiene for every pregnant woman and the consequences they are subjected to when, during pregnancy, they fail to observe them or have not been under the care of the ideal person in that area.

To create a similar department to those already established, in order for patients attended to by the central office or by the different sections to remain as long as it is required. To admit in this department women asking for shelter, even at early stages of pregnancy, providing their general status reveals marked nutritional deficit or if there is fear the delivery may be dystocic.

To diffuse and make effective the anti-alcoholic campaign.

To put the Straus law in force. This law comprises two regulations: 1st Pregnant women have to abandon their jobs without having to pay any compensation. 2nd In every industrial or commercial establishment, public or private, every female worker or employee with her delivery date approaching, is entitled to one month's rest, comprising, voluntarily, the fortnight before delivery and, obligatorily, an entire month after delivery. To ensure a source of livelihood during this rest, the State agrees on a pension that, depending on the place, ranges from 50 cents to 1 frank per day, amounts that have increased in the course of the war. (This law will undergo the necessary changes with regard to the customs of the country).

To prohibit, or at least restrict, the sale of toconalgine and pituitrin, demanding in any case medical prescription (Fig. 1).

To ask the Mexican forum for its help to efficaciously combat criminal abortion.

Isidro Espinoza de los Reyes, Mexico, January 1921.

Note 1. When the discussion on the attached document was concluded, according to the proposal of some delegates, the author suppressed the clause referring abortion prophylaxis, agreeing that it is more efficacious when all means for moral education are put at stake.

Note 2. By making concrete proposals, the author added to those already mentioned, the convenience of the committee addressing the Faculty of Medicine in

Figure 1. Author's signature, place and date.

order for it, in turn, to make the necessary arrangements for students on training in obstetrics clinics to receive more teaching support at the Maternity Departments of nosocomial establishments.

Early childhood mortality in Mexico: its causes and remedies

This work is one more of the numerous writings where Dr. Isidro Espinoza de los Reyes demonstrates his constant concern for the aggressions suffered by the mother and the conception product by the inheritance factor and the surrounding environment.

Once again, he shows his concerns in the year of 1924, when the National Academy of Medicine invited its members to compete on the subject *Early childhood mortality in Mexico: its causes and remedies*, for the award of that year. Importantly, the work was submitted to the academy in a sealed envelope, with the legend "The most important causes of early childhood mortality should be fought during pregnancy". Undoubtedly, the legend used as password expresses profound childcare-related contents.

The work is extensive and, in brief, the introduction begins saying that "between the mortality of the child within the first month of life, of the premature and of the embryo, there are the same links than between all phenomena produced by the same cause; they are consequent to the same precedent, pathological states with the same etiologies, all with the same outcome: death.

The term *child* is not just a transient delineation in eugenic language. The life of the child is endogenic to that of the mother, and it is in the mystery of pregnancy where we have to catch by surprise and combat the

most important causes of intrauterine and early childhood mortality.

A population's life potential is early childhood, that of first year, that of the first week. The efforts to alleviate the condition of the child, establish his/her wellbeing, ensure his/her life, are being regarded as a grandiose work that goes beyond the limits of a mere expression of good will or philanthropy. It is a profoundly important public issue that puts the national, but especially the democratic spirit to test.

Perhaps there is no better sign of modern advancement in public administration than the proportion of its revenue dedicated to childhood protection. Presently, the consumption of iron, coal, oil, cement and rails is no longer the index of a nation's material progress, but rather hygiene, public health, longevity average, increase in human units and the protection and care of the pregnant woman and her child.

Going into the first chapter, which refers to embryonic and fetal mortality and stillbirth rate in Mexico, the author says: "It is difficult to specify, due to the considerable frequency of miscarriages without the doctor been notified and to the lack of pre- and postnatal surveillance, yet however, there are data reaching 7.26 for each 100 pregnancies, with the main cause being syphilis.

The second chapter indicates that, in Mexico, 28 children out of each 100 live births die at early childhood, a proportion that is higher to that in any of the 20 most civilized countries of the world (1923): New Zealand: 5, Australia: 6.

