

## Perspectivas de los héroes de la salud pública de la OPS / Perspectives from PAHO public health heroes

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*As part of its 100th-anniversary celebration, the Pan American Health Organization has named 12 persons as “Public Health Heroes of the Americas” in recognition of their noteworthy contributions to public health in the Region of the Americas. Over the course of this year, the Revista Panamericana de Salud Pública/Pan American Journal of Public Health will be carrying pieces written by or about these heroes.*

*Como parte de la celebración de su Centenario, la Organización Panamericana de la Salud (OPS) ha distinguido con el título de Héroes de la Salud Pública a 12 personalidades que se han destacado por su valiosa contribución a la salud en el continente americano. A lo largo de este año, la Revista Panamericana de Salud Pública/Pan American Journal of Public Health publicará una serie de escritos de los mismos galardonados o acerca de ellos.*

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### Ruth Rice Puffer: Highlights of a rewarding life<sup>1</sup>

Dr. Ruth Rice Puffer worked for more than 50 years as a biostatistician and public health professional. While she is perhaps best known for work she did in her position as the Chief of the Department of Health Statistics of the Pan American Health Organization (PAHO), Dr. Puffer had a distinguished career and made significant scientific contributions throughout her professional life.

While on the PAHO staff, she was the principal investigator for two large research projects, the Inter-American Investigation of Mortality (in adults) and the Inter-American Investigation of Mortality in Childhood. Even more than 25 years after they were published, the books (1–4) that resulted from those research studies are still considered to be groundbreaking, and they have had an undeniable impact on health services throughout the Western Hemisphere and in other parts of the world as well. The books are “classics in scientific literature,” noted an article that reported on her being named as the first winner, in 1978, of an award that was established to recognize individuals who have made outstanding contributions to the improvement of health in the Americas (5). That award, the Abraham Horwitz Award, is granted each year by the Pan American Health and Education Foundation (PAHEF), which is a PAHO partner organization. When he presented the award to Dr. Puffer, PAHEF President Dr. Abel Wolman said: “Dr. Puffer is rightly considered a prime force in the development of vital statistics in the Americas in the last 25 years, indirectly through these health administrators who were her students and directly through her service as Chief of the Department of Health Statistics in PAHO from 1953 to 1970. Her example of intellectual honesty in science and her dedication have become legendary.” Her contributions to those two studies were a major factor in the decision to grant her the Horwitz Award.

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<sup>1</sup> Based on: Puffer RR. Highlights of a rewarding life [unpublished manuscript].

The first research study grew out of a research paper that Dr. Puffer and others had presented at a 1957 conference on atherosclerosis that was supported by the World Health Organization (WHO). The paper created great interest by showing low death rates from heart disease in Latin America. Some persons even expressed doubts as to whether the differences between high rates in the United States of America and the low rates in Latin America were real. The WHO conference recommended that comparative studies be done of death certificates in different countries in order to review the terminology in use and to promote comparable procedures of stating the underlying cause of death and of classifying these causes in accordance with the *International Classification of Diseases* text published by WHO.

Exploratory visits to the principal collaborators in the study of atherosclerosis in several Latin American countries indicated interest and support for the research recommended by the WHO conference. A proposal was developed for a research project in a number of cities in Latin America as well as one city in the United States and one city in the United Kingdom, in order to study the very high death rates from cardiovascular diseases in the two developed countries and to compare them with the low rates in Latin America. The project was approved by the National Institutes of Health (NIH) of the United States, the first time that the NIH had supported such an international, multicountry project. The primary objective was to provide an accurate and comparable account of mortality by causes in adults 15–74 years of age.

The investigation was carried out in 1962–1964, with Dr. Darío Curiel serving as the co-principal investigator. The findings were published in both English (1) and Spanish (2), and, to provide material for teaching and wide distribution, the volumes were also excerpted and released as short pamphlets. The results of the investigation made it clear that there really were wide differences in mortality from cardiovascular diseases that could not be accounted for solely by differences in classification. Many other serious problems, such as maternal mortality, were revealed by this comparison of mortality by causes in widely scattered areas. The findings from the investigation have been widely utilized and referred to in the scientific literature.

The second major project, the Inter-American Investigation of Mortality in Childhood, was carried out with funding support from the Agency for International Development of the United States. The plan was to collect data on all deaths under 5 years of age in 13 locations in Latin America, in one location in California, and in one location in Canada. The results pointed to significant health problems in Latin America, including previously unknown epidemics of measles as well as limited breast-feeding in several areas. The grave problems of immaturity (low birthweight) and nutritional deficiency became known only through coding and analysis of the multiple causes. The two conditions were endangering the survival and hampering the growth and development of young children and probably of future mothers. The role of infectious diseases as underlying causes of death was clarified, with diarrheal disease being found as the principal cause, and measles being second in importance. The synergistic action of infectious diseases and nutritional deficiency needed to be taken into account in health planning.

