A REEVALUATION OF HEALTH PRACTICES IN A PHILIPPINE RURAL COMMUNITY

TIGLAO T V

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A report of a Type A Project

By

Teodora V. Tiglao

This Project report has been approved for final examination by the members of the student's Project Committee whose written approvals are on file in the Office of Doctoral Studies.

Herbert Walker, Chairman of Committee

James L. Malfetti, Member of Committee

Elizabeth C. Stobo, Member of Committee

Approved by the Committee on the Degree of Doctor of Education

Date DEC 3 1962

Submitted in partial fulfillment of the requirements for the Degree of Doctor of Education in Teachers College, Columbia University

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The "community", as Arthur Morgan has stated, "is the seedbed of human values. Only in the community are the values created that dignify living and make it spiritually significant." In public health work, the health worker is engaged in the scientific diagnosis and treatment of this same community that Arthur Morgan speaks of.

In 1950, with WHO/UNICEF assistance, the Philippines launched an intensive public health program in a rural setting through the Rural Health Demonstration and Training Center. After a decade of the implementation of such program it would seem important to evaluate its impact on the health practices of the people in the particular community for the guidance of future planners of not only public health programs but total community development programs as well.

It was the purpose of this study to:

1. Determine the changes in certain health practices of the people after a ten-year period of intensive public health program;
2. Identify the factors related to the changes; and
3. Study the dynamics of these changes.

The procedures followed in this study were as follows:

1. The establishment of base-line data which was obtained through the house-to-house survey of the total population and through special studies and research conducted in 1950

by the Rural Health Demonstration and Training Center. Certain health indices were established to facilitate comparison of results for the years 1950 and 1960.

2. A resurvey of random samples of the original population and a repetition of the special studies in 1960.
3. A depth study of selected samples categorized as "strong acceptors" and "strong rejectors" of health innovations in accordance with certain established criteria.
4. Interview of 10 most chosen leaders of social and health change.
5. A review of annual reports of the Rural Health Demonstration and Training Center and the Quezon City Health Department and of other available data from other related agencies.
6. Observations made by the researcher.

From the results obtained in this study it can be concluded that:

1. There were definite changes in the health practices of the people during the ten year period in practically all the health indices established although in certain instances there is still much to be desired. It was also found that 92% of the random population were acceptors of health innovations with only 8% resisting change.
2. Such factors as occupation, literacy, number of children in school, number of married children, size of family, distance to the health center, civic consciousness and membership in reference groups proved significant in the

acceptance of health innovations.

3. The changes in health practices could not be attributed solely to the institution of the public health program. Changes in the social, political, cultural and physical aspects of the community helped change the people's perception of modern health practices, altered their sense of values and facilitated the acceptance of health innovations.

ACKNOWLEDGMENTS

It seems almost impossible to acknowledge adequately the contributions of all persons who assisted me in carrying out this research. It would have been difficult to pursue a study of this magnitude, which entailed a cross-disciplinary approach, without the generous assistance and unstinting support of a number of people. To all of them, I am deeply grateful.

It was Dr. Buenaventura Villanueva who suggested the possibility of seeking financial assistance from the Community Development Research Council and who guided me in having the project approved. In no small measure am I indebted to my colleagues at the Institute of Hygiene, without whose professional help the repetition of many of the special studies would not have been possible. Dr. Arturo A. Librea, Mr. Charlemagne Tamondong and Dr. Victor C. Valenzuela of the Department of Biostatistics, with Dr. Generoso Roman of the Department of Epidemiology, have been most generous of their time in helping me with the statistical aspects of the research. Dr. Benjamin Cabrera, Dr. Edito Garcia, Mrs. Trinita A. Cruz and Mrs. Nonette L. Jusco provided the professional and technical skills and laboratory facilities necessary for the repetition of the special study on intestinal parasitism. The United Drug Company donated antihelminthics for the deworming program that was instituted. With the help of Dr. Eufronio O. Carrasco and Miss Beatrice Padilla of the Department of Physiological Hygiene and Nutrition, I was able to reassess the nutritional status of elementary

school children. Dr. Victor Tantengco of the same Department assisted me in the interpretation of the results of the nutritional assessment.

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CHAPTER I

THE PROBLEM

In 1950, the Philippine Government, with UNICEF and WHO assistance sponsored the Rural Health Demonstration and Training Center with the following objectives:[1]

1. To serve as a practical training station for health officers, students of public health, public health nurses, postgraduate students of rural medicine, undergraduate medical students, nursing students, sanitarians or sanitary inspectors, midwives, and others in the application of preventive medicine to the needs of rural communities with major emphasis on child and maternal health and welfare;

2. To serve as a means of determining and demonstrating practical and efficient procedures for combating the ravages of preventable and controllable diseases of Philippine rural communities, more especially those that afflict mothers and children most; and

3. To serve as a demonstration center for the carrying out of the various functions of a modern rural health service.

One of the areas covered by the said Rural Health Demonstration and Training Center was the Novaliches Health District, the community under study. Within the past decade, an intensive public health program has been carried out jointly with the Quezon City Health Department along with other community development projects of other agencies - all designed to uplift community living.

One of the measures of success of a public health program is the favorable changes it has been able to bring about in the health attitudes and practices of people. It would seem timely at this point to evaluate the impact of such a program as the one conducted by the

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[1] Semi-annual Report, Rural Health Demonstration and Training Center, July 1 to December 31, 1950, p. 1.

Rural Health Demonstration and Training Center on the health behavior of the people concerned and to consider the other forces related to the change, if any. It is hoped that the results of the study can provide guidelines for the planning and implementation of such future programs.

Statement of the Problem: It was the purpose of this study to:

1. Determine the changes in certain health practices of the people after a ten-year period of intensive public health program;
2. Identify the factors related to the changes; and
3. Study the dynamics of these changes.

Importance of the Study: The community, as Arthur Morgan has stated, is the seedbed of human values. Only in the community are the values created that dignify living and make it spiritually significant.[2] "Functionally, the community is the agency through which the human being realizes most of the varied interests of his life and the area in which he finds the consummation of most of his values. And, conversely, the human being is the agency through which the community necessarily attains what objectives it may be said to have and the area in which the values of the community find consummation."[3] In this integration of means and ends lies the value of our rural communities.

It is perhaps with this realization of the significance of the small community that the community development movement has gained

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[2] Baker Brownell, The Human Community (New York: Harper and Brothers, 1950) p. 33.

[3] Ibid., p. 32.

momentum all over the world, the Philippines included. In the past decade, the Philippines has launched a nationwide community development program as a strategem to planned social change with the end in view of developing more fully the natural resources and, of more importance, the human potentials of the Philippine Rural Communities. After all, "it is a cooperative alliance with Nature in which the survival and abundance of life of many species, including man, are mutually dependent."[4]

The Office of the Presidential Assistance in Community Development (PACD) is the arm of the Philippine Government responsible for community development, although there are a number of official and non-official agencies cooperating in the endeavor. The PACD has defined as its goal, among others, to "improve health and sanitation --- by developing an understanding of basic public health theory and practice to replace a fatalistic acceptance of contagious diseases as inevitable."[5]

While the PACD and other community development projects include the improvement of health and sanitation among their goals, the Department of Health is the legally constituted authority charged with protecting and promoting the peoples' health.

Great advances in public health have been made in the recent past, at least program-wise. By virtue of Republic Act 1082, enacted on

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[4]Baker Brownell, The Human Community (New York: Harper and Brothers, 1950) p. 6.

[5]Harry L. Naylor, "Community Development and Traditional Behavior Patterns" (USOM Manila; November, 1960) p. 3 (mimeographed).

June 19, 1954, every municipality has been provided with a public health team composed of a physician, a nurse, a midwife and a sanitary inspector. In 1958 the Department of Health was reorganized[6] with the ultimate aim of administering health services more efficiently and bringing it closer to the people.

No small amount of money, thinking and effort have been invested for public health programs. The crux of the matter is, with this prodigious amount of effort on the part of government and non-government agencies involved in community development to protect and promote the peoples' health, are public health practices improving in the barrios? Have people assumed greater responsibility for improving their personal, family, and community health and have they taken the necessary action? Certainly, anyone who embarks on a program of such magnitude has a responsibility to look into some of its effects on the people and to study some of the factors that hinder or favor the achievement of its objectives.

The quest for answers to the above questions has inspired this study in the hope that the results, while focused on public health, may be applicable to community development programs in general, be they on livelihood, government, education, and otherwise.

Definition of Terms:

"Innovations" means a change effected through the introduction of something new. For this study, the innovations are those health

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[6]Executive Order 288, series 1958, of the President of the Republic of the Philippines.

practices that were introduced by the Rural Health Demonstration and Training Center and the Quezon City Health Department for the purpose of preventing disease, promoting health and prolonging life.

The term "acceptance" in this study refers to the approval and adoption of scientific health practices. It means both the initial and continued acceptance.

The term "rejection" denotes refusal to adopt the health practices that have been introduced.

Chapter II of this study is devoted to a review of literature; Chapter III, to a description of the locale of the study including the health profile of the community and the health program instituted; Chapter IV describes the methodology; Chapter V gives a comparison of findings of the 1950 and 1960 survey and a description of some of the factors responsible for the differences found; and Chapter VI makes an interpretative summary of the findings followed by recommendations and conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

The growing recognition of the value of the behavioral sciences to medicine and public health during the past few years has brought about diversified researches and studies along the socio-cultural and psychological aspects of community health and how these forces are related to the acceptance of health measures. These studies have mostly been done abroad. A few of these studies are described here because they are somehow related to the subject under study.

Among the recent and best known writings on social class, cultural differences, and health are those of Koos, The Health of Regionville[1] and "Metropolis - What City People Think of their Medical Services."[2] The first study, conceived as "pure" social research, is an attempt to find out how man's health values are established and maintained, how health patterns accept or resist change or why there is a gap between medical science and the layman's acceptance. It was a study over a period of four years of some 500 families divided into social classes I, II, and III from high and low, visited at intervals, in an effort to learn their health habits, their attitudes toward health and illness, the relationship between the families and their sources of medical care and advice and the use made by these families

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[1] Earl L. Koos, The Health of Regionville, (New York: Columbia University Press, 1954).

[2] Earl L. Koos, "Metropolis - What City People Think of Their Medical Services", American Journal of Public Health, 45 (December, 1955) pp. 1551-1557.

of the institutions set up by the community to aid health. The study is based on the hypothesis that "the health attitudes and behavior of a family are related to its position in the social class hierarcy of the community, and are significantly affected by the prescriptions and proscriptions regarding health shared by those who are members of the same class."[3] He concluded that "in the last analysis the health of the community is based upon the idea, ideals, attitudes and behavior patterns of the individual and his family, for these determine what he will or will not, can or cannot, expect or accept from those who make his health their professional concern. Perception in all aspects of illness and health must be seen as varying from one stratum of the social hierarchy to another --- from perception stems acceptance or rejection of what is professionally known to be necessary for health."[4]

The second study by Koos was a replication of the first but applied to a metropolis. One thousand families were selected randomly for the study. Five aspects of the total health care program were considered - its medical care, its hospital care, public health, non-medical care and health insurance. He found out that "many illnesses go untreated and the family muddle through to an unsatisfactory solution of a health problem simply because of their negative attitudes which inhibit the use of modern medicine."[5]

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[3] Karl L. Koos, The Health of Regionville, (New York: Columbia University Press, 1954) p. 60.

[4] Ibid., pp. 156-157.

[5] Karl L. Koos, "Metropolis - What City People Think of Their Medical Services", American Journal of Public Health, 45 (December, 1955) p. 1557.

A more recent study along the same vein is the one made by Jay Brightman et al[6] in Syracuse in 1955. Instead of classifying the study group into social classes I, II, and III, their study group consisted of: (1) low income families in the Aid to Dependent Children (ADC) category who had been receiving public assistance for a sufficiently long period of time; (2) low income families but with sufficient resources to make them ineligible for public assistance; and (3) families from an industrial middle income group.

Information was gathered from a total of 956 households from the 3 categories of study groups by personal interview to determine the extent to which recipients of public assistance know of and utilize preventive medical and public health services available in their community and to compare the findings with similar data for the other two socio-economic groups.

They found that there was no basic difference in the receipt of health information and literature between the public assistance group and the two comparative groups; there was no essential differences in the knowledge or utilization of school health services; knowledge of community health services seemed adequate among all three groups; there was no gross differences revealed in the extent to which children of the three groups received immunization and child health services. The deficiencies in knowledge and utilization of preventive health resources among the public assistance recipients appeared to be primarily in the

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[6] Jay Brightman, Herbert Notkin, William Brumfield, Stella Dorsey and Herman Solomon, "Knowledge and Utilization of Health Services by Public Assistance Recipients", American Journal of Public Health, 48: 2, (February, 1958) pp. 188-199.

areas of: (1) maternity services, (2) regular chest X-rays, and (3) follow-up on defects noted during school medical examinations. Similarly, Bright and Hay made a study of health resources and their use by rural people.[7]

Like the study of Koos, the California study by Merril, Hollister and associates on "Attitudes of Californians Toward Poliomyelitis Vaccination,"[8] gives evidence that an individual's attitude toward health is related to his socio-economic status and to his perception of the peer group as applied to a specific disease. The sample for the study included 1,719 mothers or mother substitutes and 3,544 randomly selected adults. Information emerged from person-to-person interviews conducted by trained Census Bureau interviewers using a standard questionnaire designed to elicit attitudes and opinions toward polio. Among the significant findings were: that people, of whatever group, tend to think and act according to their perception of the way their friends think and act and, as has been found in the studies of Glasser[9], Deasy[10] and Ianni[11] and associates, there is a correlation between

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[7] M. L. Bright and D. G. Hay, "Health Resources and Their Use by Rural People", Cornell University Rural Society Bulletin, 32 (1952).

[8] Malcolm Merril, Arthur Hollister, Stephen Gibben, Tom W. Haynes, Vita Leslan, "Attitudes of Californians Toward Poliomyelitis Vaccination", American Journal of Public Health, 48: 2 (February, 1958) pp. 146-152.

[9] Melion A. Glasser, "A Study of the Public's Acceptance of the Salk Vaccine Program", American Journal of Public Health, 48: 2 (February, 1958) pp. 141-146.

[10] Leila C. Deasy, "Socio-Economic Status and Participation in the Poliomyelitis Vaccine Trial", American Sociological Review, 21: 2 (April, 1956) pp. 185-191.

[11] Francis A. J. Ianni, Robert M. Albrecht, Walter Boek, and Adele Polan, "Age, Social, and Demographic Factors in Acceptance of Polio-Vaccination", Public Health Reports, 75: 6 (June, 1960) pp. 545-556.

unfavorable attitudes towards the vaccine with low socio-economic status and low educational levels.

As early as 1921, similar studies have been made. Syndenstricker[12] in Hagertown, Maryland found that there is an increase in illness with a decrease in socio-economic status. Britten, Falk, Klem and Sinai[13] made similar studies in 1933 and despite differences in definitions of illness and socio-economic status their findings were similar to those of Hagertown - that the lower socio-economic classes had the greatest proportion of illness but consulted physicians and were hospitalized least.[14] However, the study of Saxon Graham[15] in Butler County, Pennsylvania, in 1954, showed that only minor differences were discovered in illness rates and use of hospitals. The only relationships similar to those found earlier were in the slightly smaller use of physicians and the somewhat larger proportion of persons with chronic diseases in the lower part of the socio-economic continuum.