Of course, early childhood mortality, as in other countries, is lower as children get older and higher when they are smaller; it peaks within the first weeks of life.

More important is to know that, in the first fortnight of life, four times more die than in the second and your astonishment will reach its limit with the news that, in the first day of life, newborns die in a number that is 50-fold higher than at 30 days; here, in this elevated mortality, early childcare should be determinant.

Why is it that in almost every country of the world, the proportion of children who die within the first month of life is 4, 5 and 6-fold higher than in those who die at the second? Why is it 10 and 12-fold higher than in those who die at the twelfth?

The reason is that parents are sick and have not received all the care they need; that especially the mother has not been opportunely protected and looked after during pregnancy and delivery. Lack of resources of the mother, work excess, fatigue and ignorance are

some other causes. In short, the larger contingent of newborns who die within the first weeks of life should be imputed to prenatal and natal causes.

In Mexico, for many years, among the natal and prenatal causes, syphilis produces the largest number of victims during early childhood.

In the decade of 1920, maternal mortality was actually very high, not only in Mexico, where 90 maternal deaths were thought to probably occur for each 10,000 live births, but also in the USA, where 7.4 were reported for each 1,000 deliveries.

The mother's death is an immense loss. Generally, it extends to the household and children's wellbeing, particularly to the motherless child who faces a particularly hazardous existence. For example, in two of the cities included by the Children's Office on its study on childhood mortality, the mortality proportion of children whose mothers died within the following year after childbirth is equal to that of all children who died in the city.

In Waterby, the proportion of dead children is 3-fold higher than the average of the entire city. In Baltimore, five times the city average.

Poverty and ignorance are the cruelest enemies of the pregnant woman and the child.

At the bottom, at ultimate analysis, maybe it's all about ignorance.

The field of action of medical drugs to fight childhood mortality is, according to current trends, prophylactic rather than curative, since, although in some cases medical science puts the use of therapeutic agents at stake to eliminate conditions of the mother, in order to preserve the fetus influenced on its vitality and development, the mind of the clinician in these cases is that of the childcare-oriented physician: taking care of the product of conception, through the mother, without self-imposing as primary task the healing of the mother herself.

When therapeutics with its medications or hygienic principles is not opportunely and efficaciously applied, the fetus, if it doesn't die within the maternal womb, will succumb in more or less short time or far from its birth, because it carries within the devastating seed of its health.

For these reasons, the childcare-oriented physician, knowing the action exerted by the maternal conditions on the fetus during the gestation period and later on childhood vitality, tries by different means to fight for the improvement of the mother's health, to eliminate the possibilities of death and the lack of elements of the newborn to fight with during the first days of extrauterine

life, a period of real difficulties to adapt to the external environment.

Since pregnancy is a physiological state, it is only logical thinking that every alteration in the pregnant woman normal metabolism, by introduction or accumulation of toxic products into the body's inner strata, will also modify its characteristics and influence on the fetus' vitality, destroying its life.

If this action of exogenous toxic substances exerts disturbances that can even be fatal, the action of endogenous toxins, when accumulated in the maternal body, is not less important.

This is the case in gravidic autointoxication, which occurs to a higher or lesser extent in an important number of pregnant women and causes death of the newborn within the first hours, as stated by Baudelocque, referring to first days' mortality.

Owing to this cause, 26 children lost their lives during labor or already as newborns within the few ensuing hours, over 50 live births born from 76 patients affected by gravidic intoxication.

With regard to gravidic autointoxication, there is nothing more convincing and encouraging than the progressively decreasing figures in foreign countries, although sparse in number among us, in spite of the palpable benefits in the short period prenatal childcare has been functioning at the Centers of Hygiene. In these centers, the mothers have been receiving opportune and efficacious medical attention; the mother receives special care to her status, to gravidic albuminuria and general nutritional disorders.

In the Public Health Department statistics, which have served to me as a basis for this work, prolonged labor, dystocias and obstetric trauma are referred to as causes of childhood mortality.

