HEALTH INTERVENTIONS AND THE HISTORICAL INFANT MORTALITY DECLINE: THE MILK DEPOTS IN SPAIN (1890-1936)[1]

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Abstract

The role of public health has been a central topic on the classical debate about the historical mortality decline in Europe. One of these health initiatives were the Milk Depots. Spain set up those centres from the late 19th century until the beginning of the Civil War. The goal of this paper is to evaluate the effect of this health intervention on the infant mortality decline during this period. This study works out three kinds of sources: Statistical Yearbooks, Official documents and local records produced by the same Milk Depot. It analyses data available for all the country and one local case such as the Barcelona's Milk Depot (1904-1935). The main methodological issue deals with the measurement of the effect of the Milk Depot activities on the pattern of changes of infant mortality. Results suggest that Milk Depots have a positive but quite moderate effect on the improving of overall levels of child survival.

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1. Introduction

The role of public health has been a central topic on the classical debate about the interpretation of the historical mortality decline in Europe. The main health policies include three kind of different interventions: medical and clinical practices (e.g. vaccination), sanitation works (e.g. clean water technologies) and child nutrition. That last intervention was implemented by a large variety of health and clinical initiatives under the general rule of protection laws for children. One of these initiatives was the Milk Depots. Main industrial nations in Europe such as Germany, Great Britain and France set up a large number of these centres from the late 19th century until the beginning of the Second World War. They were the example to be followed by other countries like Spain.

The goal of this study is to evaluate the effect of this health intervention in the infant mortality decline before the Spanish Civil War. Physicians at that time –in fact, the first generation of Spanish paediatricians- were soundly convinced about the positive and significant effect of the Milk Depots on the improvement of child health. They were also worried about the limited number of this centres available to the population –particularly, the poor families- along the Spanish geography.

There is no regular statistical information for studying the role Milk Depots in Spain at a national level. Sources available cover three different kinds of documents: Statistical Yearbooks (local or national), Official reports (Ministry or provincial authorities) and Local records published by the same Milk Depot. Researches on that topic have studied Milk Depots in several Spanish localities (Madrid (Majan,1990), Alicante (Perdiguero-Gil and Bernabeu-Mestre, 2005) Gijon (Chamizo, 2005), Reus (Arnavat et alt, 1995), Menorca, Montilla-Sala 2008). Their approach has been more institutional and social than demographical. Population historians have stressed two features in the interpretation of the Spanish Milk Depots movement (Rodriguez Ocaña, et alt, 1985) . On one hand, that the low number of centres available –mainly located in urban places- do not allow to achieve any kind of significant improvement on infant survival at a national level and, on the other, that these institutions played a positive role in the diffusion of new hygienic practices related to breast-feeding and child nutrition in

general. However, it lacks an empirical evaluation of the consequences of those health practices on the infant mortality dynamics, at local or national level.

From a more European perspective, Milk Depots has been studied from different points of view, according to the health profile of this institution in each country (Rollet-Echalier 1990). It is well known that Anglo-American and French did not share the same health strategies in order to improve child nutrition (Rollet 1995, Ferguson et al. 2006). A specific demographical assessment of the Milk Depots (or similar institutions) activities in other European countries are not always available.

Because of the variety in quantity and quality of data available methodologies to be applied in this study are quite standard. The main methodological issue deals with the measurement of the effect of Milk Depot activities on the pattern of changes of infant mortality.

This paper has three main sections. First, it introduces levels and trends of infant mortality in Spain between 1900 and 1930, the views of physicians about how to reduce them and their proposals for improving breast-feeding with the foundation of Milk Depots. Second, it offers a general statistical view about the relationship between Milk Depots and levels of infant mortality in Spain between 1914 and 1923. Third, it analyses the case of the Barcelona's Milk Depot (1904-1935). Data come from the Statistical Yearbook of the city and monthly reports published by the city Council.

It offers a reconstruction of mortality and morbidity trends and other health indicators during infancy through along a period of fast and deep mortality change.

2. Infant mortality in Spain: trajectory and medical response (1900-1935)

In terms of its health transition compared to the most advanced European countries Spain is a case of "latecomer" to the process of epidemiological transition. Spain would have to wait until the 1960s (Table 1) for its mortality rates to converge with European mortality rates as a whole. Infant mortality remained beneath the figure of one hundred deaths per thousand live births since the 1940s. In around 1930, the structure of the main causes of death was characterised by the predominance of infectious and childhood diseases. In the case of the infant population, during the first half of the 20th century two groups of diseases were responsible for more than fifty percent of total deaths. These were deaths resulting from diseases of the digestive tract and the

respiratory tract. Table 2 displays the corresponding values and the associated percentage distribution of both types of causes of death. These results show how the general trend towards improvement in survival levels until the age of five came hand in hand with the corresponding reduction in the risks of dying due to a digestive disease. Thus, while in 1906 this risk was 60 percent higher than the risk of dying due to a respiratory disease, in around 1950 it was seven percent lower. As shown by the mortality statistics, within this predominant group of causes of death, diarrhoea and enteritis were the most common. In 1930, they alone accounted for thirty percent of all deaths of children under the age of fifteen.

Throughout the second half of the 19th century, Spanish physicians interested in "social hygiene" began to examine the causes of the high infant mortality rate (Rodriguez Ocaña, 1996, 1999). Some of the main reasons they pointed to were the unhealthy conditions of homes, poor eating habits and inadequate childcare (especially amongst working mothers). This diagnosis also linked infant mortality to the poverty in which a vast part of the Spanish population lived. Of these three factors feeding came to take centre stage in medical concerns. A growing number of studies being published diagnosed the fact that the aetiology of the main cause of infant death at that time, diarrhoea and enteritis, arose from the poor feeding practices of newborns. Along these lines, two types of negative habits were spotlighted: those related to nursing and those related to the weaning period. The institutional response to these situations during the first half of the 20th century followed different stages in the trends aimed at protecting children that arose in Europe (especially France), as well as the political and social history of Spain itself.