Boek and Boek in Society and Health[16] treat the same subject on a more general nature and tried to answer such questions about "the process

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[12]Edgar Syndenstricker, "Economic Status and the Incidence of Illness", Hagertown Morbidity Study No. X, Public Health Reports, 44: (July 26, 1929) pp. 1821-1833.

[13]F. S. Falk, Margaret Klem and Nathan Sinai, "The Incidence of Illness and the Receipts and Costs of Medical Care Among Representative Families", (Chicago: University of Chicago Press, 1933) p. 92.

[14]Herbert Lombard, "A Sickness Survey of Winchester, Massachusetts," American Journal of Public Health, 18:9 (Sept., 1928) pp. 1089-1097.

[15]Saxon Graham, "Socio-Economic Status, Illness and the Use of Medical Services", The Milbank Memorial Fund Quarterly, (New York: Milbank Memorial Fund, 1957) 35 (January, 1957) pp. 58-66.

[16]Boek and Boek, Society and Health (New York: G. P. Putnam's Sons) 1956.

whereby a seemingly helpless infant becomes a productive adult; about the unseen forces that mold our thinking and actions, about the main characteristics of people one works and lives with in community life; about the decision-making machinery by which problems are solved in our cities and towns, about the correlation between social relationships and illness" and applied them to hospital situations.

Simmons[17] discussed the general implications of social class for public health along three areas: (1) the differential distribution of disease and consequent evaluation of appropriate foci of public health interest and activity, (2) the functioning of interpersonal relations within the health team and between team and public, (3) the congruence between public health precepts and felt needs of the public at whom these precepts are directed. Acceptance or rejection of the groups and services that public health has to offer in a large part depends upon how these are perceived by the recipients.

Paul's Health, Culture and Community,[18] Jaco's Patients, Physicians, and Illness,[19] Candill's Applied Anthropology in Medicine,[20] The Health Information Foundation's An Inventory of Social and Economic

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[17] Ozzie Simmons, "Implications of Social Class for Public Health", Human Organization, Vol. 16 (The Society for Applied Anthropology, Fall 1957).

[18] Benjamin Paul, (ed) Health, Culture and Community, New York: Russel Sage Foundation, 1955.

[19] E. Garthy Jaco, Patients, Physicians and Illness, (Glencoe, Illinois: The Free Press), 1958.

[20] W. Candill, "Applied Anthropology in Medicine", Anthropology Today: An Encyclopedic Inventory (Chicago: University of Chicago Press, 1953) pp. 771-806.

Research in Health,[21] Rosen's "A Bookshelf on the Social Sciences and Public Health"[22] all contain bibliographies of similar studies.

Even as a wealth of material on the subject exists in the United States, there is an equal dearth of such materials in the Philippines. A survey of the graduate theses in the Graduate School, University of the Philippines, reveals that very little has been written on the subject.

Among those that may be mentioned were the studies made by Remedios Felizmeña on the provisions for health, education and welfare of a rural community[23] and Teresita Jimenez on the health practices of a slum area in Manila.[24] The first study dealt more on the welfare aspects and related these to health and education. The second study attempted to show the relationship of health practices to the social, economic and religious aspects of the slum family with the end in view of stimulating the government and other agencies to improve conditions in the slum in order that "a new order or life" (communism) may not become attractive to them. Indifference and inability of the government to work out a system for health improvement, ignorance, low income,

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[21] An Inventory of Social and Economic Research in Health, Health Information Foundation, 420 Lexington Avenue, New York 17, New York.

[22] George Rosen, "A Bookshelf on the Social Sciences and Public Health", American Journal of Public Health, (April, 1959) p. 441.

[23] Remedios Felizmeña, "A Study of a Rural Community - Its Provisions for Health, Education, and Welfare", (Unpublished Master's Thesis, Graduate School, University of the Philippines, 1954).

[24] Teresita T. Jimenez, "A Study of Health Practices in the Slum of Barrio Andres Bonifacio", (Unpublished Master's Thesis, Graduate School, University of the Philippines, 1954).

obstinate credence in the healing powers of the "quack" and religious faith were the factors mentioned as contributing to unscientific health practices in the slums.

Two of the graduate theses had the Novaliches health district for their setting. The first was made in 1954 by Alma Lara[25] who studied the health needs of the rural areas in Quezon City, Novaliches included. The health needs she mentioned are exactly those discussed in this study as the source of data was the same. However, her observations were mostly on their educational implications for the public and school health programs, all the while pointing the need for better coordination.

A later study was by Fanny C. del Rosario[26] who studied 26 barrios of Novaliches to find out the utilization of the rural health center. Two households of considerable distance from one another were picked at random from each of the 16 barrios to serve as samples, and 5 were picked out from the poblacion, giving a total of 37 households. She found out that 29 of the 37 were users of the health center, but that these 29 users made use of the health center services only after the "herbolario" has failed to work out a satisfactory cure for the illnesses brought to his attention.

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[25]Alma F. Lara, "Health Needs of the Rural Areas of Quezon City and Their Educational Implications." (Unpublished Master's Thesis, Graduate School, University of the Philippines, 1954).

[26]Fanny C. del Rosario, "Utilization of a Rural Health Center and Implications of Social Case Work." (Unpublished Master's Thesis, Graduate School, University of the Philippines, 1954).

A more recent study was that of Youde[27] on "A Sociological Analysis of the Acceptance and Rejection of Modern Medical Practice in a Philippine Barrio". She found that 4 variables proved to be associated with the acceptance of modern medicine: (1) non-local travel, (2) frequency of trips to urban areas, (3) political party affiliation, and (4) voting participation.

Aside from these theses, there are some other studies worth mentioning. Among these was the survey made by Dr. Lara and his associates[28] in 1953 which evaluated the medical and welfare activities of the Victorias Milling Company in Occidental Negros. While the area surveyed was atypical in the sense that the community was composed of employees of the Milling Company plus the fact that the Company had a deep concern for the health and welfare needs of the employees, a privilege which many barrios do not enjoy, still the findings concur with other surveys on rural hygiene and sanitation in that there were still many things wanting in the hygienic conditions of families.

A more extensive study of rural health problems was that conducted by Rivera and MacMillan in 1952 on thirteen barrios of the Philippine rural communities.[29] From their findings, the health outlook in

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[27] Sheryl Youde, "A Sociological Analysis of the Acceptance and Rejection of Modern Medical Practice in a Philippine Barrio." (Unpublished Master's Thesis, Graduate School, University of the Philippines, 1959).

[28] H. Lara et al, Health and Welfare Conditions at the Victorias Milling Co., (Bacolod: Nalco Press, April, 1953) p. 31.

[29] G. F. Rivera and R. T. MacMillan, The Rural Philippines, (Manila: Office of Information, Mutual Security Agency, Oct. 1952) pp. 44-45.

the barrios studied was not too bright, either. The findings of this survey was further confirmed by the data gathered from a national sample of rural households by the Philippine Statistical Survey of Households.[30] Both studies pointed to inadequate source of drinking water and insanitary waste and garbage disposal in majority of households.

The socio-cultural aspects of the rural health problems have been explored by some sociologists. For example, Dr. Ethel Nurge,[31] a Fullbright grantee, studied: (1) why the people of Leyte had so much resistance to the use of pit latrines, (2) the people's theory of disease and health, and (3) infant feeding practice. Her findings have many important implications for public health work. Dr. Richard W. Coller[32] made a similar sociological study in Barrio Cacao, Leyte, in which he tried to relate the village ecology to the schistosoma problem in the region.

A more recent study by Dr. Antonio G. Tan[33] is on the health, hygienic and sanitary conditions existing among rural homes in Laguna.

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[30] The Philippine Statistical Survey of Households Bulletin, Series No. 2, Vol. 1 (May, 1956).

[31] Dr. Ethel Nurge, "Some Remarks on the Resistance to the Use of Pit Latrines" (Manila: Regional Office for the Western Pacific Region, WHO, October 5, 1956). Also: "The Theory of Sickness and Diseases in Guinhangdan" (Manila: Regional Office for the Western Pacific Region, WHO, August 13, 1956). (all mimeographed)

[32] Richard W. Coller, Barrio Cacao: A Study of Village Ecology and the Schistosomiasis Problem. (The Community Development Research Council, University of the Philippines, 1960).

[33] Antonio G. Tan, A Study of Health, Hygienic and Sanitary Conditions Obtaining Among Rural Homes. (Community Development Research Council, University of the Philippines, 1960).

The study revealed that the eleven barrios of Bay and Los Baños that were surveyed were with poor health, hygienic and sanitary conditions. He attributed the causes of these conditions to ignorance, poverty, superstition, and unscientific health practices handed down from generation to generation.

While the local studies cited are closely related to the present study, it will be noted that not one of the above studies was a longitudinal one. The present study is an attempt to make an evaluation of the impact of the various aspects of a public health program - environmental sanitation, maternal and child health, vital statistics, communicable disease control, and health and nutrition education - over a ten year period on the same population, thereby having a longitudinal dimension. It is therefore more comprehensive as well as intensive than the other studies. Another dimension has been added and that is, a study of factors responsible for the changes.

One of the reasons for choosing the area as the site of the study was the fact that reliable base-line data were available against which present findings may be compared. The researcher had actively participated in the gathering and analysis of these data ten years ago. In addition, the researcher had invested a great deal of time and effort in the program that served as a vehicle of health changes, having worked as health and nutrition educator of the Rural Health Demonstration and Training Center for a period of six years, and had been a witness to many of the changes that took place over the decade.

CHAPTER III

COMMUNITY SETTING

Ten years ago, Novaliches was just like any average Philippine rural community. It had no electricity, no municipal water supply, no modern means of transportation except for one bus line that serviced the area, no hospital, no high school, no asphalted roads, no fire department, no post-office, no bank, no cinema house - none of the modern conveniences of urban living. There was a feeling of somnolence among the populace; everybody moved at a slow pace. Simplicity and naivete permeated the way of life of the people. They dressed simply, they ate simply; they lived simply in two to three-room houses made of bamboo, cogon and nipa (palm leaves). Superstitious beliefs abounded. Belief in witchcraft and witch doctors and in the supernatural causation and treatment of illness prevailed. Religion exerted a powerful social force in the people's lives and many were fatalistic. While to an outsider there were problems galore, the people lived in contentment. Hardly touched were they by occidental influences, that they were no different from other rural communities that were remoter from the Metropolis.

It was because Novaliches presented all these typical aspects of an average rural community, inspite of its accessibility to Manila, that it was chosen as the site of the UNICEF/WHO assisted Rural Health Demonstration and Training Center in 1950.

Geographical, Topographical and Political Background

A stranger approaching Novaliches will be impressed by three

dominant features of the landscape - its rolling rugged, rocky terrain at some portions, mostly on the northeastern part; its flatness at other portions; and its river, the Tuliahan river, that bisects the district from North to South and that meanders even to the remotest interiors in rivulets that are conveniently used by the inhabitants for washing, bathing and other such purposes. Novaliches is 50 and 34 meters above sea level at its highest and lowest points, enabling the onlooker to see Manila Bay at its highest point. The town proper averages 40 meters above sea level.[1]

Novaliches has been endowed by nature with a natural basin created by the surrounding hills. This has been conveniently converted in 1925 by the Metropolitan Water District (now a part of the NAWASA) into the Novaliches Watershed Reservoir, otherwise known as the La Mesa Dam. In 1955, the Metropolitan Water District became a part of the NAWASA (National Waterworks and Sewerage Authority).[2]

Novaliches used to be known for its varied, tropical fruit-bearing trees that grew so lushfully in the area. Their prodigious growth then made Novaliches appear like a virgin nursery nestling at the foothills of Sierra Madre Mountains. It was naturally endowed with verdant grasslands and pastures that were conveniently used for cattle and carabao raising. Because of this, the area was utilized at one time as dairy farm and pasture lands.

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[1] Survey Records - Engineering Section, Quezon City Hall.

[2] Republic Act No. 1383, Approved June 18, 1955.

The Novaliches soil is light reddish brown to bright reddish brown. The subsurface and subsoil are friable in consistency and granular in structure and underlain by tuffaceous materials with varying degrees of disintegration and weathering.

In some cases, the tuffaceous material is exposed by extensive erosion. The soil is partly planted with lowland rice, corn, sweet potatoes, cassava, and fruit trees of various species. Inspite of the soil conditions, the land has been utilized for mango plantations. The plantations have appreciably decreased. Many of these plantations have been converted either into subdivisions or poultry farms.[3]

Novaliches, like other places in the Philippines, has two distinct seasons, the dry and the wet seasons. It is dry from the latter part of December to early May. Within this period, the average monthly rainfall is about 2 inches, with an occurrence of 4 to 5 rainy days a month. February is the driest month, whose rainfall rarely exceeds the one inch mark.

Thereon, the rest of the months are already wet, that is, from May to December, with a remarkable rain period confined during the months of June to October, averaging almost 16 inches. August is nearly always the wettest month of the year with about 22 inches of the average monthly rain. The rainy days' duration is from 20 to 25 days in a month.

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[3] M. M. Alicante, and D. Z. Rosell, Bureau of Science, Manila and R. Isidro, and S. Hernandez, Bureau of Plant Industry, Soil Survey of Rizal Province, Philippine Islands, No. 2, (1936-1937), pp. 15-17.

April and May are the hottest months of the year with mean temperatures 94°F and 95°F, respectively. The rest of the months have an intermediate mean temperatures varying from 88°F, more or less uniform in the months of September and October.[4]

Novaliches was considered established upon the organization of the first Spanish government in the place somewhere around 1750. A "gobernadorcillo" (Petty governor of the town) was appointed assisted by a "Capitan", (Captain) "cabezas de barangay", (Head of a village) "tenientes mayor", (Vice Mayor) "tenientes del barrio", (Barrio Lieutenant) and "alguacil" (Policeman) thus establishing a town. It is reported that the district was named after its first Spanish "gobernadorcillo" (petty governor of the town), surnamed Novaliches, who administered the town for a long period of time and who became so popular that the town was named after him. Prior to this, however, the town was called Tala, meaning star. The name Tala has survived but it now refers to the site occupied by the Tala Leprosarium, just at the outskirts of Novaliches proper.

Novaliches played a very active role in the Philippine Revolution. Andres Bonifacio was said to have organized the Katipunan here, a secret society which aimed to overthrow the Spanish rule. Up to the present, a monument still stands at its southern tip at Highway 54 to commemorate the Cry of Balintawak which was a culmination of the revolutionary activities of said society. In addition, Tandang Sora, (Melchora Aquino) a

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[4]Climatological Division - Weather Bureau, Department of Commerce and Industry. (Manila: 1960) *personal interview.*

heroine of the said Revolution, resided in the place.[5] After her was named the Tandang Sora Avenue, a road that connects the district eastward to the University of the Philippines, Diliman.

During the short-lived Philippine Republic, Novaliches organized a government electing a president in the person of Tomas Susano. Due to a threat on his life, Tomas Susano established residence at Caloocan and administered the town through an authorized person. However, seeing that the people could not adequately support the municipal government he moved to secede Novaliches to Caloocan and from then on it became one of its barrios.[6]

During the American Occupation, therefore, Novaliches became a part of Caloocan, Rizal, until it became incorporated with Quezon City in 1949.[7] Hence, the history of Novaliches cannot be dissociated from that of Quezon City of which it is now a part.