The usefulness of the Hygiene Centers has been evident and hopefully it will serve as an incentive to broaden their action, multiplying themselves in relation to the children's population, which adds up to 36,000 children from 0 to 2 years of age; but, in addition, as a complement to the actions of these centers, the mother must receive teachings and advise on practical hygiene which, by preserving her health, tend to care for and improve the product of conception's life.

Unfortunately, according to the above mentioned trends, from the moment the woman stops attending the centers due to material impossibility owing to her advanced state, the 9-month continued development of her pregnancy suffers the consequences of the unskillfulness of persons that, in the capacity of midwives,

are going to take care of the child during the first days of life, a period that is known to be the most difficult for the newborn, since his/her physiological state is not yet adapted to struggle against elements other than those it has been subjected to during fetal life. On other occasions, it is not the ignorant woman or the inexperienced physician on matters of postnatal childcare what puts this new life on danger. We are all aware of the sorry organizational state of maternity units in our country; there, the life of the newborn is considered at second term with regard of that of the mother and both lack every care, even the most essential measures that should protect them against different types of changes.

As a result of this gap in the prenatal care received by the newborn, at the Centers of Childhood Hygiene, in the prenatal care section and in other postnatal care units, we are faced with the disappointment of finding all the work carried out during 9 months of intrauterine life destroyed, to ultimately be forced to transform our mission as childcare-oriented physicians into that of pediatricians.

"Education of parents, and especially of future mothers, is a means that should be put into practice to solve the consequences of ignorance and to prevent the danger mother and child are exposed to when the mother ignores her role with regard to her child's health. How best would it be to educate women, prior to becoming wives, and thus prevent the consequences of their ignorance! For this education, the most appropriate venue is the school, which should shape, in today's girl, in the future mother, an element of defense. Instead of experimenting on her own children and pay, as a tribute of her ignorance, with the life of the first-born and perhaps with that of several children, she will put into practice the teachings she received at school as a girl and whose fruits she will harvest full of joy when she sees herself surrounded by healthy and vigorous children. Childcare from the first day of the child's birth until middle childhood should be considered as an obligatory teaching subject for girls at primary schools, and the principles of prenatal childcare and sexual education should be taught to young girls at higher primary and normal schools."

Birth of the Centers of Childhood Hygiene

To know about the foundation of the centers, it is essential to read what Dr. Isidro Espinosa de los Reyes wrote in a brochure entitled *Collaboration to the 6th Pan-American Congress of the Child in the City of*

Lima, Peru^{*}. In this document he described everything that occurred from 1921 to 1930, and in the preface he wrote: "The contingent that the Public Health Department of my country honors me to submit to the consideration of this honorable congress is a report of the works of the Childhood Hygiene Service which, outlined in the year of 1921, was crystallized with the creation of this service annexed to those already existing in the general organization of the aforementioned department by decree of the Citizen President of the Republic.

It is not my intention to dazzle you with new ideas, much less to surprise you with a different organization to that previously established in other countries, and I just wish to convey the way we conceive the idea of childhood protection.

Our statistical figures, which reveal the success achieved in only a year's work, encourage us to continue this initiated task, and our health authorities, with a clear vision of this necessity, demonstrate with their help and attention to this problem, that they are willing to continue in the already charted field.

"Our hope, the ideal of our aspirations, is to erase from our statistical numbers on maternal mortality, morbidity, stillbirth rates and childhood mortality, these figures that are discouraging, but that at the same time stimulate our work, with the purpose to improve our biological conditions, which are the basis of a social enhancement that will result in aggrandizement of our beloved homeland".

Dr. Isidro Espinoza de los Reyes, head of the Childhood Hygiene Service, Mexico City, July 1930.

Introduction

In the eugenics section of the First Congress of the Child (1921), gathered in Mexico City and sponsored by the newspaper *El Universal*, as a result of the discussion on the work *Notes on intrauterine childcare*, my proposal to found in Mexico City pre- and postnatal care clinics, in order to protect the mother and the child, to increase birth rates and to improve newborns' physical conditions was supported.