In the specific realm of children's feeding, in the early 20th century the main health care campaigns were aimed at creating Nursing Houses (*Casas de Lactancia*) and Milk Depots (*Gotas de Leche* in Spanish). Physicians designed those institutions looking for three main purposes: a) The struggle against wet nursing b) Promoting maternal breast-feeding. c) Changing hygienic practices related to child nutrition.

The logic of healthcare intervention in early 20th century Spain pursued two different yet complementary trajectories. One fit within a clinical perspective, while the other was social in orientation, albeit inspired by eugenics, just like in many European countries at the time. An overview of the development of digestive diseases is presented in an attached diagram (Graph A). Spanish doctors at the time were aware of the existence of the different stages and conditioning factors of this sort of disease, of which

deaths due to diarrhoea and enteritis were the main group. However, modern knowledge of the aetiology of diarrhoea was developed in the 1940s. In the early decades of this century, tallying the amount of bacteria present in cow milk had gained ground as a standard practice for quality control of milk in both Europe and North America (Lee, 2006). In this way, the most effective capacity for action, as shown in the diagram, was preferentially concentrated in interventions aimed at lowering the prevalence of disease. There did not seem to be widespread consensus about therapies available at that time to lower the number of deaths. At least in Spain, the strategy pursued once the disease had been declared seemed to depend more on the medical schools or on the application of ad hoc remedies. The articles in several children's medical journals from the period (such as "La Medicina de los niños", (Reche Andrés 1981)) bear witness to the presence and successive discussion of a variety of alternatives. In contrast, there was more agreement on the strategy aimed at stopping the succession of episodes of diarrhoea, as the Milk Depots were a model of intervention with more or less standardised guidelines. Nor should we forget that the knowledge and medical technology available at that time prevented doctors from acting on all the risk factors related to the mothers' state of health.

The second trajectory was socially oriented and pursued a selective strategy (see Graph B). Despite the fact that the child welfare movement in Spain supported protective measures for the entire child population and their mothers, within a movement of the medicalisation of motherhood that spread throughout Europe and America (Appel, 1987), in the specific Milk Depot approach a priority target population was chosen, namely the children of poor families. This was a strategy that combined the quest for improvements in their survival rates by controlling their food intake during breastfeeding, that is, the direct effects, with the spread of new hygiene practices among the rest of the population, which in the graph are called the indirect effects of this activity. Doctors understood that by acting on this group at the highest risk, progress could be made in lowering the overall child mortality rate.

3. **Milk Depots and levels of infant mortality in Spain (1914-23).**

The number of Milk Depots in Spain compared to the populations of nearby countries like France and Germany in the first third of the 20th century, a phase of rapid expansion around Europe, was quite small. Estimates say that in around 1930 there were about 45

or 50 depots (Rodriguez Ocaña et al. 1985). In Spain there are no regular or centralised statistical records of their number and evolution. As they depended on local initiatives, the information available tends to come from the testimony of doctors and the monographic publications that these centres issued. The only two sources of statistics that seem to be available to help us get a somewhat global view of their distribution and effect on the child population are "Los Nuevos apuntes para el estudio y la organización de las instituciones de Beneficencia y Previsión" (New Notes for the Study and Organisation of Charitable and Prevention Institutions) published by the Ministry of Governance (equivalent to a Ministry of the Interior in today's government) in 1915, and the Statistical Yearbook of Spain for the years 1916 to 1923. The first source contains an inventory of both Milk Depots themselves and of other institutions charged with caring for children while breastfeeding. The list of Milk Depots cited dovetails with the one provided by other authors from this period, as does the observation, especially in the largest cities in Spain at the time, Madrid and Barcelona. The only absence noted is two centres founded prior to the date of publication: Guadalajara (1911) and Málaga (1906). There are a total of 26 centres inventoried, plus the two latter ones. The second source comes from the statistics on Milk Depots published regularly in the Statistical Yearbook between 1916 and 1923. They contain just two figures: the number of children fed and the total number of litres of milk distributed. Even though here it would be impossible to embark on a detailed assessment of the shortcomings of this source, we can advise that the main difficulty in using it lies in the interpretation of the number of children fed. In some provincial capitals the total number of children tallied does not seem to dovetail with the actual child population.[2] In fact, an exercise in comparison between the series of children treated at Milk Depots and the statistics on the same institution in the city of Madrid, also published in the statistical yearbook, reveals the existence of discrepancies between both sources. While the total number of litres of milk consumed is faithfully stated, the tally of children treated is not. Therefore, with the goal of being able to use these figures, we have had to introduce an assumption as to the average length of treatment of breastfeeding children

[2] For example, in the city of Tarragona, the yearly average number of children treated between 1918 and 1923 was 3,650, whereas the average number of births per year was only 553.

at the Milk Depots.[3] Both sources make possible several simple exercises in statistical assessment with the purpose of calibrating their possible impact on levels of child mortality, in this case associated with diarrhoea and enteritis.