Quezon City was born as a result of the social amelioration program of the late President Quezon, who dreamed of providing decent homes on inexpensive lots for the landless and the working classes of Manila. A city for both rich and poor, was then conceived; a city which "politically shall be the seat of the National Government; aesthetically shall be the showplace of the nation - a place that thousands of people will come to visit as an epitome of culture and the spirit of the

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[5] S. G. Salcedo, History of the Cultural Life in Novaliches, (1953-1954). (Unpublished), pp. 1-8.

[6] Ibid., pp. 1-10.

[7] Republic Act No. 392, Approved June 18, 1949.

country; socially a dignified concentration of human life, aspirations, endeavors and achievements; and economically as a productive and self-contained community."[8]

The Diliman Estate comprising of 1,572 hectares of land was purchased for the purpose. By virtue of Commonwealth Act No. 502, approved by the First Commonwealth Government on October 2, 1939, Quezon City was created. More lots were subsequently purchased, and plans for the city were drafted. As a result of this, Novaliches, then a barrio of Caloocan, was incorporated as a district of said city. The inhabitants petitioned against this move and for some time the effectiveness of the law was suspended. However, with Republic Act 537, the inclusion of Novaliches to Quezon City was effected on June 28, 1949, and a sub-treasurer's office for collecting taxes was created.

According to Ordinance No. 1685, "AN ORDINANCE DIVIDING QUEZON CITY INTO 21 DISTRICTS, INDICATING THE RESPECTIVE DESCRIPTION AND TERRITORIAL COMPOSITION OF EACH DISTRICT", unanimously approved by the Quezon City Council on April 28, 1953, the boundaries and description of Novaliches District follows:

"The Territory and limits of Novaliches District shall comprise that portion of Quezon City bounded on the North, by the Municipality of Caloocan; on the east, by the Capitol District; on the south, by the District of Tandang Sora and Balintawak, and on the west, by the

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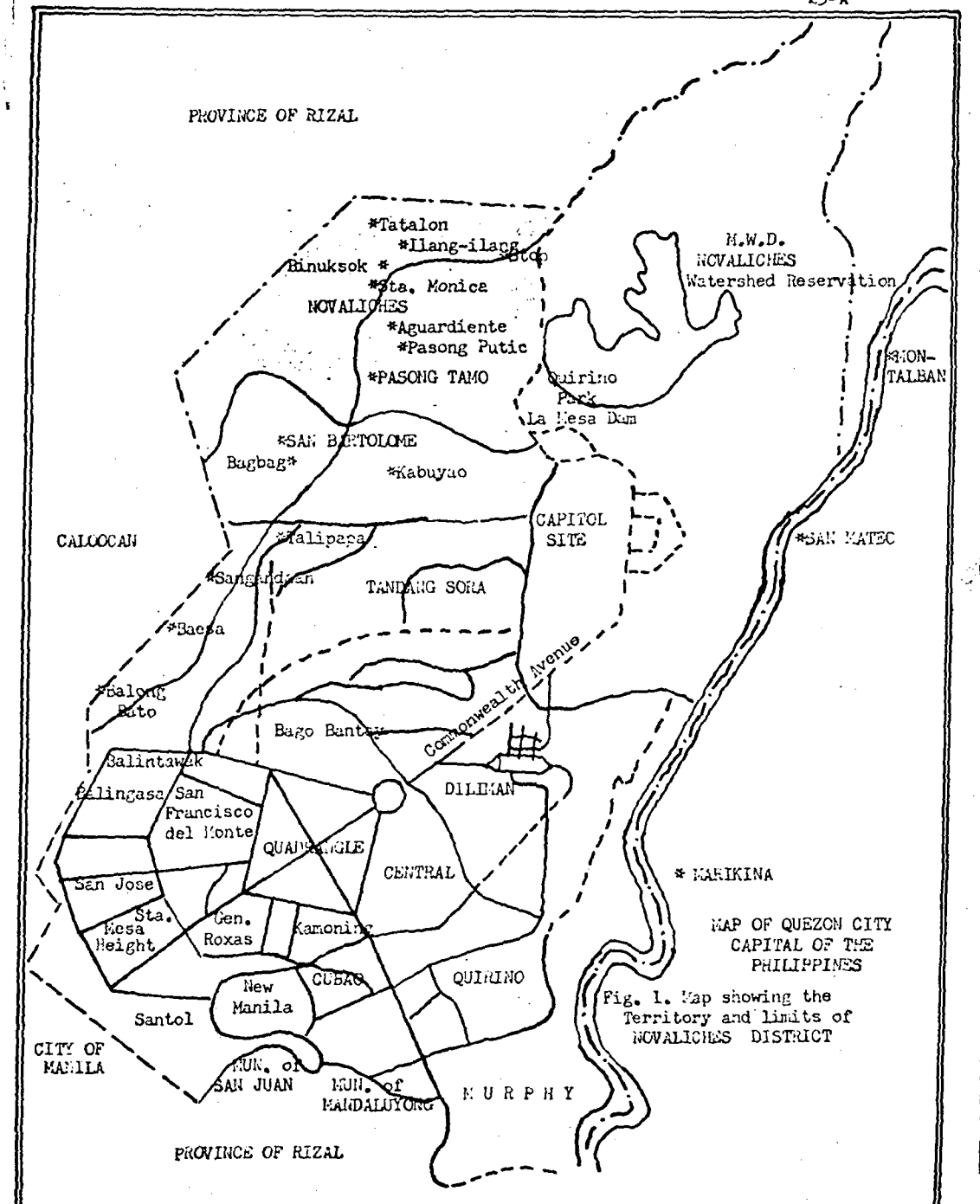
[8] "Genesis of a City", Quezon City Progress Report, Vol. 1 (1957) p. 1.

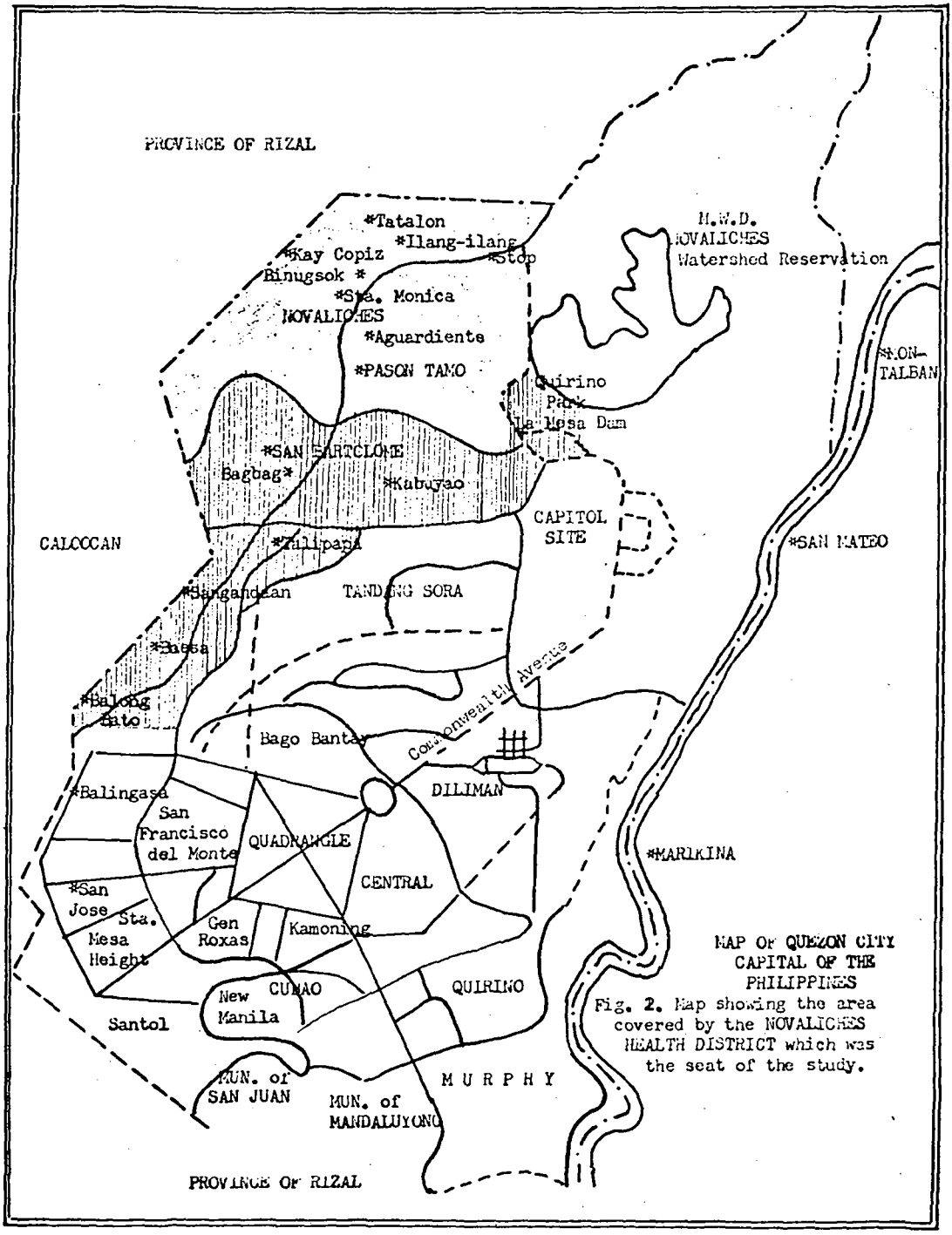
Municipality of Caloocan. Beginning at a point which is the intersection of the center line of the Tuliahan River and the Western boundary line of Quezon City (near C.B.M. 7, Swo-21626); thence Northwestward following the Quezon City line C.B.M. 17; thence Southward following the Southwestern boundary line of the Novaliches Watershed Reservation to a point where said Reservation boundary line intersects the center line of the Tuliahan River; thence Westward following the center line of the downstream course of the Tuliahan River to a point where said downstream center line intersects the Southern boundary line of St. Mark Subdivision of Chuidian and Company; thence Southwestward following the Southern boundary line of St. Mark Subdivision to a point where said Southern boundary line of St. Mark intersects the center line of Kay Bukot Creek to a point where said downstream line of Kay Bukot Creek intersects the center line of Tuliahan River; thence Southwestward following the center line of Tuliahan River to the point of beginning. (See Figure 1).

The Novaliches Health District discussed in this study, extends beyond the above described political boundaries. (See Figure 2). This is so because, for purposes of administration and demography, the Rural Health Demonstration and Training Center with the Quezon City Health Department, divided the territory under its jurisdiction (rural areas of Quezon City) into five (5) health districts, one of which was Novaliches Health District. Said district actually covered 2 Quezon City districts - Novaliches proper and San Bartolome - and a portion of Balintawak consisting of barrio Sangandaan, Baesa and Balon-bato. All



MAP OF QUEZON CITY
CAPITAL OF THE
PHILIPPINES

Fig. 1. Map showing the Territory and limits of NOVALICHES DISTRICT



MAP OF QUEZON CITY
CAPITAL OF THE
PHILIPPINES

Fig. 2. Map showing the area covered by the NOVALICHES HEALTH DISTRICT which was the seat of the study.

in all, there are 22 barrios included in the area under study. The health district is bounded on the north and west by the province of Rizal, on the East, by Capitol Site, on the South, by Highway 54, and on the Southeast, by Tandang Sora. The area of the health district is 12.04 sq. miles, and lies between latitudes $14^{\circ}53'$ and $14^{\circ}44'$, and between longtitudes $121^{\circ}02'$ and $121^{\circ}03'$.[9]

Prior to the creation of Quezon City, Novaliches enjoyed the privilege of having had a number of councilors who sat at the Municipal Council of Caloocan. As a district of Quezon City it had a councilor (Liberal Party) from 1950-1954 and another (Nacionalista Party) from 1954-1959. The district claims that it is neither a Nacionalista nor a Liberal Party stronghold. Rather, it votes for the right person.

Up to November 1959, the Mayor, Councilors, and Barrio Lieutenants of Quezon City, were all appointive positions. By virtue of R.A. 2259, approved June 19, 1959, the position of Mayor, Vice-Mayor, and Councilors of Quezon City became elective positions, while Republic Act 2370, "AN ACT GRANTING AUTONOMY TO BARRIOS OF THE PHILIPPINES", approved June 20, 1959 made the position of the barrio lieutenants and vice-lieutenants likewise elective. By virtue of the same barrio charter, the barrios in a district became "quasi-municipal corporations endowed with such powers as are herein provided for the performance of particular government functions and to be exercised by and through their

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[9] R. O. del Rosario, Rizal Monument Book No. 41 (Bureau of Lands, 1955-1956) p. 2.

respective barrio governments in conformity with the law."

For the first time, in the November election of 1959, Quezon City, of which Novaliches is a district elected its Mayor, Vice-Mayor and Councilors, and in 1960, its barrio lieutenants. In the 1959 election, Quezon City led the whole nation in a political experiment of good government. A group of men, some of them retired from government positions, but eminent and successful in their respective lines, and who enjoyed the reputation of honor, integrity, and of not having been a political candidate in the past, aligned themselves to form the Citizens League for Good Government of Quezon City, a non-profit, non-sectarian, and non-political corporation.[10]

Novaliches contributed, on an average, 1% of the total votes these candidates garnered from all over Quezon City. Only 5% of the 4,903 voters from Novaliches voted for the candidates of the Citizen's League.[11]

The Population

Novaliches health district has an estimated population of 24,000 in 1959 as compared to 8,183 in 1950.[12]

The original inhabitants of Novaliches came as settlers from Polo, Bulacan. The inducement for these settlers to come to Novaliches can

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[10] J. Abueva, "The Story Behind the Quezon City Citizen's League for Good Government and the 1959 Election". (Unpublished)

[11] Records and Statistical Division, Commission on Elections (Intramuros, Manila: 1960).

[12] Appendix - RHD&TC Progress Report, Sept. 1 - Dec. 31, 1950.

be attributed to Father Fermin who was then in-charge of the church and the convent, then the only structure in the thick wilderness. He promised to give the settlers land to cultivate and to live on. Settlers from Polo came before long and started planting rice, corn, cassava, fruit trees and ilang-ilang trees. There had also been immigrants from the Ilocos and Visayan provinces. In the absence of records, it is hard to establish who the original families were.[13] From reports of the old people in the community, the Pascual, Serrano, de la Cruz, Susano, de Jesus, Austria and Ramirez families are among the oldest.

The establishment of a number of industrial firms and subdivisions in the more recent past has brought in an influx of new immigrants. Most of the new, modernistic houses are owned by employees of the industrial firms or of people who have purchased lands from the subdivisions. Similarly, many of the make-shift houses belong to laborers.

Table XXXIII, Appendix "A", shows the population distribution by age and sex for the 1950 and 1960 surveys. It will be noted that approximately 90% of the population came from the younger age group (0-49) with 40% of the population being children (0-14). The size of the household has increased from 5.3 to 6.9.

Table XXXIV, Appendix "A", shows the population distribution by barrios for the 1950 and 1960 surveys, showing the concentration of the

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[13] S. G. Salcedo, History of the Cultural Life in Novaliches, (1953-1954). (Unpublished), pp. 1-10.

population in the poblacion, Baesa and Balong-bato.