A few months later, the Public Health Department, under the direction of doctors Gabiel Malda and Alfonso Pruneda, accepted the idea and I was commissioned to make studies on early childhood care at the

Johns Hopkins University, as well as to visit clinics of this nature in the USA. When I came back in 1922, I was put in charge to organize and install the first clinic, which was given the name Hygiene Center, intending for this office to act as a nucleus to spread teachings on hygiene aiming to improve residential and individual hygienic conditions, taking advantage of pregnant mothers and children attendance for postnatal care to diffuse hygienic teachings during their time of stay at the clinic, and at the same time, practical teachings on methods and means of hygiene were brought to their domiciles by female social inspectors, in order to improve physical-social conditions of the community.

Soon enough, this center became insufficient to address the patients' numerous requests and, one year later, establishing the second one was necessary, trying for its location to be similar to that of the previous one and to that of those subsequently founded in neighborhoods of poor and numerous population, since these are the areas where this work has to be more intensified in view of the unhygienic conditions people live in.

The work developed by these centers makes it increasingly clear that the population wholeheartedly accepted their existence and, in no time, the diffused teachings, the female social inspectors' constant visits and the printed and verbal propaganda rendered the population gradually getting accustomed to consider these centers as preventive care rather than curative care clinics, and the percentage of healthy children, whose mothers consult on rules of hygiene, especially with regard to nutrition, and the proportion of pregnant women attending since the first months of pregnancy, rather than in the final ones, as it happened initially, have progressively increased; and the statistical charts demonstrate the way we slowly and progressively have been growing, although not as quickly as we would have desired. But the number of these two clinics for a city of 900,000 inhabitants, such as Mexico City, was clearly insufficient and the fundamental problem of decreasing maternal morbidity and mortality and fighting childhood mortality still prevailed.

In brief, the Childhood Hygiene Centers are institutions intended to direct prenatal and postnatal hygiene and authorize and distribute related foods (milk). The purposes of these centers are attained by means of medical appointments for pregnant women and children younger than 2 years, by means of a clinical research laboratory and a special office for pregnant women and children with venereal-syphilitic conditions.

^{*}Estados Unidos Mexicanos, Departamento de Salubridad Pública, Servicio de Higiene Infantil, Colaboración al VI Congreso Panamericano del Niño en la Ciudad de Lima, Perú. México: Imprenta del Departamento de Salubridad Pública; 1930.

The location of Mexico City and municipalities' Hygiene Centers was driven by the desire for these institutions to be located in places with higher population density, and at the same time in the poorest neighborhoods, since these are where both factors, misery and ignorance, find a broader field to prey on women and children.

These centers are attended mainly by working class women and upper classes' maidservants who live in these areas, and the attendance is copious.

I would like to bring to my readers' attention that these centers are dedicated to the memory of our already departed doctors, who have been prominent with their dedication in some of the obstetrics and pediatrics specialties, as an example to our young doctors, to awaken in them the enthusiasm for everything referring to maternal and child care.

The first of these centers, located at 15 Argentina Street, is dedicated to the distinguished hygienist Dr. Eduardo Liceaga, and was founded on November 1922 at #20 Colombia Street, (Dr. Espinoza de los Reyes was the first director of the center). As the unit became insufficient, it was moved in 1928 to a building of its own, at 62 Moneda Street.

Subsequently, on September 23, 1923, the Manuel Domínguez Hygiene Center was opened at 96 Violeta Street, also dedicated to this distinguished teacher. During the years 1922 through 1928, both the above centers functioned in Mexico City.

In a work read in 1925 by Dr. Espinoza de los Reyes at the National Academy of Medicine of Mexico, suggesting means to decrease childhood mortality and combat childhood morbidity, he maintained that our 28% childhood mortality, only in Mexico City, could not be decreased as long as the misery and ignorance factors would not be efficaciously attacked.

He proposed an extensive campaign plan and suggested on the convenience of creating a Child Hygiene Service that would depend on the Public Health Department to attack the problem, starting by centralizing and fostering activities against those factors, by increasing the number of the already established clinics, not only in Mexico City, but in the entire nation.