The first observation is shown in Tables 3A and 3B, which show the average mortality rates of children under the age of two from diarrhoea and enteritis in the provincial capitals between 1919 and 1921. As can be seen, the differences in this rate are slightly higher in the places without this institution; however, the magnitude of this difference is not statistically relevant (p-value: 0.085). Thus, in light of the mortality levels due to these causes at the start of the 1920s, it is not at all clear that the presence of Milk Depots meant a significant improvement for the entire newborn population in the provincial capitals. Even if the difference is observed not in the short but in the middle term, shifting the initial comparison to the early 1930s (Table 3B), they are still not statistically justified (p-value: 0.119). However, these results should not come as a surprise if we bear in mind the nature of these institutions. As is logical, their capacity to directly influence the survival of the child population depended on the resources they had available, and these resources, which were limited, did not enable all the children to be covered or treated. The most accurate knowledge possible on the proportion of children who ultimately received the care and monitoring of the Milk Depots would be highly useful. In any event, it should also be recalled that in the large cities, there were most likely other institutions that cared for children during breastfeeding, such as the so-called "Casas Cuna" (Cradle Houses) or "Asilos Guarderías" (Nursery Asylums), as well as the institutions charged with caring for abandoned newborns. At some of these centres, the breastfeeding took place via wet nurses, whose health status must be have subjected to supervision.

Therefore, despite all these shortcomings, it might be useful to undertake a preliminary exercise in quantification for all the Depots referred to in the yearbooks and the statistics available for the Milk Depots in Madrid and Barcelona, plus others extracted from different monographs. Given the kind of figures available, it is impossible to draw

[3] The total milk consumption at each Depot would be equal to the product of the number of children cared for multiplied by the average consumption of each child and by the average number of days of treatment. If we assume that a) an average of all the values recommended in the feeding of nursing children from birth until weaning at around 750g per day, and b) an average of 180 days of treatment, the number of children treated can be calculated based on the total number of litres consumed.

up adjusted indicators (like quotients), rather we can only calculate the proportion of children admitted to or protected by the institution over the number of births in each city.

As Tables 4, 5A and 5B show, in the majority of cities this proportion would have been under ten percent. Therefore, it seems exceptional that at that time more than 20% or 30% of the newborns would have had the expectation of being cared for during the nursing phase. Even though it is practically impossible to find out the percentage of newborns in what we could call high-risk groups in these cities, it does seem plausible to assume that with the percentages obtained, broad swaths of the child population would have been exposed to digestive diseases and their fatal consequences. Graph 1 shades any categorical statement on the dearth of effect of the Milk Depots on improvements in the mortality rates for diarrhoea and enteritis among children. The distribution of the points that relate the proportion of children fed with the mortality rates for diarrhoea in the capital cities suggests, as lines A and C show, that for a certain mortality level the town with a highest proportion of children receiving milk attained higher survival levels. This result suggests first that other factors came into play on the lethality of these diseases and that these factors remained outside the scope of control of these centres. Secondly, if we take into account the differences in the mortality rates, having a higher or lower proportion of children cared for would offer a comparative advantage. In very similar mortality conditions, supplementary feeding in proper hygienic conditions would raise the probability of survival.

4. The Barcelona's Milk Depot and the infant mortality decline in the city (1904-1935)

Infant mortality trends in Barcelona at the beginning of the 20th century were around 150 deaths per one thousand live births, a level close to the whole Spanish population and a little lower than the average child mortality for the provincial capitals –the only available measure of urban mortality (Graphic 2). From that moment until the 1920s Barcelona followed the Spanish trend, but through along that decade infant mortality decreased in an irreversible way. Around the mid 1930s infant mortality rates were beneath one hundred per thousand in Barcelona. Data on causes of death around 1905-07 show how communicable and infectious diseases represent around 35 per cent of all

deaths under 5 years old. Deaths by diseases of the respiratory and digestive tract were 27 and 29 per cent in the same age group, but in children under one year diarrhoea was the most dangerous disease: 35 per cent died. Decline in child mortality and the incidence of diarrhoea went together between 1920 and 1934. The average level of diarrhoea mortality rate in around 1910 was 46 per one thousand live births – the same in Spain- but ten years later it fell down reaching in the thirties just a half of that initial stage.

In 1890 doctor Francisco Vidal Solares founded an office devoted to treating children's diseases and educating mothers. Its main purpose was to help mothers with their breastfeeding problems. It is often regarded as the first Milk Depot in Spain, but it actually did not operate like this kind of institution. In the city of Barcelona, the first Milk Depot of this kind was created in 1903. That milk depot was under control of the city council. Budget and staff were provided by the political authorities. This institution was refunded around 1914 after opening a new building and reshaping all the medical specialities related to pregnancy and paediatrics. In fact, Milk Depot was integrated into a Nursing House.

An overview of the operation of Milk Depot can be gleaned from Graphs 3 to 7. They strive to capture the basic dimensions of the trajectory of this centre until the mid-1930s. They show the evolution of the population cared for by the Milk Depot, some of their characteristics such as the average admission age (Graph 5), the kind of food prior to admission (only artificially fed) (Graph 6) and the possible state of morbidity (Graph 4). There are also indicators showing the result of the intervention, at least the most basic ones, the rate of children cared for who died (Graphic 3) and the total amount of milk distributed (Graphic 7). All of this information enables us to flesh out a global vision of these decades of intervention. What we are interested in underscoring now is the basic trends in its evolution. These trends include a rising number of children treated, with a concomitant drop in their average age when admitted to the centre, and a gradual rise in the number of newborns fed exclusively with artificial milk before being admitted. From the standpoint of the results, the two main ones show here point to a rising consumption of milk and a drop in the frequency of children's deaths.

From the chronological standpoint, we should situate the behaviour of the Milk Depots within the context of a drop in infant mortality rates in the city, and in particular death from diarrhoea (Graphic 3). In this sense, we can highlight the substantial improvements in the survival rates of the admitted children starting in 1916, anticipating

a control over the overall mortality in the city as a whole that would still take years to come. The favourable results and overall functioning of the centre were stabilised in the first half of the 1920s. However, starting in the second half of this decade, while the city as a whole continued its irreversible arc of a drop in mortality (Graphic 2), the Milk Depot came to deal with not just a rising population of newborns but also, according to the indicators, ones with worse health conditions. A higher frequency of digestive illnesses was detected, in parallel to a rise in the number of admitted patients solely fed artificially. Despite this, the rise in the mortality rates among admitted patients was minimal.