Transportation, Communication and Social Life

Novaliches is 19 kms. from Manila and is about 25 minutes ride by car. One asphalted road, the Quirino Highway (now the Novaliches-Ipo road) which used to be a cow path bisects it from East to West, and serves as its main artery connecting it to Rizal Province in the North and to Highway 54 in the South. Its construction was attributed to Mr. Frank Carpenter, an American Philanthropist, who used to own a big parcel of land in Novaliches and who had visions of making the place an ideal residential site. This road was asphalted in 1952 and 1953 after the construction of a country residence of the late President Elpidio Quirino.

The district is connected eastward to the University of the Philippines, Diliman, by the Tandang Sora Avenue, a dirt road. One other dirt road connects the district westward to Caloocan, Rizal, and another northward, to Polo, Bulacan.

About 5 kms. northeast, beyond the boundary of the district is the Sacred Heart Novitiate of the Jesuit Fathers. Further, in the same direction about 13 kms. is the Tala Leprosarium and Tala Institute of Malariology of the Department of Health. The distance between these two sites is interspersed with newly developed subdivisions - the Carmel Farm, Amparo Subdivision, Miramonte, the Paradise Farm, and others. Located at its northeastern tip, is the La Mesa Dam, the water reservoir of the MAWASA, and adjacent to it, is the former country residence of the late President Elpidio Quirino. Down at its southeastern

tip, at a stone's throw is the People's Homesite and Housing Corporation Housing Project No. 8, with the San Jose Seminary close by. A proposed avenue, the Republic Avenue, when opened, will connect the district to the proposed Capitol Site.

Just as Novaliches is peripheral to Manila and is dependent on it for its purchases and health needs, other smaller communities are in turn peripheral to Novaliches.

Today, as one rides through the main highway, the picture is different from what it was ten years ago. The place seems to have been suddenly roused from its slumber of complacency. The somnolence and spirit of lethargy that once prevailed have been replaced by a great deal of mobility and activity.

Mornings bring in workers of the industrial establishments that now stud the roadside from its southern to northern tip. These are regular daily commuters coming from outlying districts, towns and cities. Passenger buses and jeepneys; private and official cars; delivery, cargo and service trucks ply back and forth by the minute. There are at the moment 27 industrial establishments in the district which have influenced to no small extent the physical and social profile of the community. They have brought with them immigrants from other places, so much so that new modernistic houses, as well as makeshift houses, have mushroomed within the vicinity of industrial plants.

The schools are now a hub of constant activity with their increasing number of teachers and students. Tables XXXV-A and -B, Appendix "A", show the number and percent of increase in the number of schools and in

the school enrollment within the decade.

The area now enjoys many of the conveniences of suburban living. There are 5 rice mills in the district located at strategic points along the highway. In the heart of the district are a rural bank (established in 1952), a private market (1930), a public library (1954), a cinema house (1956), a fire department (1957), a police outpost (1952), a post office (1955), and a modern health center (1957). There are two other sub-health centers in the district, one at Talipapa (1950), and another at Balintawak (1956). Electricity was installed in 1953 which stimulated the purchase of more electrical appliances. The government telephone system has serviced the area since 1954.

Sundays and holidays draw a different kind of crowd to the district. People, young and old alike, seeking respite from the hum drum of city life, find refuge at La Mesa Dam, a national park, or at Forest Hill, a private resort, both of which provide picnic grounds, dance halls, swimming pools, and other recreational facilities. In addition, there are the Grezar Boy Scout Camp and the Girl Scout Camp which draw in campers the year round. Similarly, the newly opened subdivisions within the district, 18 in number, attract prospective buyers from far and wide.

The natural scenic beauty of Novaliches, its abundant vegetation, its wide tranquil, open spaces, its exhilirating climate, its soothing cool evenings are enough enticements to the tired city businessmen or employees, who look forward to a restful evening at the end of a busy, noisy, and hot day, to live in the area.

The Economy

Within the last decade, Novaliches has shifted from a purely agrarian economy to a semi-industrialized one; from a typically rural to a semi-urban area. What were once vast agricultural lands - rice lands, fruit plantation or pasture lands - have now been converted into industrial sites (now twenty seven (27) in number) or land developments or subdivisions (18 large and 46 small at the time of writing) (see Appendices "B" & "C"). A survey of the industrial establishments revealed that of the total 2,080 employees, 225 or about 11% are residents of Novaliches Health District. (See Appendix "D".)

Rice is the main crop. The yield per hectare used to be 25-30 cavans due to infertility of the soil and unscientific farming techniques. However, in 1953, the government introduced the use of natural and chemical fertilizers and taught the people pest control. Table XXXVI, Appendix "E", indicates the increasing use of fertilizer in the area.

Consequently, the yield per hectare increased to 30-45 cavanes. This, however, is still short of the desired production which would give the farmers adequate income for a decent living. The above condition lead the farmers to borrow money at usurious interests on the so called "takipan", "talindua" or "terciahan" system. In the "takipan" method 2 cavanes are returned for every cavan borrowed. In the "talindua", 3 cavanes are returned for every 2 cavanes borrowed, and in the "terciahan", 4 cavanes are returned for every 3 cavanes borrowed. The scale of lending is dependent upon how far harvest time is. The

nearer the harvest, the more liberal the term or vice-versa.

Farmers farm ½ to 3 hectares of land. Except for 3 or 4 "haciendas" (big farms) the farms while numerous, are small, ranging from 2-3 hectares. The farmers may either own the farms or may be farm tenants or both. Crop sharing on an equal basis is the usual practice. The yield is divided between the landowner and the tenant after all expenses for harvesting and threshing have been deducted.

Table XXXVII, Appendix "E", shows the crop production and yield per hectare.

To augment their income, the farmers resort to cultivating fruit and vegetable gardens, poultry, piggery and carabao raising. There are at the time of writing about 44 poultry farms (big and small) with an estimated income ranging from ₱80-₱500 a month. Table XXXVIII-A, Appendix "E", shows the livestock population from the area for 1961. Four hundred and seventeen (417) hectares are planted with different varieties of fruit trees, mostly mangoes and citrus with a total number of 21,717 trees. (See Table XXXIX, Appendix "E".)

There has been a change in the occupation of the people of the area during the decade. Table XL-A & XL-B, Appendix "E", show that there is a significant trend towards the decrease in the number of farmers and unskilled laborers and an increase in the number of skilled laborers and professionals.

A comparison of the income of the district for 1950 and for July 1960 as gathered from the Treasurer's Office which shows more than 100% increase (from land tax and municipal licenses), may reflect the

economic progress that has taken place.

1950 ---------- ₱42,054.48

1960 ---------- ₱93,818.68

The assessed value of lots have likewise increased tremendously. In 1950, the bigger lots were sold at ₱.10-.50 a square meter, whereas the smaller lots were sold at ₱.05-₱1.00 per square meter. Now, bigger lots (sold by the hectares) cost ₱2.00-₱5.00 per square meter whereas, smaller subdivision lots cost from ₱6.00-₱10.00 per square meter.[14]

The health budget has quadrupled within the decade. The budget for 1950 of ₱131,517.06 has increased to ₱448,086.00 in 1960.[15]

Republic Act No. 2649, effective June 18, 1960 provided for the increase in salaries of Quezon City officials. These may also well reflect the economic status of the city, Novaliches district included. (See p. 189, Appendix "F".)

These then, were the changes that have taken place in the political, economic and social life of the people of Novaliches within the last ten years. This was the setting for the intensive public health program that was carried out jointly by the Rural Health Demonstration and Training Center and the Quezon City Health Department.

THE PUBLIC HEALTH PROGRAM - THE VEHICLE FOR HEALTH INNOVATIONS

Lack of technical know-how and lack of trained personnel - these,

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[14] Data taken from Assessor's Office, Quezon City Hall, (1960).

[15] Data taken from Accounting Office, Quezon City Hall, (1960).

according to WHO are two of the major reasons for bad health conditions which still affect most of the world's two and a half billion people. The Philippines is no exception to this, especially before 1950. Tuberculosis, malaria, schistosomiasis, intestinal parasitism and malnutrition were prevalent and took their toll in loss of life and economic productivity of population. The reported deaths among the rural population without medical attendance was approximately 85% while more than 90% of the babies born were delivered by untrained, unlicensed midwives.[16]

In recognition of the foregoing conditions, a group of local health authorities, led by the former Dean of the Institute of Hygiene, University of the Philippines, felt that there was need for establishing a health demonstration and training center in a typically rural district of the Philippines within easy reach of Manila. With foreign assistance from the UNICEF and the WHO, said Training Center started to operate February 1950 first, as a unit of the Social Welfare Administration and later, as a Division of the Department of Health. In order for the Division to carry out its objectives, it was manned with a selected group of public health personnel, hand picked by the Dean of the Institute of Hygiene himself, who served as Executive Officer of the Project.

The Training Center had for its field of operation approximately 140 square meters of rural areas in Quezon City with an estimated

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[16] Preliminary Document of Philippine-American Program for Rural Health, Mutual Security Agency (1953) p. 5.

population of 50,000 of which the Novaliches District was a part. In virtue of an arrangement whereby the Rural Health Demonstration and Training Center (RHD&TC) staff has been accorded powers by the Quezon City health authorities to conduct public health activities and given discretion in the enforcement of health ordinances in the area, the Rural Health Demonstration and Training Center became part and parcel of the Quezon City Health Department and vice-versa. Integration of staff responsibility was effected except only in the matter of financing.

The activities of the Center were focused along three main phases, namely:[17]

1. Community Health Services
2. Practical Field Training
3. Applied Research and Special Studies.

HEALTH INNOVATIONS INTRODUCED THROUGH COMMUNITY HEALTH SERVICES

The Health Profile of the Community as Gleaned from the 1950 Survey

The first task undertaken by the staff of the Rural Health Demonstration and Training Center was the house-to-house health survey. This was done for the purpose of obtaining essential demographic, economic, health and welfare data in order to better define the health problems. These became the bases for program planning and future evaluation.

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[17] RHD&TC Semi-Annual Report, January 1 - June 30, 1951, p. 1.

A summary of the health problems in Novaliches Health District as revealed by the survey in 1950 were as follows:[18]

1. High rate of deliveries attended by unlicensed midwives.
2. Very low proportion of expectant mothers receiving prenatal care.
3. Very low porportion of infants received infant hygiene service.
4. Big proportion of infants had not been vaccinated against smallpox.
5. Immunization of population against cholera-typhoid-dysentery was not adequate.
6. Medical care was very inadequate.
7. Dietary habits of the masses needed much improvement.
8. The majority of the inhabitants of the district required dental care.
9. The prevalence of pulmonary tuberculosis, nutritional diseases and malaria was high.
10. Most houses lacked adequate sanitary facilities (toilets, baths).
11. Drinking water was unsatisfactory in the majority of the houses surveyed.
12. Sanitary conditions of the environment were not adequate.
13. Family income in the majority of homes surveyed were apparently low.
14. The level of understanding about health and welfare matters among the masses was very low.

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[18] RHD&TC Progress Report, February 1-June 30, 1950, p. 6.

Upgrading and Strengthening Public Health Services

The next task was to upgrade the level of public health work in the demonstration area. This was in consonance with the philosophy that direct community service is an integral part of demonstration and training, inasmuch as the community is the laboratory for determining and demonstrating sound public health procedures. The RHD&TC tried to elevate the standard of public health services in the Demonstration Area through: (1) the employment of a team of trained personnel which supplemented and complemented the existing Quezon City Health Department personnel; (2) technical assistance from WHO; (3) the provision of standard equipment provided in part by the UNICEF; (4) the coordination of health activities of related agencies; (5) the utilization and mobilization of all available resources; and (6) the education of the public in health. The basic public health services; namely, Maternal and Child Health, Environmental Sanitation Control, Disease Control; Vital Statistics, Social Welfare Services, Laboratory Services and Health and Nutrition Education were all strengthened and upgraded as will be discussed in the following pages.

I. Intensive Maternal and Child Health Services

The survey as well as an observation of the health center activities revealed that very few mothers sought prenatal supervision. The few that did seek did not come early enough and as regularly as they should, nor did they utilize the services of professionally trained people at the time of delivery. Babies and pre-school children did not get any child health supervision and if they were ever brought to the

health center, it was because they were already sick. On the other hand, it was found that the health center was not properly provided with even the minimum standard equipments that were necessary for the health supervision of mothers and children. Neither were there special clinics organized for the purpose.

Similarly, the school health program was found wanting in several respects. There was no school physician either from the Medical and Dental Health Services of the Bureau of Public Schools nor from the Quezon City Health Department who took charge of the health supervision of school children. Neither was there any dental health services. The school nurse seldom came around to give a follow through of the findings of the health examination since there was only 1 nurse for more than 10,000 school children. The teaching of health was not functional and vitalized for lack of school health facilities.

The hygienic environment of the school was likewise unsatisfactory. At the time of the survey, the two central elementary schools, Novaliches and Tandang Sora, did not have any source of water supply; neither was there sanitary toilet facilities.

Mid-morning lunches were entrusted to outside vendors, whose only interest was for profit rather than providing nutritious snacks for the school children. In one school, there was not even a facility for the serving of these mid-morning lunches, so much so that these were served under the school building exposed to dust and flies.

In view of these pronounced maternal and child health problems, special services were organized both in the health centers and in the

schools purposely for mothers and children. These special services were:

1. The pre-natal and post-natal clinics.
2. The well-child conferences
3. The Domicilliary care services
4. The school health education program.

1. The Pre-natal Clinic and Post-natal Clinics

The first pre-natal clinic organized under the joint auspices of the RHD&TC and Quezon City Health Department was held in Novaliches on September 29, 1950 and a little later, at Tandang Sora Health Center. The following standard procedures were introduced:

1. At the first visit,
   (a) history taking and family situation were discussed.
   (b) a general physical examination was performed.
   (c) a detailed abdominal pelvic examination was done.
   (d) blood was tested for hemoglobin level, for syphillis and for malarial parasite.
   (e) urine examination for albumin and sugar.
2. Blood pressure readings at all visits.
3. Weighing at all visits.
4. Dental care for all visits.
5. Instructions on proper hygiene, nutrition and certain danger signals for pregnancy at all visits.
6. Anticipatory guidance, such as process of birth, breast feeding, sibling rivalry, fears, etc.
7. Planning for delivery.

The mothers were instructed to come for prenatal examination once a month, for the first 28 weeks; every 2 weeks between the 28th and 35th week and weekly thereafter. In order to avoid overcrowding in the health centers, the mothers were taught to come by appointment. This was rather difficult at first as the people in the rural areas did not have proper sense of time. The mothers were also introduced to the idea of "first come, first served" through giving them numbers as they came. Again, this was something new to the people, as they had been used to being served first, if they were influential members in the community, and last, if they were not.

Another change introduced in the management of prenatal mothers was doing away as much as possible with thiamine and calcium injections to which they have been used. Instead, the use of enriched rice was encouraged. For this purpose, the pre-mix rice was sold at the prenatal clinics at minimum cost and ferrous-sulfate and vitamin pills were given free to indigent mothers who needed them. In addition, UNICEF milk was given to these mothers as a dietary supplement.

Post-natal Services

The mothers were instructed to return to the health center between the 4th and 6th week after delivery for postnatal check up.