In 1929, the then head of the Public Health Department, Dr. Aquilino Villanueva, adopted the idea and submitted to consideration of the Citizen President of the Republic the need to add the Child Hygiene Service to the Public Health Department services, which had the purpose to increase population density and contribute to the comprehensive perfection of the child to attain a global improvement of the population.

President Emilio Portes Gil, with clear vision and wishing to contribute to the reconstruction of the country, accepted the Department Head's proposal and in May 10, 1929, he issued the following decree: "Article 1. The Child Hygiene Service is created, as a Public Health Department subordinate section that will be in charge of the Child Hygiene Public Health Federal Branch."

As a result, I was honored with the post of head of the Child Hygiene Service, to organize it and to guide these activities in favor of the mother and the child. The Child Hygiene Service comprises the following activities:

1. Headship of the Child Hygiene Service with its administrative section.
2. Child Hygiene Centers.
3. Department of Statistics.
4. Childcare School.
5. Domiciliary female inspectors.

On the occasion of the Child Hygiene Service organization and according to its general organizational plan, on May 7, 1929, the Juan Duque de Estrada Child Hygiene Center at 29 Juventino Rosas Second Street, in the Peralvillo neighborhood, and the Francisco P. de Carral, located at #404 13th Pino Street were opened.

On September 7, 1929, the Luis E. Ruiz Center, located at kilometer 6 of Calzada de Balbuena was opened, which came to alleviate a great social need in this rather populous neighborhood, and where pregnant women and their children receive medical consultation every day.

With the purpose for these centers to be implemented as best as possible, one more center was built in special and acquired buildings in the Doctores neighborhood, at the corner of Garciadiego and Vértiz streets, which was opened on October 30, 1929 with the name of Juan María Rodríguez.

The last Child Hygiene Center that was opened to the public was the Manuel Gutiérrez Center, on January 13, 1930, in a specially built, own building. This center is located at 35 Santa Julia 4th avenue.

All centers had a sign that read:

*Department of Public Health Child Hygiene Center
(name of the center).*

Free for pregnant women and children younger than 2 years.

Hours of admission: from 8 to 10 a.m.

Mexico

A few notes with regard to organization and functioning of the centers.

The personnel of these offices is divided into technicians and administrative clerks, with the first category

including a doctor specialist in early child care and pediatrics who acts as the director, three specialist physicians in charge of the prenatal and postnatal hygiene department, as well as the laboratory, a midwife and registered nurses as doctors' assistants.

When a woman attends to the center's administration office asking for care, she is informed that the services are absolutely free of charge, and she is only required to be pregnant, to attend hence forth within admission hours and in the best cleanliness conditions. She is then seen by the doctor, who takes her history, and then she is seen by the nurse, who asks for a urine sample to investigate for albumin and glucose. Blood pressure taking is important.

When pregnant women attend for the first time, a 10 cc blood sample is systematically obtained by venous puncture and sent to the Public Health Department central laboratory in order to gather data on the Wassermann reaction.

In case the reaction yields a positive result, or clinical examination has demonstrated the presence of syphilis, the patient is scheduled for periodic visits to receive treatment, generally consisting of an arsenical in combination with bismuth.

Children attending postnatal care visits are generally children of mothers who were attended to at the prenatal care departments, and reported to the National Association for Children Protection Maternity (Las Lomas Maternity), to some official maternity or any maternity near their domicile, return to the center in order for the doctor to monitor their development and instruct the mother on the care to protect him/her.

Unfortunately, the mother frequently doesn't bring the child as advised since the first time she leaves out to the street, but she waits until the child gets sick to bring him/her for curative medical care. Maternal ignorance about monitoring the baby before he/she gets sick forces us to receive, much to our regret, a considerable number of sick children of these mothers or from other mothers who did not receive attention at the prenatal care office. Fortunately, this number of children tends to decrease, and this favorable reaction is largely attributed to the education on hygiene and the constant and selfless work of our female social inspectors.

In her appointment with the doctor, the mother has to inform on relevant data related to her child: thus, among the personal data, if the child has a birth certificate, data on pregnancy evolution, type of delivery, hereditary background, collateral pathological history, type of nutrition, interrogatory on current status and

physical exam, blood count and it ends with the chapters on conclusions, treatment and nutrition.

