

INFANTILE MORBIDITY AND MORTALITY IN PORTO RICO *

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In this Congress of the American Nations, devoted to the problems of Infancy and of childhood, a report submitted to the Section on Hygiene concerning the Infant Hygiene situation in an American island of especially interesting conditions could not be lacking.

Porto Rico, a tropical island, America's advanced guard in the Old World route, populated by a people of identical origin with that of the Spanish Main had a specially close relationship until a quarter of a century ago, with this island of Cuba. For over a quarter of a century Porto Rico has been under the Stars and Stripes; ten years ago United States Citizenship was conferred upon its inhabitants, and its relations, its commerce, its intellectual intercourse, its dealings with the rest of the world are all conducted through its articulation to the northern brotherly people of the Continent whose robust vital rhythm has been transmitted to the Island people so as to induce great transformations, awaken unknown anxieties and engender a marvellous intensity in the course of life.

A very dense population; perpetual domestic peace; observance of the virtue of work; affected by the rebounds of social phenomena arising all over the world, how have this people conducted themselves in the face of the great Industrial Revolution; how, in the face of the modern rural migratory movement in quest of urban life; in the face of the economic instability of the post-war period?

This is not the occasion for such topics and they will be considered only in so far as they affect child life or the health of childhood.

Figures relating to Infantile Mortality in Porto Rico and their apparent causes during the years 1922 to 1927 show that we had 39,376 infant deaths (an average of 147 per thousand live births) of which 12,313, approximately one-third, thirty-one per cent, were given as due to diarrhea and enteritis; 7,126 (eighteen per cent) as due to diseases of the respiratory tract (bronchitis, bronchopneu-

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monia and pneumonia) and 6,915 (seventeen per cent) due to congenital debility.

The only important preventable contagious diseases were tetanus neonatorum, (2,543, or six per cent) and malaria (1,246, or three per cent). We do not believe that all those deaths ascribed to diarrhea and enteritis were actually caused by such and it may be plausible to think that the cause for this disturbance is not one, but varied. But in spite of all distinctions, the figures are so huge that we are forced to conclude that the dietetic regime in infancy is fundamentally wrong among the large majority of the Porto Rican people.

This belief is strengthened when we consider the distribution of said mortality in different periods within the first year of life.

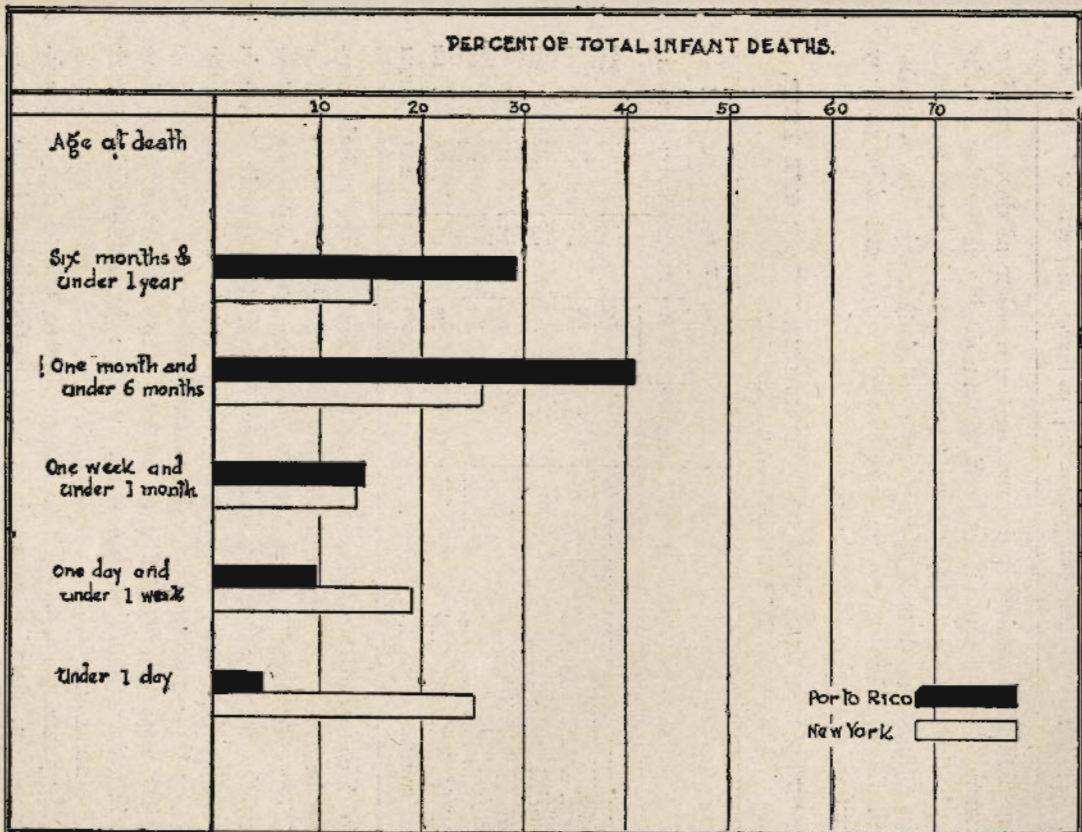
**INFANT MORTALITY FOR THE YEARS 1924-25, 1925-26, 1926-27.
PORTO RICO**