In the investigation of childhood mortality, Dr. Carlos Serrano served as joint collaborator and was the joint author of the text, which was published in English (3) and in Spanish (4) in April 1973. The book as well as other, related papers have been widely cited by other researchers. The investigation spurred many other studies aimed at building a better understanding of the problems that were uncovered. In the city of Recife, Brazil, for example, researchers looking at the outcome of 25 000 pregnancies found a high incidence of low birthweights, especially among mothers who were under 20 years of age. Other studies done in Brazil, Chile, and Mexico helped to create a greater awareness of the important role of low birthweights in infant mortality in Latin America.

Dr. Puffer's work in public health, for PAHO and for other organizations, resulted in part from a decision she had made while working on her bachelor's degree in mathematics at Smith College, which is in the state of Massachusetts in the United States. In her third year at the school she decided that she wanted to use her mathematics major for a career other than teaching. She wrote letters to several persons who had hired Smith College majors in mathematics, and she obtained a position at the Harvard School of Public Health, in Boston, Massachusetts, working with Prof. E.B. Wilson, who was a professor of vital statistics. She worked with him for the summer of 1928 and then returned to work at Harvard after she finished her bachelor's degree. She remained there until 1933, when, upon the recommendation of Prof. Wilson, she accepted the position of Director of Statistical Service of the Department of Public Health of the state of Tennessee, which is in the south central part of the United States. Her work in Tennessee involved both administration and research responsibilities, an important combination that she utilized in her position in PAHO.

In 1942 Prof. Wilson suggested that Puffer return to Harvard to work on a doctoral degree in public health. For her thesis she used research data that she had helped collect over a period of several years in a study of familial susceptibility to tuberculosis in Williamson County, Tennessee. She had worked on that research project with Dr. Wade Hampton Frost, a professor of epidemiology at the Johns Hopkins University School of Hygiene and Public Health, which is located in the city of Baltimore, Maryland, on the east coast of the United States; Puffer also did postgraduate studies at Hopkins in 1937–1938. Puffer received her Harvard Ph.D. in May 1943. Being awarded the degree of doctor of public health without having a medical degree was an exception to the usual procedures, which the President of Harvard had to approve. That degree, Puffer would later say, was one of the highlights of her life and a step that led to many of her later activities and accomplishments.

In the spring of 1946, after she had returned to her position with the Tennessee Department of Health, Dr. Puffer was invited to go to Santiago, Chile, to give a series of lectures on practical statistics at the new School of Public Health there. Many of the program's faculty members had studied in the United States, including some who had received field training in Tennessee and had seen Puffer's approach of combining research and administration. The trip to Chile was the beginning of Puffer's work in international health. One of the persons in her class was Dr. Abraham Horwitz, who in 1959 succeeded Dr. Fred Soper as Director of the Pan American Health Organization. Puffer edited the lectures that she had given in Chile for a book on practical statistics published in 1950 by the McGraw-Hill Book Company (6).

That experience in Chile in 1946, as well as a subsequent three months spent teaching there in 1950, helped convince Puffer that she should accept an offer to be Chief of the Department of Health Statistics at the Pan American Health Organization. She began her full-time work for PAHO in 1953 and held that post until 1970.

After leaving the full-time position with PAHO, Dr. Puffer continued to work for the Organization as a consultant, and for other groups as well. In 1981, at the request of the United States Agency for International Development (USAID), she traveled to India to work on a report on infant and child mortality in that country. In 1982 she participated in a UN/WHO meeting in Bangkok, Thailand, where she presented a paper entitled "Experiences of the Pan American Health Organization using Death Statistics for Intensive Studies of Mortality." The following year, again at the request of USAID, she spent three months in Indonesia visiting various statistical programs and gathering material for a report on mortality in infancy and childhood there.

As a follow-up to the Inter-American Investigation of Mortality in Childhood, PAHO asked Dr. Puffer and Dr. Serrano to work together on a new book, on patterns of birthweights. The resulting text analyzed data from 22 studies of birthweight patterns from 15 countries around the world, in order to assess the impact of low and deficient birthweights on infant mortality. The book also discussed the benefits of health education, food supplements, prenatal care, and other health services in reducing the prevalence of low birthweight and infant mortality. The text has been a best-seller for PAHO, which is still selling the book in both its English (7) and Spanish (8) editions.

Besides being recognized by PAHO this year as one of the Public Health Heroes of the Americas and receiving the Abraham Horwitz Award in 1978, Dr. Puffer has been honored by a number of other organizations. In 1970 she received an honorary degree of doctor of science from Smith College, where she had done her undergraduate studies in mathematics. In 1977 the Tennessee Public Health Association granted her its Centennial Award for Outstanding and Dedicated Service in the Field of Public Health.

## REFERENCES

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### ***In Memoriam***

Ruth Rice Puffer

31 August 1907 - 2 September 2002

We regret to announce the death of Dr. Ruth Rice Puffer. She will be fondly remembered by her family, her friends, and her colleagues in the field of public health around the world. The family requests that persons wishing to honor her memory make contributions to a special endowed fund that provides scholarship support for students from outside the United States to study at the Johns Hopkins University Bloomberg School of Public Health. Contributions can be sent to: The Ruth Rice Puffer Fund, c/o Linda Smeyne, External Affairs, Johns Hopkins University, Bloomberg School of Public Health, 615 N. Wolfe Street, Baltimore, Maryland 21205, United States of America.