Following on with the idea stated on the first lines of this work, and in order to help the mother fight her misery, which in many cases forces her to give her child inappropriate food in terms of quality, the National Association for Children Protection made its milk provision available for the Public Health Department, in order to supply mothers lacking the necessary resources with the food prescribed by the doctor.

When the treating physician arrives to the conclusion that there is a nutritional disorder due to the poor quality of the supplied food, and the mother states not having the necessary resources to acquire it, the doctor, through the center administration office, reports this to the Female Social Inspectors Department, in order to generate an inform on the economic conditions of the mother. If the investigation's result confirms there is poverty, the doctor, making use of the corresponding document, writes down in duplicate and signs the order for the milk provision to be supplied on a daily basis, for as long as he indicates. The mother is given a card that entitles her to pick up the food her child has to take at the center's administration office.

The centers have statistics offices in charge of collecting the monthly reports generated by the Hygiene Centers.

The presented data were taken from the first semester of 1925 through the last of 1929.

At the first semester of 1925, 12,212 medical consultations were given to women and 19,751 to children, that is, a total of 31,963, with total expense per consultation of \$2.78 and medication cost per consultation of \$0.27. By the end of 1929, women's consultations added up to 21,569 and those of children, to 60,656, for a total of 82, 225 for that year, with total expense of \$0.66 per consultation and \$0.12 as medication cost per consultation.

In total, in five years, 249,582 medical consultations were given, with 81,056 corresponding to mothers and 168,526 to children.

With regard to the personal history of women attending the centers asking for medical care, the percentage of multiparous women was observed to be larger than that of primiparous mothers; nearly 50% are comprised between 15 and 24 years of age and there were only 12% older than 35 years. The stage of pregnancy at first medical consultation was: first trimester: 20%; second trimester: 35%; third trimester: 45%. 43% had arsenic injected and 31% bismuth.

Among the observations made with regard to the children, the highest age frequency at first medical

consultation was between 0 and 3 months, and the lowest, from 18 to 24 months. Other data refer to legitimacy, whether they have a birth certificate, place of birth, care received by the mother, as well as pathological hereditary backgrounds of mother and child, current complaint and feeding systems.

The statistical data are an eloquent demonstration of the benefits of the prenatal care service provide by the Hygiene Centers; in addition, they indicate great intensity of work, especially with regard to propaganda on hygiene practices.

The Childcare School

The Childcare School technically trains doctors, domiciliary inspector nurses and nurse technicians who are to intervene in all functions at the Central Department of the D.F. Territories and States, different subordinate sections of the Public Health Department Child Hygiene Service.

Its work includes technically training the groups that develop activities in closeness to children (school-teachers, homemakers, nursemaids) and serves as a counselor to D.F. Territories and States' school authorities, in the creation of childcare programs.

The first course given by the Childcare School in September 1929 was a brief course and the regular course started on October 1929.

The program comprises 4 subjects: childcare and prenatal hygiene, early childhood care, notions on pediatrics and middle childhood childcare, and school hygiene.

During the months of January and February, a 4-week divulgation brief course was given to elementary school teachers, with an attendance of 22 students and an adequate program to the type of activities they perform, stressing specially on middle childhood care, general hygiene and school hygiene. In February, the course for female social domiciliary inspectors was opened, the program of which comprises: childcare, early childhood prenatal hygiene, general hygiene and social training of the nurse. Being a registered nurse and midwife is required to be admitted. The courses of both doctors and nurses have an 8-month duration.

Body of domiciliary inspector nurses

The Child Hygiene Service, at the Hygiene Centers, was intended to constitute, within a neighborhood, a place where the mother would receive not only medical therapeutic care, but also medical advice to heal and

prevent diseases and accidents, and these centers aimed to awaken in the spirits of people attending a feeling of trust in the group of doctors and nurses who perform their noble mission at the office itself in order for them to serve us as an introduction, making it easier for us to access the pregnant women or children's domiciles, in order to draw their interest not only on hygienic care measures following the instructions of the center's doctor, but also giving us the opportunity to practically teach at home the most elementary rules of hygiene, taking as core of action the benefits they report to a child whose parents observe them.