In view of the lack of accommodations in the Maternity and Children's Hospital to which the majority of mothers go for delivery services, majority of the cases had to be discharged after 2 or 3 days. The RHD&TC, realizing the need for extending post-natal and infant services, had worked out an agreement with the Maternity and Children's Hospital

and other hospitals whereby all cases delivered therein who were residents of Quezon City were to be referred to the Rural Health Demonstration and Training Center.

2. Well-Child Conferences - As previously indicated, the idea of bringing well children to the health center was a new one. Mothers had to be educated about the importance of child health supervision. The first well-baby conference organized by the RHD&TC and the Quezon City Health Department was again held in Novaliches on October 18, 1950. The standard procedures introduced in this well-child conferences were:

(1) Health appraisal including history taking, weighing and measuring, physical examination and observation of the emotional and social development of the child.

(2) The necessary immunizations were administered.

(3) Discussions with the mother about all aspects of the child's health especially on nutrition were held by both the physician and the nurse. Supplementary feeding was emphasized.

(4) Follow-up home visits by the public health nurse.

(5) Anticipatory guidance.

(6) Screening for early case findings of handicapping conditions.

(7) Referrals to appropriate agencies.

The mothers were advised to bring the infants every month for the first 6 months; every 2 months between the 7th and the 12th month; 3 to 4 times a year between 2 to 3 years of age, and twice a year before going to school. As in prenatal clinics, UNICEF milk and free vitamin preparations were given away to indigent cases whenever indicated. The vitamin preparations were solicited from different drug companies.

3. Domicilliary Care Services - The Domicilliary care service was formally inaugurated in the early part of September 1954, under the joint auspices of the RHD&TC and the Quezon City Health Department. This meant rendering 24 hours home delivery service. Consequently, the necessary personnel, equipment and transportation were provided to make the service possible. One thousand pesos (₱1,000) was appropriated by the City Government to pay the "per diems" of the people on duty.

Even prior to 1954, however, the public health nurses and midwives were required to stay in the area where they served, in order to be within call when deliveries occurred. The community was advised on the availability of such services.

A further extension of the Domicilliary Care Service was the Premature Baby Home Care Program which was inaugurated on June 1957, for the purpose of providing special care for premature babies of Quezon City.

4. School Health Education Programme

Among the innovations introduced by the RHD&TC with the cooperation of the Quezon City Health Department and the Division of Schools along school health education were:

(1) School Health Services:

(a) Assignment of one school health physician, who was paid from the RHD&TC budget. This made possible the examination of all first grade pupils and teachers, as early as September 1, 1950 and April 21, 1951 respectively.

(b) To relieve the school physician of too many children to examine and to enable him to have more time for a more thorough examination, the teachers were made responsible for

screening the children for any signs of deviations from the normal for referral to the nurse. The nurse, in turn, screened cases that needed the attention of the physician.

(c) Through an arrangement with the superintendent of schools, the school nurse visited the schools more regularly to be with the physician for screening purposes; for the medical examination, and for follow-up.

(d) The practice of involving the parent and the teacher in the medical examination, was adopted. After the examination, conferences were held with the parents, teachers, nurses by the physicians in order to insure better understanding and closer follow-up of the child's condition by both the parents and the teacher.

(e) Referrals to the proper health agencies were made with the help of the social worker.

(f) Dental health services - the dental services in the school was started in the latter part of February 1951. A dental health survey was conducted for all elementary school pupils. While the survey was primarily intended as a special study to determine the incidence of dacayed, missing and filled teeth, it also served as an educational process for establishing rapport between the school dentist and the pupils. Topical application of Sodium Fluoride was administered for preventive purposes.

(g) Tuberculin testing, X-ray examination, BCG vaccination, intestinal parasitic survey and de-worming programs and immunization against smallpox, CTD (cholera-typhoid-dysentery) and DPT (diphtheria-pertussis-typhoid) were also instituted.

(h) Organization of "summer round up", whereby children who were about to enter school were examined during vacation with parents and teachers present. This was made a requirement for registration.

(2) Hygienic environment:

(a) Provision of adequate water source for the two elementary schools was facilitated by the RHD&TC.

(b) Provision of safe waste disposal. Pit privies were constructed in the two central schools and the annexes.

(c) Improvement and development of school lunch program, managed by the Home Economics Department, with the primary aim of making it a laboratory for the study of proper nutrition and of supplementing the diet of school children rather than for profit. UNICEF milk was introduced in this program both as a supplement and as an educational process for teaching children to like milk.

(3) Health instruction and guidance:

(a) Refresher courses for the school teachers were instituted with the cooperation of the Quezon City Health Department and Division of Schools in an attempt to keep them abreast with modern health knowledge and in order to vitalize teaching of health in all grades.

(b) Provision of health education materials in the form of films, pamphlets, posters, etc.

(c) Using the PTA as a vehicle for educating the parents in health.

(d) Researches and special studies were conducted as a basis for planning.

Two foreign consultants sponsored by WHO, one a pediatrician, who arrived on October 6, 1950 and another a public health nurse, who arrived on August 23, 1950 gave technical assistance and even helped the Training Center in the organization and operation of remedial maternal and child health services.[19] The health center physician of Novaliches

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[19] RHD&TC Semi-Annual Report, July 1-December 31, 1950, p. 3.

as well as the public health nurses served as the understudy of these two consultants who, after the departure of said consultants, carried on the work. These foreign consultants helped a great deal in the promotional work of the health center, as they attracted more of the community people to come, and in upgrading the level of health center services.

More recently, on May 13, 1959, a modest mental health program was integrated into the Maternal and Child Health program, with the cooperation of one of the members of the faculty of the Institute of Hygiene. The main objectives were:

1. To give direct mental health services to the residents of Quezon City.
2. To serve as a demonstration and training center for public health personnel.

II. Environmental Sanitation Services

The environmental sanitation condition in Novaliches at the time of the survey was found deplorable. The survey revealed that about 92% of the households still used insanitary methods of waste disposal; 32% still used unsafe sources of water supply; 50% had inadequate ways of garbage disposal. Stray animals abounded and drainage was poor.

Food and market sanitation were found unsatisfactory in view of the absence of running water among the establishments. The utensils used were below standard and the handling techniques of the food service personnel with regards to hygiene and sanitation were below par.

As a result of the above conditions, a number of infant deaths were caused by gastro-intestinal disease; gastro-enteritis ranked fourth

(4th) as a cause of death among infants. Seventy three (73%) of school children were infested with intestinal parasites. Malaria was the third (3rd) cause of illness.

To combat the above-mentioned problems, the RHD&TC and the Quezon City Health Department periodically surveyed sources of drinking water and collected water samples for chemical and bacteriological analyses. Methods of protecting water sources were recommended, and water sources found to be unsafe were condemned and accordingly placarded. New public wells were drilled with the help of the Bureau of Public Works, the Department of Health and other agencies.

Simultaneously, an extensive and intensive toilet construction campaign was launched. The RHD&TC demonstrated how the cheapest and best locally adopted sanitary privies may be constructed that would suit the topographical and soil characteristics of the area. Technical supervision was provided by the Sanitary Engineer, Health Officer and Sanitary Inspectors.

Food establishments were then routinely inspected by the Sanitary Inspectors in the area. The points considered were: general sanitation, insect and vermin control, sanitary facilities, protection of food, refuse disposal and provision of hot water for cleaning. These consequently, led to the organization of food handlers' classes, in which the owners of food establishments, food service personnel and the public were educated in the importance of proper selection, preparation, preservation and handling of food.

In cooperation with the Bureau of Agricultural Extension, the

RHD&TC, the Quezon City Health Department and the Division of Schools popularized the use of blind drainage and compost pit.

The condition of the public cemetery was likewise improved.[20]

III. Services for Disease Control

During the period of the 1950 survey, 366 people were found suffering from some kind of observable disease or ailments. Of these, 197 or 54% were without medical attendance. Table XLI, Appendix "C", shows the various cases encountered.

The Rural Health Demonstration and Training Center and the Quezon City Health Department intensified the immunization campaign against communicable diseases. Children brought to the well-baby clinics were given all the necessary immunizations such as smallpox, DPT (diptheria-pertussis-typhoid) and CTD (cholera-typhoid-dysentery) vaccines. Primary or booster doses were administered to the school children as the case may be.

Morbidity case finding was done by the nurses and sanitary inspectors through their house visits. In cases when the patient had to stay home, the nurses and physicians gave advice regarding proper isolation, disinfection and domicilliary care of the patient and the family. Where tuberculosis cases were found, all the contacts were advised to have X-ray examinations and to practice necessary health measures. In addition, general clinics were conducted for morbid cases that were within the capacity of the health center physician to treat. Cases needing

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[20]Progress Report, RHD&TC, September 1-December 31, 1950.

special treatment were referred by the social worker to the proper health institutions.

The environmental sanitation program and the other special services described contributed in no small degree to disease control.

IV. Vital Statistics Services

The improvement of registration of births and deaths was among the first tasks that the Rural Health Demonstration and Training Center, with the Quezon City Health Department, set to do.

It was discovered that there was marked under-registration of birth and that the diagnoses of causes of deaths were not reliable. Because of this, there was a seemingly high infant mortality and low birth rate and a high incidence of infantile beri-beri.

The Rural Health Demonstration and Training Center through a special study determined the number and degree of under-registration of births and proceeded to improve the system of recording births and deaths. This was accomplished by:

(1) Strengthening and upgrading the Office of Local Civil Registrar through the addition of better qualified personnel.

(2) Establishing a working relationship with Manila Health Department and surrounding municipalities so that all births registered in these places who are residents of Quezon City are referred to the Quezon City Health Department.

(3) Conducting birth registration campaigns whereby the cooperation of health personnel and the entire community, especially the unlicensed midwives and parents, was solicited. The public was educated

on the importance of birth registration.

In addition, the proper study, interpretation, and systematic utilization of data was demonstrated.[21]

V. Social Welfare Services

Social welfare services was integrated into the various services of the Rural Health Demonstration and Training Center. This was made possible through the presence of a social worker in the staff. Cases needing social welfare services were referred to the social worker from the pre-natal clinics and well-baby conferences, school health program and general clinics. Clients who were assisted were made to realize that the solutions of their problems depended greatly upon their capacities and willingness to help themselves.

Among the cases that were given assistance were the following:[22]

(1) Cases needing immediate hospitalization

(2) Other medical cases that needed to be referred to special cases.

(3) Emergency relief cases.

(4) Unmarried mothers

(5) Desertions

(6) Crippled and disabled cases

(7) Widows

(8) Unemployed

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[21] RHD&TC Progress Report, January 1-June 30, 1951, p. 3.

[22] RHD&TC Semi-Annual Report, January 1-June 30, 1952, p. 4.

(9) Aged

(10) Mental cases

(11) Others.

Referrals from hospitals were taken cared of by the social worker.

Guidance and counselling and home visiting were made a necessary part of the social service program.

VI. Laboratory Services

Equipped with very modest laboratory equipments, the RHD&TC made laboratory services as part of the routine procedures of its various services. Urinalysis, blood examination for syphillis, malarial parasite and hemoglobin count were made part of the routine procedures in the pre-natal clinic; stool examination was made a requirement for all food handlers and for the intestinal parasitic survey of the school children; chemical and bacteriological examination of water supply was made a routine procedure to safeguard water supply.

Those laboratory examinations that could not be performed in the health centers such as the serological examination were referred to the National Health Department laboratory.

Some problems were met with regards to submitting blood specimen for serological examination. There was a great deal of resistance on the part of the mothers with regards to this aspect of the pre-natal clinic and a great deal of education had to be done along this matter.

Health and Nutrition Education

Health and nutrition education was made to permeate all the

different phases of the public health program. All the members of the public health team seized all teachable moments to carry on health education work. This was achieved through:

1. Staff education of the health and school personnel - to make them conscious of their opportunities and responsibilities in educating the public for health and to help them develop some skills in health education work.

2. Health education through personal contact:

   a. In special and general clinics of the health centers - Every contact with a public health worker was made an educational experience. In the clinics, the people were given advice by the nurse, the physician and the midwife. In addition, all the processes they underwent relative to the standard procedures in the special clinics were in themselves educational.

   b. In home visits - When the physicians, midwives, social workers, sanitary inspectors and other health workers visited homes, health education took place in a natural setting.

   c. In the schools - The contact between the teacher and the pupils, between the nurse and physician and the pupils, the parent-physician conference, the teacher-nurse conferences, all afforded opportunities for health education.

3. Health education through group contact as:

   a. In health education classes organized for mothers, fathers, teen-agers, farmers, and food handlers. For content see page 189, Appendix "H".

b. In workshops conducted for community leaders and farmers.

c. In committee meetings with community groups.

d. In Institutes, Seminars, and Conferences for health and school personnel and of allied workers.

e. In community meetings and assemblies.

f. In community organizations and community development programs.

4. Health education through collaboration and coordination with other allied agencies - In recognition of the fact that health and nutrition education is everybody's business, the health and nutrition program of the RHD&TC and the Quezon City Health Department was incorporated with those of the Institute of Nutrition now FNRC (Food and Nutrition Research Center), the Bureau of Agricultural Extension, the PACD (Presidential Assistant in Community Development) and PRRM (Philippine Rural Reconstruction Movement), the Bureau of Animal Husbandry, the NAMARCO (National Marketing Corporation), the ACCFA, (Agricultural Credit and Cooperative Financing Administration), the Bureau of Public Schools, the Bureau of Labor, the SWA (Social Welfare Administration) and others.

5. Health education through mass media communication - Posters, pamphlets, leaflets, charts, press releases were prepared, produced, assembled, collected and distributed with the cooperation of such agencies as the National Media Production Center, the United States Information Service, the Department of Agriculture, the International Cooperation Administration, and others.

In order to gain the support and full cooperation of the community, a Citizen's Committee was organized by the RHD&TC and the Quezon City Health Department as early as June 10, 1950. This was composed of key people of the district, particularly the barrio lieutenants, professionals and other community leaders. This Committee was created in order to:

(1) Serve as a bridge between the public health program and the community - a means of interpreting the program to the people and of learning from the people how the program could be more useful to them.

(2) Help the people identify their own problems and resources and to help them find solutions and do something about these problems.[23]

Through the activities of the Citizen's Committee may be attributed such accomplishments as:

1. The construction or repair of drilled wells in schools and public places.
2. The naming of streets and the numbering of houses to facilitate home visits.
3. The improvement of the public cemetery and the assignment of a caretaker.
4. The sponsoring of community workshops on health and in farming.
5. The construction of a modern health center with the cooperation of the Ladies Association.
6. The construction of a public toilet in the plaza to serve as a demonstration and toilet campaign.

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[23]RHD&TC Progress Report, September 1 - December 31, 1950, p. 2.

7. Cooperation with the de-worming program in schools.

8. Improvement of roads.

9. Informing the public about the newly organized special services in the center; canvassing pre-natal mothers, infants and pre-school children through the cooperation of the tenientes del barrio and advising them to go to the health centers for the necessary health supervision.

10. Distribution of fertilizers and a number of other things purported to promote community health and welfare.[24]

THE TRAINING PROGRAM

Practical field training has been recognized as an important and integral part of the formal education of persons who are about to become engaged in public health work. As has been previously mentioned, the RHD&TC was conceived for this purpose - to demonstrate and provide practical training in modern public health practices. The community services previously described were carried out as a laboratory for such training.