A question as to the impact of this intervention on the improvement of the survival rates of the infant population in Barcelona is not easy to answer. The kind of information available cannot provide the details needed. In light of everything set forth until now, the direct effect could only have been limited, and the capacity to spread better child feeding practices among the affected population would be difficult to gauge. One possibility is to approach the answer through a simulation. That is, to recreate a trajectory showing a drop in the mortality rate based on certain conditions set beforehand, adjusted to the historical conditions documented, and then to introduce some change that enables us to compare the estimated and the observed trajectories. The difference between the two would enable us to find out the direction and magnitude of this intervention. Table 6 shows a summary of the characteristics and basic assumptions of this simulation, while Table 7 shows the results. This exercise basically assumes that all the deaths at the Milk Depots were due to a digestive tract disease and that the population group aided by the centre was children with a higher mortality rate due to diarrhoea and enteritis before the age of two. The demographic weight of this group is determined by the proportion of births that took place in the districts with the highest levels of mortality for this reason in Barcelona between 1907 and 1914. If we assume that in the historic trajectory all the treated children came from this zone, this would mean a percentage of protected children of 40%. Based on this, as can be seen in Table 7, the relative variations between the estimated and actual trajectory are calculated assuming first that the percentage of children receiving this care disappears or secondly that it rises until reaching 70% of all newborns. As can be seen, either way the effects are extremely moderate, in neither case surpassing three percent.

5. Conclusion

The Milk Depots received a great deal of support among the medical class specialising in children's medicine and among sectors of the population that supported their implementation. The initiatives were local, and in view of the problems of the resources and organisation of the medical care, their extent and number were quite likely limited. Many of the studies on Milk Depots in Spain have concentrated on the institutional factors and/or on the medical context behind them. This study, in contrast, has been specifically oriented towards the assessment of this healthcare initiative in terms of its impact on improving the infant survival rate. A study of the statistical information available has enabled us to see that one of the main limitations faced by the Milk Depot movement in Spain was its low capacity to protect broad swaths of the infant population. The estimated percentages for the provincial capitals were low for the most part, under ten percent. Given the important proportion of the rural population of Spain during the first third of the 20th century, the upshot of this would have been a very low level of protection for newborns as a whole. An analysis of the scarce figures available for the population as a whole suggests that the existence of Milk Depots does not seem to have made a major impact in either the short or long term on controlling the prevalence and lethalness of one of the main illnesses attacking the digestive tract that affected children, namely diarrhoea. If they had any effect, it seems to have been complementary or subsequent to the effects of other factors.

Given the fact that the site of this kind of intervention was cities, we studied the statistical figures from the Milk Depot in Barcelona. Through these figures we have explored the influence of this institution and have tried to assess its capacity to improve the welfare of the infant population in the city. With this purpose in mind, we conducted a simulation exercise. This simulation was based on the conditions observed in the city prior to 1914 and it quantified the impact that changes in the levels of protection of the group at a higher risk of infant mortality might have had on the drop in the mortality rate due to digestive tract diseases. According to the simulation, their ultimate impact would have been quite modest. However, an observation of the behaviour of the indicators obtained from the statistical information published enables us to see how the Milk Depots might have treated sectors of the breastfeeding population at a higher risk of contracting diseases of the digestive tract and done so successfully. In this sense, and in comparative terms with other Spanish cities, this trajectory followed by Barcelona

might be exceptional, although perhaps the city of Madrid might have also shown similar behaviour. In contrast, in other places, this is over much of Spain, the same cannot be claimed.

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TABLES AND GRAPHICS

Table 1

Comparative indicators of mortality

Average life expectancy at birth Areas in Europe				
Zones	**1850-60**	**1900**	**1930**	**1960**
Northern Europe	43.3	54.2	61.2	71.9
Western Europe	38.9	51.3	59.3	70.6
Spain	30.5	41.7	50.0	69.2

Infant mortality rate (IMR) and period when it dips below 100 per thousand		
Zones	**1900-IMR per thousand**	**Period**
Northern Europe	117.75	Between 1880-1920
Western Europe	172.8	Between 1909-1927
Spain	202	1944

Sources: Data from 1850-60 (Lee, 1979); remaining data (Casselli, Mesle, Vallin, 1999

Table 2
Causes of death

Mortality of children under five due to selected diseases per thousand			
Diseases	1906	1932	1950
Digestive tract	98.4	61.6	22.74
Respiratory tract	60.8	47.3	24.45
All diseases	321.7	186.2	97.16
Mortality of children under five due to selected diseases (percentage distribution)			
Diseases	1906	1932	1950
Digestive tract	30.6	33.1	23.4
Respiratory tract	18.9	25.4	25.2
Remaining diseases	50.5	41.5	51.4

Source: Spanish Vital Statistics

Table 3 A

Milk Depots before 1915 and mortality levels from diarrhoea (1919-21)

Provincial Capitals

Milk Depots (MD)	Provinces number	Mean	Std Deviation	p-value
With M.D.	26	104.87	39.76	0.085
Wihout M.D.	23	85.36	37.45	

Table 3 B

Milk Depots before 1915 and mortality levels from diarrhoea (1928-30)