The body of female domiciliary inspectors disseminates the precepts of prenatal, postnatal, collective and social hygiene at the households, with the purpose to prevent the noxious environmental influence on the collectivity and very especially on the children's body. It investigates the reasons a woman or child has had to stop attending the center for medical consultation, treatment or injections. (We have named this group if female inspectors the reconquest group). The domiciliary inspector nurse, with a clear vision of the noble and elevated task to her entrusted by the Public Health Department, and understanding that by performing her duties she was going to prolong to the households' hearts the beneficent work of the Child Hygiene Centers, and feeling and making feel in the households that her work was not repressive or that she was not some sort of sanitary police, but that it is an activity of true altruism and well-understood love for children, which as an educational activity, is mainly targeted to the integration of our people that suffer the consequences of their ignorance and misery.

National Association for Children Protection

As head of the Maternal and Child Department, Dr. Isidro Espinoza de los Reyes proposed Dr. Aquilino Villanueva, head of the Public Health Department, the creation of the National Association for Childhood Protection.

Undoubtedly, the generous intentions of the Department's Head required, to be immediately carried out, going beyond the official sphere and, understanding the need to bring them to the grounds of private initiative, Dr. Villanueva entrusted the valuable idea for consideration to the distinguished lady Doña Carmen García de Portes Gil, who, showing signs of her well-understood philanthropic sense, promised her valuable collaboration and that of her distinguished

acquaintances for the crystallization of such a beautiful project in and Association for Childhood Protection.

The articles of incorporation for the association were signed in Mexico City at 11 hours on January 24, 1929, at the Chapultepec Castle, attending an invitation made by Dr. Aquilino Villanueva. An important number of wives of important civil servants and prominent businessmen, who contributed with funds to start the association for an amount of \$ 12,000, were present and offered their collaboration.

Dr. Isidro Espinoza de los Reyes spoke at that important meeting, and remembered some of the things that in Mexico have been done on the subject and in the course of his speech he presented different suggestions on the means that, in his opinion, are more appropriate to succeed in this task. After an extensive exchange of impressions, by absolute majority of votes, the decision was made to constitute a permanent private welfare association, under the name of National Association for Children Protection, the purpose of which will be to protect the child from the physical, social and moral points of view. For the fulfillment of these purposes, the creation and support is proposed of: Hygiene Centers for the care of pregnant women, Maternity House, institutions known as "Drops of Milk", Houses for preschool and school-aged semi-abandoned children, holiday camps, playgrounds, as well as organizing other activities deemed adequate.

It will promote the creation of similar institutions in all States of the Republic.

It will also try to collaborate with official institutions engaged in similar activities and with national and foreign scientific groups.

Two activities among others should be mentioned owing to their importance:

1. The milk provision service, which is intended to supply the Child Hygiene Centers with the food these institutions provide to children for whose mother breastfeeding is materially impossible, and obtain the food she needs for her child.
2. The Maternity Service is the continuation of the work that begins at the Child Hygiene Centers; its purpose is to provide adequate obstetric care to all women that, owing to their economic situation, cannot be efficaciously attended to at their own domiciles.

This way, maternal and perinatal mortality reduction is to be achieved.

The Las Lomas de Chapultepec Maternity House was opened on October 1929, and is located in a

property formerly occupied by the *Casa de Salud del Periodista*, at the corner of Montes Urales and Prado Sur. The maternity was transferred to the National Association for Childhood Protection by the Public Health Department.

"With the presence of Mr. Emilio Portes Gil, President of the Republic, and his distinguished wife, the opening ceremony was initiated and, in the opening speech, Dr. Espinoza de los Reyes said: 'Under the auspices of the National Association for Childhood Protection National Committee, and with the aid of all the country's powers that be, this maternity opens its doors to the benefit of the underprivileged class, which constitutes one of many barriers that have been proposed to be built in order to counteract our maternal-infant mortality rates. It is the continuation of the work that starts at the Hygiene Centers'. At the end of his speech he prophesized: 'A day will come when the causes of our maternal and early childhood mortality rates will decrease and we will occupy a decorous place among the most developed countries'."