There were as many types of training programs offered by the RHD&TC as there were various categories of trainees. The Training Center prepared the trainees for generalized public health and welfare work through which the teamwork concept and the public health philosophy were deeply ingrained. Ample opportunities for the indoctrination of various public health disciplines were offered, as well as the development of

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[24]RHD&TC Progress Report, January 1-March 31, 1951, pp. 13-14; RHD&TC Semi-Annual Report, July 1-December 31, 1952, pp. 1-3.

certain techniques, methods and procedures necessary for these disciplines.

The training programs offered at the Rural Health Demonstration and Training Center were:

1. Training program for physicians and medical students.
2. Training program for nurses and midwives.
3. Training program for dental health officers.
4. Training program for health educators.
5. Training program for social welfare officers.
6. Training program for sanitary inspectors.
7. Training program for school health personnel.
8. Training in adult education such as the mother's, father's classes for food service personnel, farmers' class, etc.

Duration, contents and methods of training depended upon the course and upon the category and educational background of the trainee. While there were specific courses for physicians, nurses, midwives, and health educators, the programs were flexible and were tailored to fit the needs of the trainee or the sending agency.

The Training Staff

The training staff were all full time personnel employed by the government of the Republic of the Philippines. They were recruited by the Dean of the Institute of Hygiene who also held the position of Consultant and Coordinator of the Training Center and who saw to it that the training staff were all qualified to serve as "trainers".

For the directory and qualifications of the training staff, see page 195, Appendix "I".

Table XLII, Appendix "J", shows the number of public health workers trained by the Rural Health Demonstration and Training Center during the ten year period distributed according to the categories of trainees.

As can be seen from the table, a grand total of 6,851 public health workers had been trained by the RHD&TC during the ten year period. It can be safely said that about 50% of these were trained at the Novaliches Health District as this was the district of choice by the sending agencies or affiliating schools inasmuch as, compared to the other districts, it best typified the rural areas. Also, it was here that the best qualified training staff were placed and where the WHO technical consultants concentrated their efforts. This meant that, over and above the services of the regular health personnel of the Quezon City Health Department and the RHD&TC, the district benefited from the additional services of the public health trainees as they actively participated in the health program in partial fulfillment of their training requirements. Consequently, there were more home visits made by the nurses; there were more sanitary inspectors who engaged in environmental sanitation projects; there were more health educators who undertook health education activities; - all under the professional guidance of the training staff. Certainly, the trainees helped immensely in the intensification and improvement of the quantity and quality of public health activities in the area.

Moreover, training is a two-way process. While the trainees were learning, the training staff with the other health personnel also learned. While experimenting with new techniques with the trainees,

outworn procedures were discovered and discarded, and new ones were developed and accepted, which meant professional growth for both. Similarly, the "trainers" learned with the trainees actual conditions in the field which brought them down from their ivory towers. In short, training activities in this health district helped keep the health personnel "on their toes". As the saying goes: "the dinner is apt to be better planned when there is company".

To summarize, the benefits reaped by the Novaliches Health District from the training program were:

1. The additional services of the training staff and the trainees who usually initiated new activities, introduced new methods and procedures, etc.;

2. Material and technical aid from national and international agencies, examples of which were the health equipment and transportation provided by the UNICEF, and technical assistance from WHO advisers and from local experts;

3. Prestige for the community for having been selected as a field training center.

4. Better quality of health services through better planning, executing and evaluating the training program.

APPLIED RESEARCHES AND SPECIAL STUDIES

Several researches and special studies were conducted by the Rural Health Demonstration and Training Center and Quezon City Health Department in the Demonstration Area as a basis for planning its community services as part of training experience. Among the researches conducted were:

1. A general survey of the total population to establish the necessary base-line data against which progress may be measured and as a basis for program planning.

2. A study of the completeness of birth registration.

3. DMF survey (survey of decayed, missing and filled teeth) among school children.

4. A study of the incidence of intestinal parasitism among school children and the reinfection rate.

5. Nutritional assessment of school children.

6. Research on sub-surface drainage with the use of bamboos for effluent pipes to improve the environmental sanitation.

7. A study of nutritional status of prenatal cases and infants by:

   (a) Hemoglobin determination among prenatal cases.
   (b) Heights and weights of infants.
   (c) Abnormalities of pregnancy.

8. Developmental study of school children by the use of Wetzel Grid Chart.

9. A study of the refuse collection system in Quezon City.

10. A study of a proposed self-liquidating incinerator for Quezon City submitted by a private firm.

11. A follow up of all resident births in Quezon City for improvement of immunization programs and for analysis of child health services and supervision as well as status of the infant at one year of age.

All these studies had usually been the precursor in the introduction of some health innovations. They somehow ensured that any change introduced was done in a scientific manner, rather than on a hit and miss basis.

CHAPTER IV

METHODOLOGY

The steps necessary for the gathering of data needed for this study may be categorized thus:

1. The establishment of base-line data against which changes in health practices may be measured. This was obtained through the house-to-house survey of the total population conducted in 1950 by the staff of the Rural Health Demonstration and Training Center and the results of special studies and applied research carried out by the same staff.

2. A resurvey of random samples of the original population and a repetition of the special studies in 1960.

3. A depth study of selected samples categorized as "strong acceptors" and "strong rejectors" of health innovations in accordance with certain established criteria.

4. Interview of 10 most chosen leaders of social and health change.

5. A review of annual reports of the Rural Health Demonstration and Training Center and the Quezon City Health Department and of other available data from other related agencies.

6. Observations made by the researcher (the researcher was a member of the Rural Health Demonstration and Training Center staff from 1950-1960).

The Establishment of Base-Line Data

The chief method employed for the establishment of base-line data was the 1950 house-to-house survey of the total population. The instrument used for this survey was designed by the staff of the Rural Health Demonstration and Training Center together with faculty members of the Institute of Hygiene, University of the Philippines. The survey schedule that was finally adopted (see Appendix "K") was studied closely by the Rural Health Demonstration and Training Center staff and the

necessary code to be used for accomplishing the schedule was decided upon. All the staff members then prepared themselves for the survey by acquainting themselves with the terrain, by preparing the necessary spot maps, and by orienting themselves with the techniques and principles of interviewing. Letters were then sent to the community leaders informing them of the purposes and period of the survey. In addition, community meetings were held.

The reasons why the researcher chose this district among the four others covered by the Rural Health Demonstration and Training Center was precisely because the Novaliches Health District was surveyed very carefully by the staff of the Rural Health Demonstration and Training Center under the direction and guidance of the Dean of the Institute of Hygiene, thereby ensuring a more or less reliable gathering of data. The other districts were surveyed by trainees as part of their training experience. As has been previously mentioned, the researcher was a member of the survey team.

For the purpose of this study, certain health indices were established in order to facilitate comparison of health conditions in the district for the years 1950 and 1960. These indices were:

1. Mortality and Morbidity Rates (1950 Vs. 1960).
2. Environmental Sanitation Practices of People
   a. Percentage of families with adequate toilet facilities.
   b. Percentage of families with adequate refuse disposal.
   c. Percentage of families with adequate and safe water supply.
3. Maternal and Child Health Practices

a. Percentage of expectant mothers with prenatal supervision.
b. Percentage of deliveries in hospitals and by professional health workers.
c. Percentage of infants and pre-school children with health supervision.
d. Percentage of infants and children immunized against smallpox, DPT (diptheria-pertussis-typhoid) and others.
e. Percentage of parasitic infestation among school children.
f. Nutritional status of mothers and infants as indicated by:

Hemoglobin count
Height and weight charts
Physician's diagnosis as indicated in the family health records.

g. Nutritional status of school children.

4. The Utilization of Health Resources

a. Percentage of deaths with medical attendance.
b. Percentage of families utilizing different types of health facilities.

5. Completeness of Birth Registration

a. Percentage of registered births.

6. Dental Health Practices

a. Percentage of children with decayed, missing or filled teeth.

7. Physical and other manifestations of changes in health facilities such as physical set-up of health centers and the training and qualifications of health and school health personnel.

The sources of information for the above health indexes were:

1. The result of the health survey schedule used in 1950. This yielded data for health indexes nos. 2 a, b & c; nos. 3 a, c & d and no. 4 b.

2. The birth and death certificates for 1950 and 1960 yielded data for health indexes nos. 1, 3 b and 4 a.

3. The special studies conducted by the RHD&TC and described in annual reports provided data for health indexes nos. 3 e & g; no. 5 and no. 6 a.

4. The family folders of health center clients served as the source for index no. 3 f.

5. The Progress and Semi-Annual Reports of the RHD&TC furnished data for health index no. 7 and for the description of the other health indexes as reported.

It was therefore necessary for the researcher to recover and analyze all these above-mentioned records for the establishment of the necessary base-line data.

The Resurvey and the Repetition of Special Studies

This being a longitudinal study over a 10 year period, it was essential that the same population surveyed in 1950 be resurveyed to the exclusion of new immigrants. For this purpose, as many as possible of the old survey schedules used in 1950 had to be recovered from three health centers in the health district. These were sorted out from the active and inactive files of said centers for these are now used as part of the family folder. The date of the survey and the names of the interviewer were checked to make sure that the family belonged to the original population.

The recovery rate was 93%; that is 1,430 of the original 1,541 survey schedules used in 1950 were recovered.

Numbers were then assigned to these survey schedules by arranging them alphabetically irrespective of the health centers from where they came. Through the use of the random table, the random sample was then drawn from these cards. The sample size was computed by allowing 6% maximum permissible error and using the formula:

$$n = \frac{4pq}{e^2}$$

where: n = the sample size

4 = $(2)^2$ with a confidence coefficient of 95%, $u = 1.96$ or approximately 2

p = proportion of the families that have changed

q = proportion of the families that did not change

e = maximum permissible error

Based on the hypothesis that 70% of the population would have changed their health practices after a decade, and applying the above formula we have:

$$n = \frac{4\ (.7)(.3)}{.06^2}$$

$$= \frac{4\ (.21)}{.0036}$$

$$= \frac{8400}{36}$$

$$= 233 \text{ families}$$

As shown above, the computed sample size is 233 but a total of 277 families was drawn or 18% of the original 1,541 families, to give an allowance for families that may have transferred residence or may have died.

The 277 sample families were then analyzed according to age, sex and geographical distribution in order to determine whether the sample population was comparable to and as proportionately distributed as the total population in terms of age, sex and geography. This was tested

for significance by using the measurement tool, the difference between sample proportion (p) and the population proportion (P) and the hypothesis formulated is, that the sample mean would equal the population mean, $p = P$.

A G E

Total population for 1950 8,183

Total population for 1960 random sample 1,446

(a) Computing the observed difference between the mean age of the population to the sample population,

mean for the population	≈	22.23 years
mean for the random sample	≈	21.90 years
Difference		0.33 years

(b) Computing for the variance of the population, by applying the formula:

$$\text{Variance or } \sigma^2 = \frac{\Sigma f x^2 - \frac{(\Sigma f x)^2}{n}}{n-1}$$

we get $\sigma^2 = 322.13$

(c) Solving for the standard error of the mean, by the formula:

$$\text{Standard error or } \sigma_{\bar{x}} = \sqrt{\frac{\sigma^2}{n}}$$

$$= \sqrt{\frac{322.13}{1446}}$$

$$= \sqrt{.222773}$$

$$= .472$$

(d) The ratio of the observed difference between the sample mean and the population mean to the standard error of the mean, by using the formula:

$$= \frac{(\bar{x} - u)}{\sigma_{\bar{x}}}$$

$$= \frac{.33}{.472}$$

$$= .699$$

Taking a level of significance at .05 and a constant (u) of 2, the value obtained which is .699 is not significant, which means that the sample is comparable to the population according to age.

This finding is further confirmed by the following table (Table I), inspection of which shows that the 2 populations are comparable.

Table II shows that by inspection, the difference of the males and females in the sample to the population are not significant and therefore are comparable.

G E O G R A P H Y

The geographical distribution for the 2 populations is comparable as evidenced by Table III.

A resurvey of the random sample was then undertaken using the same survey schedule form, used in 1950.

In addition to the data called for in the survey schedule, the following questions were asked:

1. What would you consider 10 of the most significant changes in this community in the last ten years?

2. Name 10 people who had something to do with these changes.

TABLE I

PERCENTAGE DISTRIBUTION OF THE POPULATION BY AGE-GROUPS
NOVALICHES HEALTH DISTRICT
1950 AND 1960

AGE-GROUP	Number		Percentage	
	1950	1960	1950	1960
0- 1	301	88	3.68	6.08
1- 4	1,117	195	15.65	13.48
5- 9	1,041	188	12.72	13.00
10-14	1,111	168	13.58	11.62
15-19	1,007	189	12.30	13.07
20-24	722	131	8.82	9.06
25-29	591	83	7.22	5.74
30-34	478	77	5.84	5.32
35-39	501	85	6.12	5.88
40-44	362	67	4.42	4.63
45-49	236	44	2.88	3.04
50-54	201	40	2.46	2.77
55-59	122	22	1.49	1.52
60-64	125	15	1.53	1.04
65-69	72	11	.88	.76
70-74	73	19	.89	1.31
75-79	44	8	.54	.55
80-84	49	9	.60	.62
85-89	7	1	.08	.07
90-94	13	2	.16	.13
95-99	3	2	.04	.13
100-104	3	1	.04	.07
105-109	4	1	.05	.07
All ages	8,183	1,446	100.00	100.00

Source: RHD&TC Progress Report, September 1 - December 31, 1950; 1960 random sample.

TABLE II

PERCENTAGE DISTRIBUTION OF THE POPULATION BY SEX
NOVALICHES HEALTH DISTRICT
1950 AND 1960

Date	Size	Males		Females	
		Number	Percent	Number	Percent
1950 Population	8,183	4,111	50.23	4,072	49.77
1960 Random Sample	1,446	717	49.58	729	50.42

Source: RHD&TC Progress Report, September 1 - December 31, 1950; 1960 Random Sample.

TABLE III

NUMBER AND PERCENTAGE OF FAMILIES, BY GEOGRAPHICAL DISTRIBUTION
NOVALICHES HEALTH DISTRICT
1950 AND 1960

BARRIOS	Number		Percentage	
	1950	1960	1950	1960
1. Aguardiente	12	2	.79	.72
2. Baesa	267	52	17.33	18.77
3. Bagbag	131	23	8.50	8.31
4. Balon-Bato	231	25	14.99	9.03
5. Binuksok	50	9	3.24	3.26
6. Cabuyao	13	2	.84	.72
7. Capre	13	2	.84	.72
8. Damong Maliit	26	5	1.69	1.80
9. Gulod	62	11	4.03	3.98
10. Ilang-Ilang	13	2	.84	.72
11. La Mesa Dam	11	2	.71	.72
12. Novitiate Compound	5	1	.32	.36
13. Kaibiga	15	3	.97	1.08
14. Pasacola	17	3	1.10	1.08
15. Pasong Putik	23	4	1.49	1.44
16. Poblacion	256	52	16.61	18.77
17. San Agustin	44	8	2.86	2.89
18. San Bartolome	120	24	7.79	8.66
19. Sangandaan	94	20	6.11	7.22
20. Santa Cruz	13	2	.84	.72
21. Talipapa	85	17	5.52	6.14
22. Uyo	40	8	2.59	2.89
TOTAL	1,541	277	100.00	100.00

Source: Appendix - RHD&TC Progress Report, September 1 - December 31, 1950; 1960 Random Sample.