Provincial Capitals

Milk Depots (MD)	Provinces number	Mean	Std Deviation	p-value
With M.D.	26	73.03	33.37	0.1187
Wihout M.D.	23	59.68	22.83	

p- value estimated by one way analys of variance and regression

Table 4

Proportion of children fed in provincial capitals (over total births)

Interval (%)	Number of capitals
< 5	13
5--9	9
10--14	4
15--19	3
> 20	4
Spain-mean	8.24%

Table 5 A

Newborns addmitted over total births in Madrid and Barcelona (Only Milk Depots)

Periods	Madrid (percentage)	Barcelona (percentage)
1915-19	6.17	5.06
1920-24	8.23	6.28
1925-29	8.14	6.05
1930-34	9.31	7.28

Table 5 B

Newborns addmitted over total births in urban localities (Only Milk Depots)

City	Period	Percentage
Reus	1923-34	31
Lérida	1918-24	31
Huesca	1927-31	21
Alicante	1928-30	6

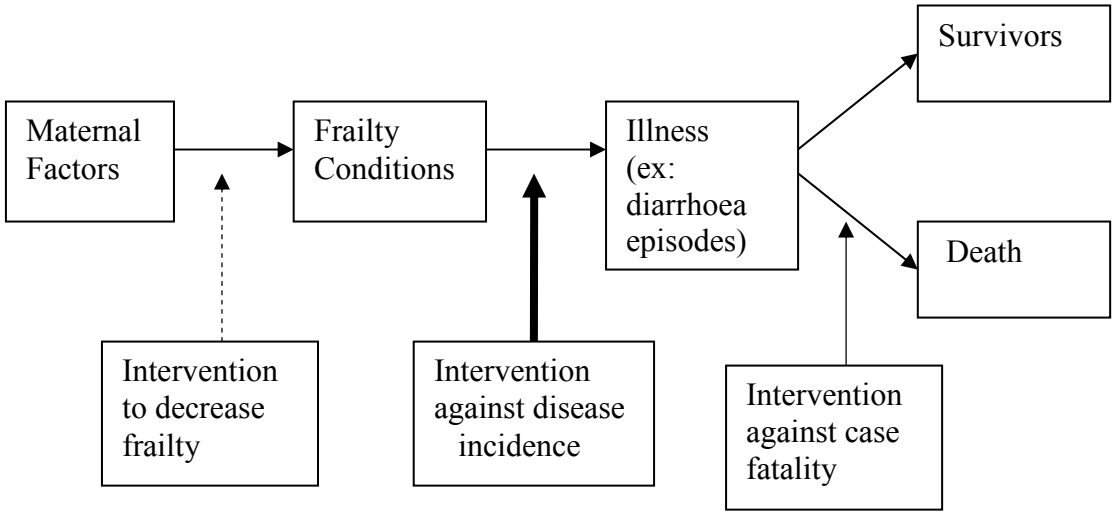
Table 6
Milk Depot and Infant Mortality Decline in Barcelona (1914-1935)
(Infant Mortality by Diarrhoea)
Simulation assumptions

Items	Observations
Mortality rate by Diarrhoea in Barcelona	Mortality rate is a weighted average of mortality rates in four groups of children
Mortality groups:	Observed levels of mortality from this disease in Barcelona Districts (1907-14)
High Level:	Mortality rate: 82 per thousand 17 per cent population < 2 y. in the city
Mid-High	Mortality rate: 66,5 per thousand 36 per cent population < 2 y. in the city
Mid-Low	Mortality rate: 49 per thousand 33 per cent population < 2 y. in the city
Low Level	Mortality rate: 39 per thousand 14 per cent population < 2 y. in the city
Population structure	No change.
Mortality decline From 1907 to 1935	Simultaneous in all groups but at different rates:
High Level Group	-59 %
Mid High Group	- 69 %
Mid Low Group	- 69 %
Low Level Group	- 86 %
Target population: High Level Group Children deaths < 2 y.	All deaths in the Milk Depot are from digestive tract diseases.
Starting level of protection: 40 p. cent births in this group	Simulation calculates departures from the observed trend according to different degrees of change in the starting level of protection

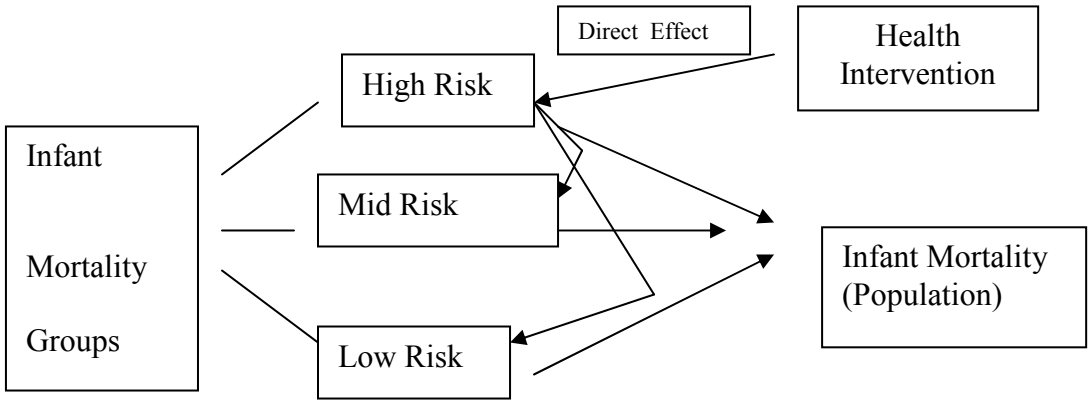
Table 7
Milk Depot and Infant Mortality Decline in Barcelona (1914-1935)
Results