During the Las Lomas maternity first 10 years of activities, the director was Dr. José Rábago, who simultaneously was chief of the Maternity Department of the General Hospital of Mexico (Ward 30). In a work entitled *Prenatal care at Children's Assistance Centers in Mexico City*, its author, Dr. Rábago, published an interesting statistical table (Table 1), since a group of 6,119 patients looked after at the Maternity Department of the General Hospital of Mexico is compared with a group of 6,992 women attended to at the Las Lomas Maternity.

On January 13, 1930, on the occasion of the opening of the building constructed for the Dr. Manuel Gutiérrez Hygiene Center, Dr. Espinoza de los Reyes recalled that the National Association for Children Protection supported the Las Lomas Maternity aided by an additional tax from a 1-cent postage stamp with the legend: "Protect the children. Be a Patriot", with the image of a mother sheltering a baby, in addition to donations by ministries and some private persons.

Page 342 of the book *History of pediatrics in Mexico* reads: "One more action of these joint works by the National Association for Childhood Protection itself and the Child Hygiene Service of the Public Health Department was the idea of trying to project them at national scope, with the first attempts being made trying to promote similar centers at different places of the Republic".

Incidentally, this National Association for Childhood Protection, under different names, philosophy, working

Table 1. Obstetric Care comparative chart

Total deliveries attended to	General Hospital*		Las Lomas Maternity†	
	6,199		6,992	
Vertex presentation		94.9%		97.3%
Pelvic presentation		3.9%		2.5%
Vicious presentations		5.1%		2.8%
Total operations	296	4.3%	194	2.9%
Abdominal c-sections	63	1.0%	37	0.5%
Use of forceps	101	1.5%	131	1.9%
Overall mortality		1.7%		0.2%

*Patients not receiving prenatal care.

†The comparative results shown by the table reflect the goodness of prenatal monitoring received by pregnant women who attended the Hygiene Centers and adequate hospital care during delivery and puerperium.

modalities and resources, has kept on functioning under the direction of the wives of successive presidents of the Republic (National Institute for Childhood Protection [INPI – *Instituto Nacional de Protección a la Infancia*], Mexican Institute for Children's Protection [IMAN – *Instituto Mexicano de Atención a la Niñez*], Family Comprehensive Development [DIF – *Desarrollo Integral de la Familia*]).

The activity continued but, in 1932, vicissitudes of politics made Dr. Isidro Espinoza de los Reyes resign to his position as director of the Child Hygiene Department, in disagreement with some actions established in the management of milk supply for the children that were not observed by unionized personnel in charge of the delivery.

After the above mentioned resignation, he devoted himself to obstetrics and gynecology private practice, to his clinical obstetrics lessons, to publish works and give lectures. He was founder member of the Mexican Society of Pediatrics and the Mexican Association of Gynecology and Obstetrics, in both as honorary member.

He continued with his concerns on female protection during the gravid and puerperal period, as well as on the protection of the child, especially during early childhood. This is demonstrated by his important collaboration to the *Code of childhood protection*.

Dr. Don Isidro Espinosa de los Reyes died on June 9, 1951, at 64 years of age. In a biographical sketch of the teacher on the occasion of his decease, the prestigious obstetrician gynecologist José Rábago

extensively described his work as an obstetrician gynecologist and said: "All these merits, which would suffice for his name to have a place in history as one of the most eminent obstetrics and gynecology teachers seem small compared to his enormous work in favor of Mexican mothers and children". In turn, the eminent pediatrician Antonio Prado Vértiz concluded his mourning prayer saying: "Mexican children lose their indefatigable and ardent champion, who died without the joy of seeing what he always longed for, a protected mother and child".

In conclusion, Dr. Don Isidro Espinoza de los Reyes gained the recognition that good, fair and creative men, who are always with us, who are not forgotten, who are continuously remembered deserve.

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