3. What would you consider 10 of the most significant changes in the health practices of people in this community?

4. Name 10 people who had something to do with these changes.

These questions were asked on the assumption that community consciousness with respect to health and community problems and knowledge of the factors that contribute to them (the problems) as well as reference persons or groups may be factors that influence changes in health practices.

Two interviewers undertook this resurvey - the researcher herself and a research assistant. Prior to the actual resurvey, the research assistant was trained in the technique of interviewing. The codes that had to be used were listed down and all the necessary instructions and pertinent information were given. The research assistant was then trained in the art of interviewing before she was allowed to interview a portion of the sample population. As Garrett states,[25] "Interviewing is an art, a skilled technique that can be improved and eventually perfected primarily through continued practice."

Of the 277 random samples, 52 had to be rejected due either to the transfer of the family to other provinces or to death of both spouses, giving a reduced total of 225 resurveyed families. The data was then processed and analyzed. Tables comparable to those of the 1950 data were made to see if there were changes in the health practices in accordance with the health indices established.

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[25] Garrett, A.M., Interviewing, Its Principles and Methods, (New York: Family Welfare Association of America, 1942) pp. 8-9.

In order to find out who the "acceptors" and "rejectors" of modern health innovations were, the utilization of health center services was made as the first basis of classification. The population was therefore classified into "users" and "non-users" of health center services. The "users" were then grouped into "users" before the 1950 survey; "users" after the 1950 survey and "active users" up to 1960. The "users" before 1950 were given 1 point for using the services even before 1950; those "users" after 1950 were given 2 points for accepting the innovations introduced in 1950 and those who continued to use the services up to 1960 were given 3 points for continuous acceptance. The extent to which the different services of the health center were utilized were then taken into account -- general clinics, pre-natal or delivery services, post-natal services, well-child conferences or clinics, pre-school clinics and environmental sanitation services. Those who used the pre-natal clinic were given the most points (3) for it was believed that such a practice prevents abnormalities not only during pregnancy but also during delivery and promotes the health of the expected baby. Users of natal services were given 2 points for this practice protects both mother and child; the same weight was given for attendance at well-child conferences.

Table IV shows the weighted criteria used to establish who the "acceptors" and "rejectors" were. The "non-users", on the other hand, were classified into (a) those with change either because they have improved their environment through the construction of sanitary toilet, installation of safe water supply, better housing, better garbage and

TABLE IV

WEIGHTED CRITERIA ESTABLISHED FOR "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS

CRITERIA	ACCEPTORS		REJECTORS
	Users	Non-Users With Change	Non-Users
	Maximum Points Given	Maximum Points Given	Without Change
1. Utilization of Health Center	4	0	0
(a) Before 1950 1			
(b) After 1950 2			
(c) Before 1950-1960 ... 3			
(d) After 1950-1960 ... 4			
2. Utilization of the following Health Center Services	9	0	0
(a) Pre-natal 3			
(b) Natal 2			
(c) Well-Baby 2			
(d) General Clinic 1			
(e) Dental 1			
3. Utilization of Private Practitioners and other health facilities	1	1	0
4. Improvement in environmental sanitation	9	9	0
(a) General improvement in the construction of the house 2			
(b) Installation of private water supply . 2 or change of source of water supply (surface drilled well) . 1			
(c) Construction of toilet 2			
Septic 2			
Pit - Open .. ½ or .5			
Closed 1			
(d) Proper Drainage ... 1			
(e) Proper garbage disposal 1			
TOTAL	23	11	0

refuse disposal, better drainage, and fencing, or were utilizing the services of a private medical practitioner and (b) those without any change. Those who have not changed, were classified as "rejectors" and all the rest as "acceptors" of health innovations. The strong rejectors and acceptors were then picked out in accordance with the weighted criteria as shown in the table. (Table IV)

The characteristics of the "acceptors" and "rejectors" of health changes were then studied in terms of age distribution, occupation, literacy, presence of pre-school children in the family, presence and number of children in school, religion, size of the family, number of married children, reference persons and distance from the health center. The same was done when an equal number of strong "acceptors" were matched with strong "rejectors". The results were then tested for significance.

The Special Studies

The following special studies were repeated as a part of the Methodology:

I. Parasitic Survey and Mass Deworming of the School Children

In June, 1952, stool examination of 466 elementary school children in the Novaliches Health District from Grades I-VI were examined to determine the degree of infestation of intestinal parasitism with respect to ascariasis, ancylostomiasis, trichuriasis, oxyuriasis, etc. In order to ensure a high degree of collection, the teachers and the parents were informed about the importance of the study and a deworming program was promised thereafter. The technique of stool collection was

explained to both the teachers and the parents. Stools were collected either in small bottles or match boxes and were properly labelled by writing the name and the class of the pupil concerned. Classes were then scheduled for the daily collection of stool specimens. The laboratory technician was stationed in the school where he performed the stool examination.[26]

In October, 1960, a similar examination of 1,175 elementary school children from Grades I-VI was repeated using the same technique for stool collection and stool examination. This time, however, it was done with the cooperation of the Department of Parasitology, Institute of Hygiene, and the stools were examined in the laboratory of the Institute. This was because the same 1950 laboratory technician was no longer available and the researcher was already connected with the said institution.

II. DMF (Decayed, Missing and Filled Teeth) Survey

This survey simply consisted of making the children sit in the dental chair with the dentist counting off how many teeth are carious or decayed; how many have been extracted or are missing, and how many have been filled. This kind of survey was conducted in the Novaliches Health District as early as February 1951 together with a study of the number of children who have toothbrushes by the dentist of the RHD&TC. The size of the sample was 1,326 from elementary school pupils from Grades I-VI.

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[26] RHD&TC Semi-Annual Report (January 1-June 30, 1952).

The following were the objectives of the survey:

1. To determine the incidence of dental caries.
2. To determine the dental habits of the school children.
3. To serve as a phase of dental health education in order that children may be accustomed to seating in a dental chair and being seen by a dentist without experiencing any pain.[27]

This very same procedures were repeated on August 1960 by the same dentist of the RHD&TC with a sample size of 892 elementary school children from Grades I-VI.

III. Nutritional Assessment of the School Children

In November 1954, Dr. Joliffe, Chief, New York City Department of Nutrition together with Dr. Eufronio Carrasco, then of the Institute of Nutrition, Philippine Department of Health, conducted a nutritional assay of the school children of Novaliches Elementary School. They chose for their subjects 67 Grade IV pupils. The criteria used for the clinical examination and the corresponding vitamin deficiency were:[28]

(1) Scleral spot	Vitamin A
(2) Folicular hyperkeratosis	Vitamin A
(3) Xerosis cutis	Vitamin A
(4) Obvious protophobia	Vitamin A
(5) Perifeliculosis	Vitamin A & C

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[27] RHD&TC Progress Report (January 1-June 30, 1951) pp. 12-13.

[28] RHD&TC Semi-Annual Report (July 1-December 31, 1954) pp. 12-13.

(6) Magenta tongue	Vitamin B
(7) Papillary lesion	Vitamin B Complex
(8) Absence ankle jerks	Vitamin B^1
(9) Nasal labial seborrhea	Vitamin B^2
(10) Corneal vascularity	Vitamin B^2
(11) Angular stomatitis	Vitamin B^2
(12) Angular scars only	Vitamin B^2
(13) All gum lesion	Vitamin C
(14) Marginal gingivitis	Vitamin C
(15) Red tongue	Niacin
(16) Obesity	Over caloric intake

These above criteria were used because they were the most apparent clinical manifestations of avitaminoses. For the laboratory examination, the urine of the sample subjects were collected and examined for the riboflavin content by the Institute of Nutrition.

In August 1960, the same study was repeated on 79 Grade IV pupils of the Novaliches Elementary School. The clinical examination was again conducted by Dr. Eufronio Carrasco, in the absence of Dr. Joliffe, using the same criteria used in 1954. The urine of the samples were also examined for riboflavin content by the Department of Physiological Hygiene and Nutrition, Institute of Hygiene of which Dr. Eufronio Carrasco was the department head.

IV. Nutritional Assessment of Pre-natal Mothers and Infants and Pre-School Children

For the purpose of studying the nutritional status of pre-natal mothers and infants and pre-school children for 1950 and 1960, the

following indices were used:

1. The hemoglobin count among the prenatal cases 1951-53 and 1960.

2. A study of the abnormalities of pregnancy among the prenatal cases as shown in the maternity records of prenatal mothers in 1951-53 and 1960.

3. A study of the heights and weights of infants and pre-school children as shown in the records of the infants and pre-school children in 1951-53 and 1960.

1. The Hemoglobin Count Among the Prenatal Mothers

In 1950, hemoglobin determination was included as one of the routine procedures in the pre-natal examination. Blood was drawn during the first visit to the pre-natal clinic in order to determine whether mothers were anemic or not. The instrument used was the Sahli-Hellige Hemoglobinometer with standard calibration ranging from 2-18 gms./100 ml. The principle involved was the conversion of hemoglobin in the sample blood into acid hematin and comparing the colors with that of the standard scale. Decinormal Hcl was used as a diluting agent for converting hemoglobin into acid hematin so as to produce the brownish yellow color for comparative purposes; water was added for further dilution until the color of the sample was homogenous with that of the standard and then noting down the concentration of the Hb. in gms./100 cc. as indicated in the standard scale.

In August 1960, the same examination was repeated among the pre-natal cases in the Novaliches Health District. This time, Haden-Hausser Hemoglobinometer was employed due to the inavailability of Sahli-Hellige Hemoglobinometer. However, the principles involved for the 2 methods were essentially the same.

For the purpose of this study, the maternity records of the 197 prenatal cases examined in 1951-53 and 171 mothers examined for 1960 were analyzed for hemoglobin content in the blood according to the age of pregnancy and distribution of prenatal cases according to the hemoglobin concentration.

2. Study of Abnormalities of Pregnancy Among the Prenatal Cases

For this study, the maternity records of 197 mothers in 1951-53 and for 171 mothers in 1960 were used. In view of the limited number of mothers seeking prenatal supervision in 1951, the records of mothers up to 1953 were examined to get a bigger sample. The abnormalities present among these prenatal cases as indicated in the maternity records according to the diagnoses of the physician were studied in the belief that some of these abnormalities reflected the nutritional status of the prenatal cases. Examples of these were: edema, numbness, cramps, visual disturbances, easily fatigued, underweight, and the like.

3. A Study of the Heights and Weights of Infants and Pre-School Children

Among the routine procedures followed in the well-baby conferences was the regular weighing and measuring of the infants and pre-school children every time they come to the health center as per appointment. This helped to evaluate their growth and development.

For the purpose of this study, the records of the infants and pre-school children showing the heights and weights of 217 children in 1951-53 and 143 children in 1960 were studied to determine whether there had been any improvement in the growth and development of the children after the introduction of an intensive maternal and child health

program. These data were then analyzed according to age and sex distribution.

V. Completeness of Birth Registration

In 1951, a pilot study for improving the recording of births and deaths was conducted by the RHD&TC with the Quezon City Health Department. This was done because it was felt that there were many births not registered which gave a false picture of the infant mortality rate for Quezon City. In order to check the completeness of birth registration the following method was employed:

(1) The names of children registered as being born in 1950 were collected from the Birth Registry in Quezon City.

(2) Birth registry of the neighboring areas such as Manila, Caloocan and San Juan were examined to collect names of children born in these areas but whose parents were residents of Quezon City, in view of the fact that mothers usually gave birth in hospitals located in these areas and have their babies registered there.

(3) Death certificates of children that appeared to have been born in 1950 were also collected. The names of children collected in nos. 2 and 3 were matched against the names of the children in no. 1. By so doing, the number of children born during 1950 who were not registered or the degree of under-registration was determined.

The Depth Interview -

After the weighted criteria were applied to the sample population there was a total of 18 "strong rejectors" (those who did not show any change) or 8% of the random population that were identified. An equal number of "strong acceptors" were then picked out. With the 1950 and 1960 survey data as frames of reference, the interviewers went back to

the 36 familes for depth interview. As Gordon has stated the success of depth interviewing will depend upon a frame of reference which provides a theoretical bridge between the type of information needed and the techniques to be used in obtaining it. Thus the interviewer in the depth interview should be "permissive", "reflective", "non-directive" or should be following the principle of "minimal activity". Gordon further states that the information should be translated into socio-psychological categories sufficiently abstract to be widely applicable.[29]

It was consistently borne in mind that the statements the informants made could vary from purely subjective to almost objective statements. In evaluating the informant's statements, therefore, the interviewers tried to distinguish the subjective and objective components. But no matter how objective the informant seemed to be the interviewer's point of view was: "the informant's statement represents merely the perception of the informant, filtered and modified by his cognitive and emotional reactions and represented through verbal usage".[30]

The following criteria to detect distortion were used:

1. Implausibility.
2. Unreliability of the informant as an accurate reporter (as shown by conflicting statements during the different interviews).
3. Knowledge of an informant's mental set.

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[29]R. I. Gordon, "Dimensions of Depth Interview", The American Journal of Sociology, 42:2, (September, 1956), pp. 150-164.

[30]Dean & White, "How Do You Know If the Informant is Telling the Truth", Human Organizations, 17:2, Summer 1958, pp. 34-35.

4. Cross-check - a comparison of an informant's account with those of other informants.[31]

When the interviewers went back for the depth interview, they were already armed with certain information about the family as gathered from the 1960 survey data which were confirmed by the Health Center personnel. For example, they already knew whether there has been a change in the family's economic, social and civil status and whether they are "strong acceptors" or "strong rejectors" of health innovations. All that the interviewers did during the depth interviews was to make an opening remark such as: "We have noticed that you have a new house, I remember that your house used to be .....". Through such non-directive approach, after establishing the necessary rapport, the informant was allowed to express her feelings and her attitudes on the matter. The interviewers abstained from asking leading questions. For example, instead of saying "Why did you not do this, ..." they said "You now go to the health center ....." and then would just allow the informant to speak on. The projective technique of asking question was employed.

For this depth interview, the interviewers sought the answers to the following questions:

(1) What are the reasons for or for not accepting health innovations that were introduced by the RHD&TC and Quezon City Health Department during the decade?

(2) Did such factors as: change of the status of the family in the community, the educational level, the reference persons and groups, civil status, kinship, presence of older people, age of the heads of the

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[31] Dean & White, "How Do You Know If the Informant is Telling the Truth", Human Organizations, 17:2, Summer 1958, pp. 36-40.

family, the influence of schools, ages of siblings, change in economic status, change in occupation, relationships with health center personnel, distance to the poblacion and the change in the socio-economic stature of the community itself influence their being "strong acceptors" or "strong rejectors" of health innovations?

The Interview of the 10 Most Chosen Leaders -

As had been previously mentioned, in addition to the items included in the survey schedules used in 1950, an attempt was made to make a study of the health and social changes perceived by the interviewees during the decade and to get their opinions as to the ten most influential people who were responsible for these changes.

Through an analysis of the data, the ten most frequently mentioned leaders were identified in relation to the changes for which they were responsible. These 10 people were then interviewed to determine whether they would identify the same changes and the same leaders mentioned by the random population. In other words, they served as the "key informants".[32]

Key informants - are the primary source of information on a variety of topics. These people are therefore interviewed intensively for the purpose of cross-checking the information gathered from the sample population.