Protected Children Percentage High Level Mortality Group	Difference: estimated-observed (percentage)
0 %	+ 2.16 %
10 %	+ 1.58 %
20 %	+ 0.98 %
30 %	+ 0.41 %
40 %	0%
50 %	- 0.77 %
60 %	- 1.35 %
70 %	- 1.94 %

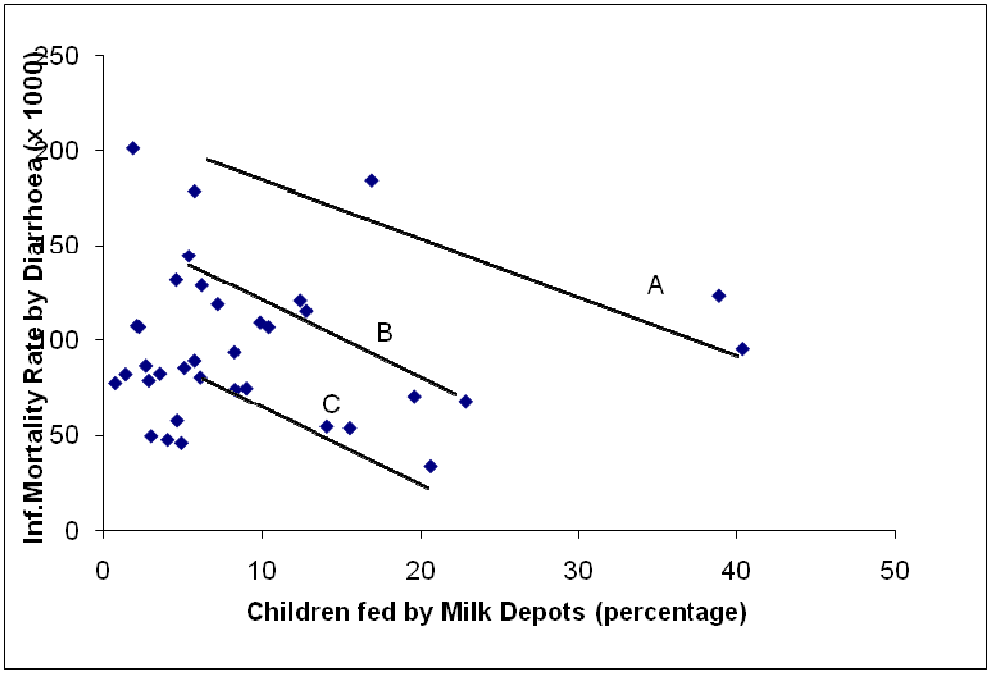
Graph A