Age groups	1924-25		1925-26		1926-27	
	Deaths	Percentage of total deaths under one year	Deaths	Percentage of total deaths under one year	Deaths	Percentage of total deaths under one year
Under one hour.....	57	0.70	66	0.78	55	0.62
One hour and under one day	310	3.83	373	4.40	349	3.91
One day and under one week	801	9.88	822	9.69	867	9.71
One week and under one month	1,193	14.71	1,225	14.44	1,357	15.20
One month and under six months	3,532	41.34	3,468	40.89	4,024	45.09
Six months and under one year	2,396	29.54	2,528	29.80	2,273	25.47
Total.....	8,169	100.	8,482	100.	8,925	100.

Let us now consider the following figures for the State of New York (exclusive of New York City) and for the year 1924.

Age groups	Deaths	Percentage of total deaths under one year
Under one day.....	1,888	25.7
One day and under one week.....	1,422	19.4
One week and under one month.....	982	13.4
One month and under two months.....	1,024	13.9
Two months and under one year.....	2,023	27.6
Total.....	7,339	100.0

The figures as to relative mortality for the year 1924 in the State of New York (exclusive of New York City) and in Porto Rico are compared in the following chart and graph by which it may be seen that there is in Porto Rico a decided predominance of infant deaths after the first month of life; that is, when artificial feeding is more likely to be used.



Percentage of Infant Deaths occurring during certain subdivisions of the first year of life in Porto Rico (fiscal year 1924-25) as compared with those occurring in the state of New York (exclusive of New York City) at the same age periods during the year 1924.

Age groups	Relative mortality 1924	
	New York	Porto Rico
Under one day	35.7	4.83
One day and under one week	19.4	9.88
One week and under one month	13.9	14.74
One month and under six months	15.9	41.34
Six months and under one year	21.6	29.54
Total	100.	100.

**DEATHS IN CHILDREN UNDER ONE YEAR OF AGE, BY MONTHS,
FOR A PERIOD OF FIVE YEARS**

Year	Deaths											
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1922.....	692	645	657	758	690	533	842	694	619	607	661	564
1923.....	561	527	546	553	596	448	658	470	491	541	607	668
1924.....	579	563	570	531	552	412	838	551	578	609	682	758
1925.....	696	595	762	659	765	916	955	751	599	686	698	755
1926.....	675	628	673	658	674	730	919	791	903	842	823	678

Especially interesting is the rise in the number of deaths during the month of July, much more marked than during the cooler months when the influence of respiratory diseases might be most felt.

The number of deaths in July from all causes coincides with the rise in the number of deaths from diarrhea and enteritis, as may be seen in the following table:

**DEATHS FROM DIARRHEA AND ENTERITIS, UNDER ONE YEAR,
BY MONTHS.—1922 TO 1927.**

Months	Years				
	1926-27	1925-26	1924-25	1923-24	1922-23
July.....	321	288	254	241	300
August.....	265	227	176	183	256
September.....	302	166	173	137	213
October.....	275	223	162	190	197
November.....	271	202	185	177	231
December.....	214	228	191	226	204
January.....	208	195	164	164	200
February.....	166	172	147	149	188
March.....	227	168	195	162	158
April.....	239	207	192	163	155
May.....	242	215	223	154	177
June.....	260	248	186	155	172
Total.....	2,980	2,539	2,248	2,097	2,451

To those who recognize the relation that socio-economic conditions have to feeding habits as well as their relation to health conditions: faced with such high infant mortality; with such rises during the warmer months; with the fact that the main cause is gastro-enteritis; that this cause of death rises also at the same period as the general rate for infant mortality; and faced with the fact that most infant deaths occur in Porto Rico at a later date than in other countries, the main problem in child-welfare work must be apparent.