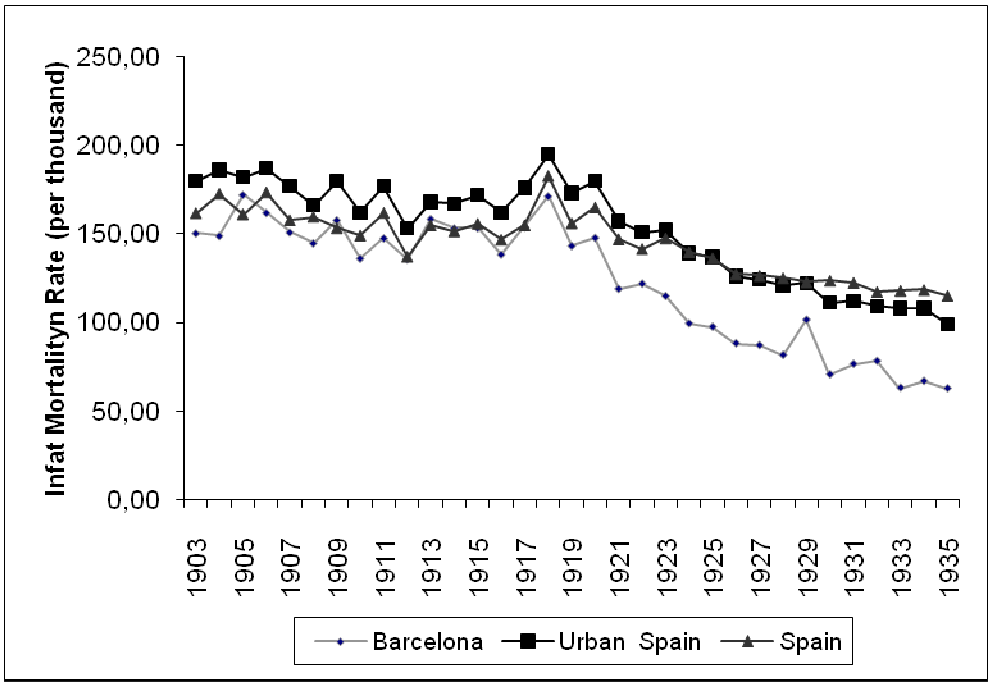
Graph B

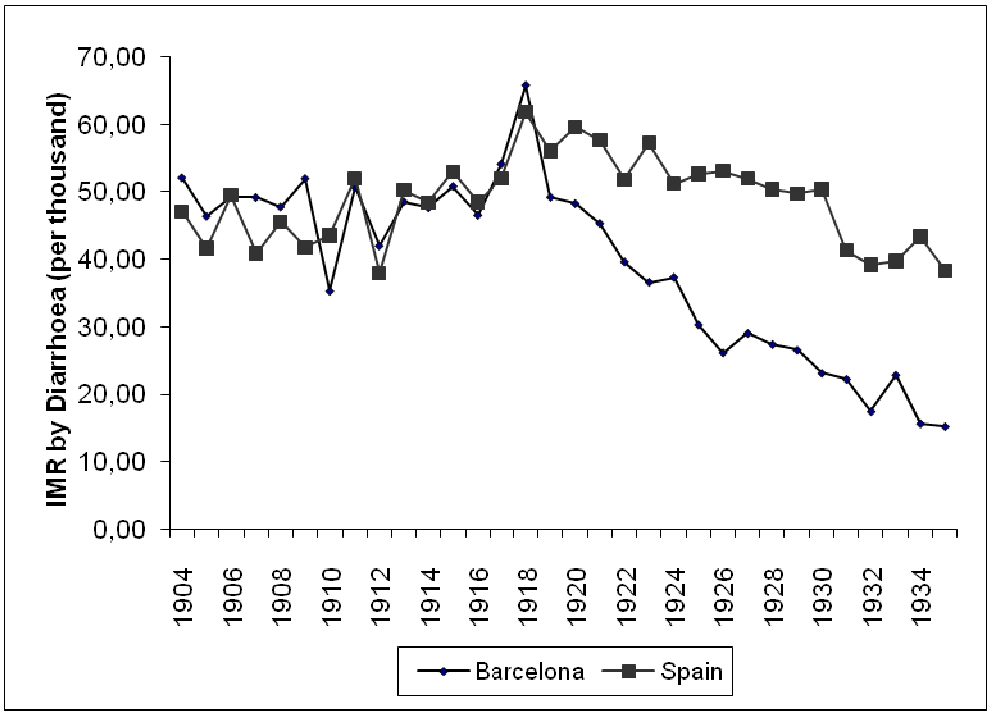


Graphic 1
Spain 1918-23
Children fed by Milk and Mortality rates by Diarrhoea
(provincial capitals)

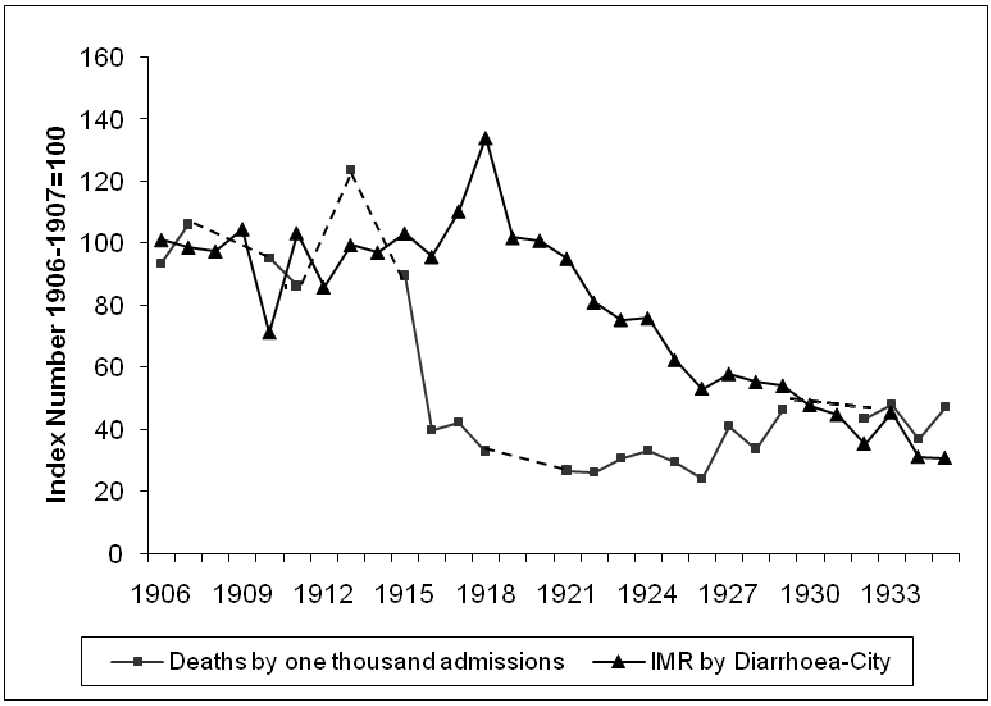


Graphic 2
Infant Mortality in Barcelona and Spain (1903-1930)