Sixty years ago a wise Porto Rican scholar, one of those remarkable men who stated our case before the metropolis of those days—

the needs and grievances of Cuba and Porto Rico—a comrade then of Morales Lemus, of Pozos Dulces and of Azcarate; our Don José Julián Acosta, attempting to read into the future of his people said prophetically, "Since our population augments at a rate of three per cent per annum, at the end of this century, if no event stops it the Island shall have a population of over a million. A beautiful future which should not dazzle us but cause us to be foresighted. Population is subject to unchanging laws. So, since that population shall live by its own toil, the supply of working hands must of necessity be larger, and if we do not want it to undergo unspeakable suffering; if we do not want death to take care of re-establishing the equilibrium we should at the same time increase labor demand through more invested capital."

This remarkable prophecy was made in 1866 when Porto Rico had 583,308 inhabitants and its population was the most dense in the New World, with the exception of some of the Lesser Antilles. At the end of that century the Island had 953,243 inhabitants and to-day it has a population of 1,400,000 or 412.7 per square mile.

Acosta's admonition made sixty years ago is our pressing problem at the present time, a problem which so concerns us that it is the "leit-motiv" of our civic endeavors for the furtherance of new industries, for the placing of more capital at the service of the community, for the remedying of an evil which is more and more becoming a biological phenomenon, due to our high birth-rate and to the intelligent measures taken for the protection of human life, which needless to say is a credit to our public health organization.

In considering the question of infant morbidity and mortality in Porto Rico, it must be born in mind, as a fundamental fact, that the increase in population is a biological phenomenon, and that as Acosta said "death takes upon itself the re-establishing of the equilibrium when the rate of increase surpasses the possibilities of life within given limits of space." During the last five years our birth-rate was thirty-eight per thousand population, and our population continues to increase 1.6 per cent annually, according to the latest census.

We would not convey the idea that our infant mortality rate may not be reduced unless our population be reduced, but in order to make as considerable a reduction as is needed, the question is, shall we do it exclusively through a strenuous child-welfare program such as is now being carried forward or shall it be brought about also, and necessarily, by a certain social and economic progress, to be

attained by our own efforts and perseverance, intelligence and moderation; as a consequence of civic education, carried on conjointly with industrial and commercial development?

The indispensable educational measures could not be and have not been overlooked in our public-health work. They have been given a great measure of attention, as much as that given to the prophylaxis of contagious diseases by the use of the Schick test; the use of diphtheria toxin-anti-toxin; the isolation of cases of measles, and of chronic cases of tuberculosis, etc.; the distribution of free prophylactic packages to expectant mothers; general sanitation, etc. This work has been carried on with a eubiotic interest, and combined with it has been careful attention to dietetics in the Pre-natal and Baby Clinics of the Bureau of Social Medicine of the Department of Health.

At this point permit me to refer briefly to the organization of our Bureau of Social Welfare. Its five divisions known as Child Welfare, Tuberculosis Prevention, Venereal Diseases Prevention, Social Work and Public Health Nursing, form a well-coordinated public service. Since all are inter-related social problems, medico-social work follows definite routes with a minimum effort and a maximum yield. Thirty clinics take care of different sections of the Island. Thirty-six nurses work under a Superintendent of Public Health Nurses. Twenty-five physicians attend to the professional work. A Superintendent of Social Work with her assistants attends to the purely sociological aspects of the problems presented at the clinics, those varied factors which influence so much the mental and physical well-being of the clients. The work of the Bureau of Social Welfare begins with the expectant mother. She is instructed and looked after until her child is born, after which she is not neglected but taught how to care for the baby in the home and instructed to look to us for guidance in bringing it up. The mother and the child have the advantages of our educational program as carried out in the clinics until the child has reached school age. Vaccination against small-pox and diphtheria, are done at an early age and the incidences of nutrition are under constant surveillance during that very difficult period in the tropics. Educational films are exhibited to expectant mothers and Little Mothers' Leagues.

The following figures will give a fair idea of the work carried out in the various divisions of the Bureau of Social Medicine during the year 1926 to 1927:

Expectant mothers:	
New cases	2,020
Infants cared for:	
New cases -----	4,572
Visits by nurses -----	32,653
Social cases -----	875
Venereal diseases:	
Cases treated -----	1,453
Anti-tuberculosis work:	
Old cases under care -----	2,633
New cases -----	1,274

It is too soon to expect a decided influence from this work, which was begun only four years ago, has been in the course of development during that period, and is in the process of still further extension. Other factors being present, the mortality rate has not been reduced as yet.

At the outset we mentioned the fact that our conditions are especially interesting and peculiar; here they are as I have presented them to you. Face to face with a biological phenomenon of over-population in a given territory, exists a modern public-health organization which functions among an intelligent and progressive people. What shall the result be?

This is the problem, this, the situation that awakens intellectual interest and gives rise, I am sure, to the human sympathetic interest of brotherly souls such as yours.

Let us look confidently into the Future. It is a question of Faith and Good Will.