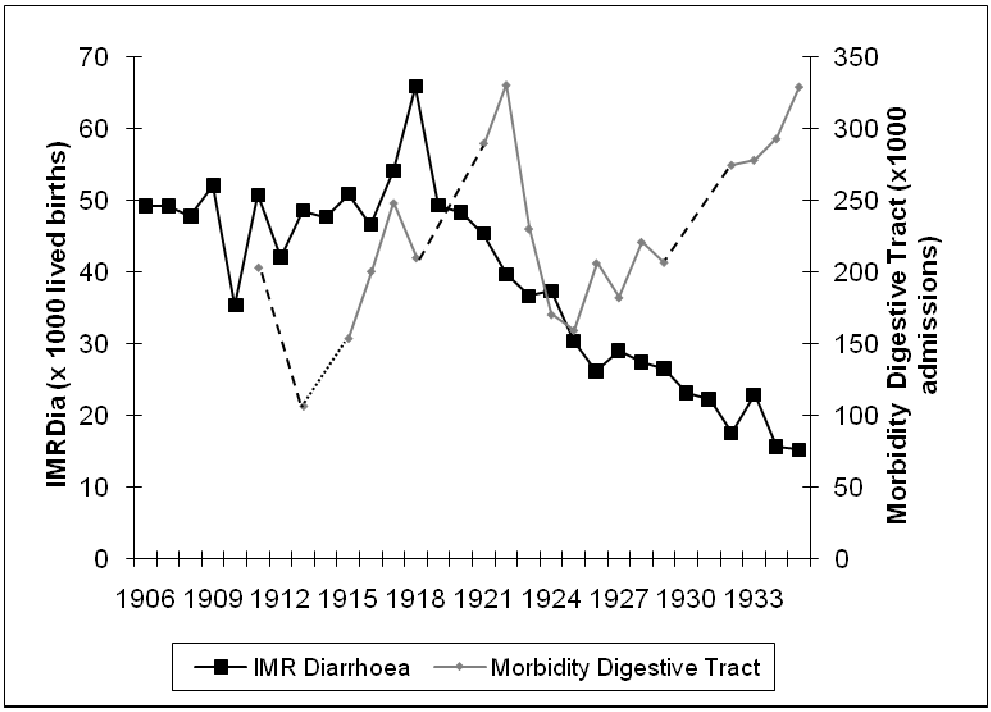




Graphic 3
Infant Mortality Indicators in Barcelona city and the Milk Depot

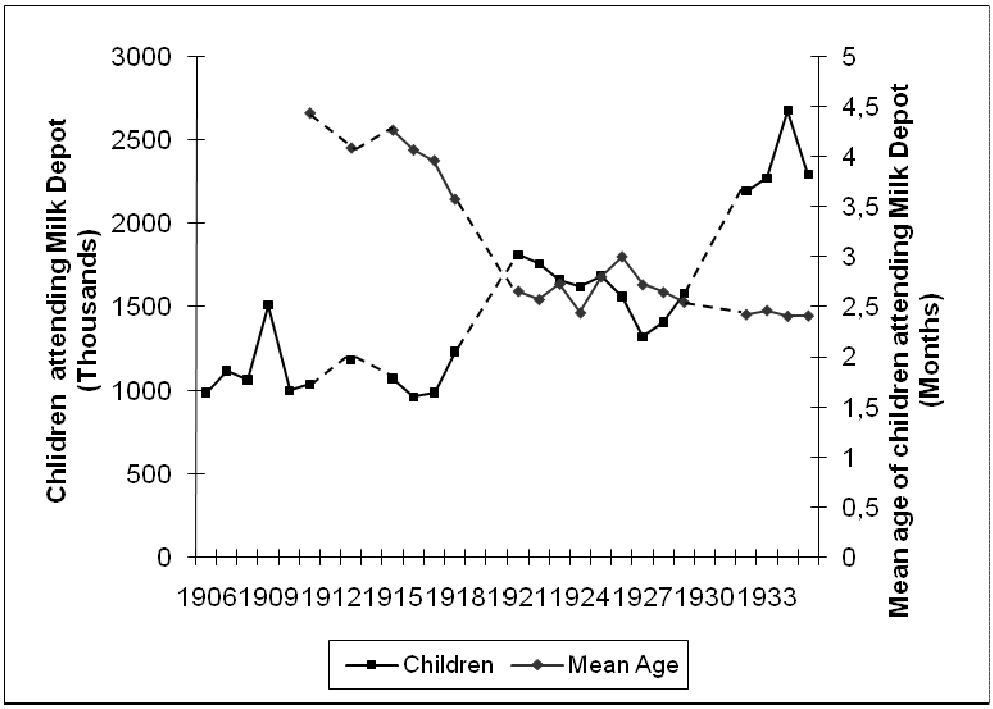


Graphic 4
Infant Mortality by Diarrhoea in Barcelona city and Disgestive tract morbidity in the Milk Depot



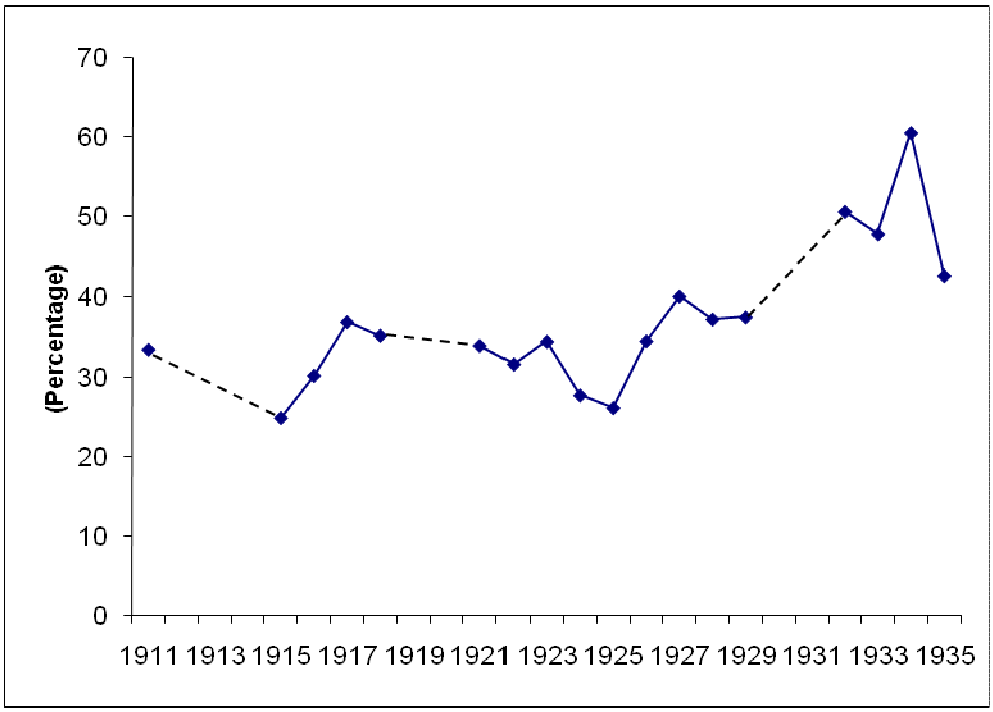
Graphic 5

Population attending the Milk Depot



Graphic 6

Children attending the Milk Depots. Artificially Fed.



Graphic 7

Milk provided by the Milk Depot