The different characteristics of these groups with regard to age, sex, religion, occupation, educational level, political affiliation,

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[32]Marc-Adelard Tremblay, "The Key Informant Technique, a Non-ethnographic Application, American Anthropologist, 59:4 (August, 1957) p. 688.

social contacts, etc. were studied to find out what kinds of people served as opinion leaders or gate keepers of social and health change in this particular area.

Review of Annual Reports of the Quezon City Health Department and the Rural Health Demonstration and Training Center and of Other Allied Agencies -

All the progress reports, semi-annual reports and bulletins of the Rural Health Demonstration and Training Center submitted to the UNICEF, WHO and to the Office of the President for the period 1950-1960 were collected and studied. To complement and supplement this, data were gathered from the annual reports of the Quezon City Health Department, the Bureau of Agricultural Extension, Bureau of Soil Conservation, Bureau of Lands, Weather Bureau, Bureau of Census and Statistics, Bureau of Commerce, Quezon City Treasurer's Office, Quezon City Engineering Section, Bureau of Public and Private Schools, Quezon City Register of Deeds, Quezon City Assessor's Office, Quezon City Library and other such allied agencies.

Observation -

By definition, participant observation[33] - is a method in which the observer participates in the daily life of the people under study either openly in the role of the researcher or covertly in some disguised role, observing things that happen, listening to what is said and questioning people, over some length of time.

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[33] H. S. Becker & B. Geer, "Participant Observation and Interviewing, a Comparison", Human Organization, 16:3 (Fall 1957).

The researcher, therefore, by virtue of her being a member of the RHD&TC staff from 1950-1956 and by virtue of her continuous contact with the district under study which has served as a laboratory for her graduate students at the Institute of Hygiene, may be considered a participant observer during the decade.

Becker[34] mentioned the following advantages of participant observation versus interviewing:

(1) It provides situations in which errors may be rectified and meanings are clarified.

(2) Matters interviewees are unable or unwilling to talk about are seen.

(3) Things people see through distorting lenses can be checked and seen in the proper light.

(4) Increased accuracy.

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[34] H. S. Becker & B. Geer, "Participant Observation and Interviewing, a Comparison", Human Organization, 16:3 (Fall 1957).

CHAPTER V

COMPARISON OF THE FINDINGS OF THE 1950 AND 1960 SURVEYS

In order to compare the findings of the 1950 and 1960 surveys, certain indices were established. The findings were presented in this chapter in accordance with these established indices.

I. Mortality and Morbidity Rates, 1950 and 1960

By inspection, Table V shows that there has been a decline in the general mortality, infant mortality and morbidity rates. Also, by inspection it is easily seen from Table VI that there has been a general decline in 1960 in the ten leading causes of deaths for 1950, except in the pneumonias. This is compatible with the national figures in which pneumonia is the number 1 cause of death. This may be explained by better diagnosis of the causes of death and by the fact that pneumonia may not have been the underlying cause of death for it usually is a complication of other diseases. Also, there has been a change in classification of deaths, diseases and injuries.

Infantile beri-beri which was number 1 cause of death in 1950 no longer appeared as a cause of death in 1960. This may be due to improved diagnosis of infant death in 1960 and/or to better pre-natal, natal, and child health supervision. As shown in Tables VII and VIII where the causes of neonatal deaths for 1950 and 1960 have been broken down, 20 of the 31 babies who died in 1950 before reaching one month of age died of beri-beri. Table VIII shows beri-beri was no longer a cause in 1960. This may be an indication that the diagnosis of the cause of death for 1950 was inaccurate. For example, Smith states,

"Neither clinical experience nor clinical measurements have yet indicated that infants during the neonatal period are likely to suffer from deficiencies of other vitamins such as vitamin A, thiamine, riboflavin, niacin ....."[1]

Furthermore, Table VI shows that diseases peculiar to infancy which ranked number 3 in 1950 ranked number 5 in 1960. Again, this may be attributed to improved prenatal, natal and child health supervision or again to better diagnosis.

Pulmonary tuberculosis, while still ranking as the number two cause of death, has been reduced by almost 50%. This may be attributed to greater consciousness on the part of the populace with regards to tuberculosis control as well as to better treatment with the introduction of chemotheraphy. Malaria no longer appears in 1960 as a cause of death. This may be a reflection of the success of the malaria eradication program or it may have been precipitated by the increasing urbanization of the area as a result of which favorable breeding places for malaria mosquitoes had been cleared.

The gastro-intestinal diseases, while slightly lower in rate, have gone up as the number three (3) cause of death possibly because of the abrupt reduction in the other causes of death causing this disease to go up in rank. Also, while there were evidences of improved sanitation, the improvement has not been a total one. For example, while there has

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[1] C. Smith, The Physiology of Newborn Infant, First Edition, (Springfield, Illinois: Charles C. Thomas, Publisher, 1946), p. 239.

been an increase in sanitary toilets, there has not been installed a municipal water system.

It will also be noted in the 1960 figures that chronic diseases such as the cardio-vascular diseases and cancer as well as accidents have entered the picture. This may be an indication that there is a growing number of the aging population which may be attributed to better medical attention and control of communicable diseases. This may also be accounted for by the migration of retired employees who have decided to live the rest of their lives in the district.

TABLE V

VITAL STATISTICS, NOVALICHES HEALTH DISTRICT, QUEZON CITY, 1950 AND 1960

	1950	1960
1. Population	8,183	24,000 (Estimated Population as of 1958)
2. Mortality		
Number of deaths, All Causes	78	184
Crude Death Rate per 1,000 population	9.53	6.76
3. Morbidity		
Number of Cases	366	821
Rate per 1,000 Population	44.73	34.21
4. Live Births (as Registered)		
Number	206	584
Birth Rate per 1,000 Population	25	25
5. Infant Deaths		
Number	50	106
Infant Mortality Rate per 1,000 Live Births	247.2	181.5
6. Neonatal Deaths		
Number	31	51
Neonatal Mortality Rate per 1,000 Live Births	15.05	8.73

SOURCE: 1950 and 1960 Birth and Death Certificates, Novaliches, Office of Local Registry, Quezon City.

TABLE VI

LEADING CAUSES OF DEATHS IN NOVALICHES HEALTH DISTRICT, QUEZON CITY 1950 AND 1960

DISEASE	1950			1960		
	No.	Rate/ 1,000	Rank	No.	Rate/ 1,000	Rank
1. Infantile Beriberi	30	3.66	1	-	-	-
2. Pulmonary T.B.	11	1.34	2	21	0.87	2
3. Disease Peculiar to Infancy	8	0.98	3	16	0.67	5
4. Senility	7	0.85	4	16	0.67	4
5. Pneumonia	6	0.73	5	63	2.62	1
6. Gastro-Intestinal Diseases	6	0.73	6	17	0.71	3
7. Malaria	3	0.37	7	-	-	-
8. Bronchitis	2	0.24	8	-	-	-
9. Tetanus	2	0.24	9	-	-	-
10. Ill-Defined Diseases	2	0.24	10	-	-	-
11. Immaturity	-	-	-	12	0.50	6
12. Cardio-Vascular Diseases	-	-	-	9	0.37	7
13. Genito-Urinary Diseases	-	-	-	8	0.33	8
14. Cancer	-	-	-	6	0.25	9
15. Accidents	-	-	-	3	0.12	10

SOURCE: Death Certificates, 1950 and 1960, Office of Local Registry, Quezon City.

TABLE VII

NEONATAL DEATHS, BY CAUSES, NOVALICHES DISTRICT
1950 DEATH CERTIFICATES, QUEZON CITY

CAUSES OF NEONATAL DEATHS	NUMBER		PERCENTAGE OF TOTAL
1. Infantile Beriberi		20	64.52
2. Diseases Peculiar to Infancy		7	22.58
a. Immaturity	4		
b. Congenital Debility	3		
3. Respiratory Diseases		4	12.90
a. Broncho-pneumonia	3		
b. Bronchitis	1		
T O T A L		31	100.00

TABLE VIII

NEONATAL DEATHS, BY CAUSES, NOVALICHES DISTRICT
1960 DEATH CERTIFICATES, QUEZON CITY

CAUSES OF NEONATAL DEATHS	NUMBER		PERCENTAGE OF TOTAL
1. Respiratory Diseases		26	50.98
a. Broncho-pneumonia	25		
b. Bronchitis	1		
2. Diseases Peculiar to Infancy		24	47.06
a. Immaturity	12		
b. Congenital Debility	10		
c. Foetal Asphyxia	2		
3. Tetanus Neonatorum		1	1.96
T O T A L		51	100.00

SOURCE: Death Certificates, 1950 and 1960, Office of Local Registry, Quezon City

II. Environmental Sanitation Practices of People

Tables IX, X and XI reflect improvement in the environmental sanitation practices of people. Table IX shows that there has been significant increase in the number of adequate toilet facilities in the area, from 7.9% to 71.11%. Whereas in 1950 having a toilet was the exception, in 1960 having no toilet was the exception. This may likely be attributed to the intensive health education program in environmental sanitation within the decade.

Table X shows an increase in the number of families using burning as a means of garbage and refuse disposal. This is considered the most adequate in the absence of garbage collection and where composting has not been generally accepted. Again it may be assumed that people are more health conscious and realize the importance of proper garbage disposal.

Table XI is a comparison of the sources of drinking water of the families in 1950 and 1960. Only a total of 7% in 1960 used inadequate sources (surface well, spring well, deep dug well and combination of other sources) in contrast to 31% in 1950.

TABLE IX

NUMBER AND PERCENTAGE OF HOUSEHOLDS, BY TYPES OF TOILET FACILITIES, NOVALICHES DISTRICT 1950 AND 1960

TYPES OF TOILET	NUMBER				PERCENTAGE OF TOTAL			
	1950		1960		1950		1960	
1. Surface Toilet) Inade-	736)	1296	37)	65	52.3)	92.1	16.45)	28.89
2. Open Pit) quate	560)		28)		39.8)		12.44)	
3. Closed Pit)	23)		105)		1.6)		46.67)	
4. Septic Tank) Adequate	80)	112	50)	160	5.7)	7.9	22.22)	71.11
5. Vault Type)	9)		5)		0.6)		2.22)	
TOTAL	1,408		225		100.00		100.00	

SOURCE: Appendix, RHD&TC Progress Report, September 1 - December 31, 1950; 1960 Random Sample.

TABLE X

DISTRIBUTION OF 1,430 FAMILIES, BY REFUSE AND GARBAGE DISPOSAL NOVALICHES DISTRICT, QUEZON CITY 1950 AND 1960

Refuse and Garbage Disposal	NUMBER		PERCENT OF TOTAL	
	1950	1960	1950	1960
1. Burning	285	158	16.74	70.22
2. Dumping	775	11	50.29	4.89
3. Combination	397	56	26.76	24.89
TOTAL	1,430	225	93.00	100.00

SOURCE: Recovered Survey Schedules, 1950; 1960 Random Sample.

TABLE XI

NUMBER AND PERCENTAGE OF FAMILIES, UTILIZING DIFFERENT SOURCES OF DRINKING WATER, NOVALICHES DISTRICT 1950 AND 1960

SOURCE	NUMBER		PERCENT OF TOTAL	
	1950	1960	1950	1960
1. Artesian or Drilled Well	1,055	208	68.5	92.44
a. Private		118		52.44
b. Public		90		40.00
2. Surface Well	370	2	24.0	0.9
3. Tap Water, MWD	7	2	0.1	0.9
4. Spring Well	48	0	3.0	0.0
5. Deep Dug Well	39	11	3.0	4.86
6. Rain Water	0	0	0.0	0.0
7. Combination of Different Sources	22	2	1.4	0.90
TOTAL	1,541		100.00	100.00

SOURCE: Appendix, RHD&TC Progress Report, September 1 - December 31, 1950; 1960 Random Sample.

III. Maternal and Child Health Practices

An examination of Tables XII-XV would indicate a definite improvement in the maternal care practices of mothers in the district.

Table XII shows that 76.9% of the expectant mothers sought prenatal supervision in 1960 in contrast to 6.14% in 1950.

Table XIII shows that there has been a greater utilization of licensed health workers during the period of delivery - 69.6% in 1960 as compared to 30.3% in 1950.

These changes may be attributed partly to the intensive maternal care program instituted by the Rural Health Demonstration and Training Center and the Quezon City Health Department since 1950 which entailed the detail of additional physicians, nurses and other health workers in the area on top of the WHO technical consultants in Maternal and Child Health (one physician and one nurse). Furthermore, there were a number of public health trainees, mostly nurses and midwives, who contributed much in the intensification of the maternal care program through their family case studies (including home visits) and clinic services. Besides, the emphasis of the whole public health program was on maternal and child health, hence the health education program stressed this aspect. Furthermore, the mothers of 1960 may relatively be better educated than those of 1950.

Table XIV shows that the nutritional status of expectant mothers has improved taking hemoglobin content of the blood as an index. In 1950, the mean hemoglobin content in grams per 100 cc. was 8.98; in 1960, 10.23. While the generally accepted average hemoglobin content in grams per 100 cc. is 13 among pregnant women,[2] still the increase may reflect an improvement in the nutritional practices of mothers and in better management of pre-natal cases in the health centers. For example, while the common practice before 1950 was the administration of thiamine and calcium injections, this has given way to the

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[2] W. Dickman, "Normal and Abnormal Physiology", The Toxemias of Pregnancy, 2nd ed. (St. Louis: The C.V. Mosby Co., 1952) p. 79.

administration of iron and multi-vitamin pills and enriched rice which contains thiamine, iron and niacin.

Table XV further substantiates the findings in Table XIV. There has been a general decrease in the abnormalities of pregnancy with an increasing number of normal cases. Beri-beri is conspicuously absent in 1960, which may reflect better diagnosis. Underweight, nausea and vomitting, edema, dizziness and headache have decreased - all of which may be manifestations of better nutrition and better pre-natal care, thus preventing the latter three symptoms of toxemia of pregnancy. Caries, while conspicuously absent, may not be actually so. The physician and/or the nurse may not have been as dental health conscious as they were in 1951-53 when the dental health program was well integrated into the Maternal and Child Health program, with the Rural Health Demonstration and Training Center dentist taking an active role.

It may also be worth noting here that nutrition education was well integrated into the various phases of the public health program during the decade. With the help of other allied agencies such as the Bureau of Agricultural Extension, the Bureau of Plants, the Bureau of Animal Husbandry, the Bureau of Commerce, the ACCFA (Agricultural Credit Cooperative and Farming Association), the FACOMA (Farmers Cooperative and Marketing Association), the Bureau of Public Schools, the Social Welfare Administration, and others, nutrition education was carried on hand in hand with agricultural development, food production and distribution.

TABLE XII

NUMBER AND PERCENTAGE OF EXPECTANT MOTHERS WITH PRENATAL SUPERVISION 1950 AND 1960

Year	Total Number	With Prenatal Care	Percent of Total
1950	114	7	6.14
1960	13	10	76.92

SOURCE: Survey Data, Midyear 1950, Progress Report, RHD&TC, September 1-December 31, 1950; 1960 Survey of Random Sample.

TABLE XIII

NUMBER AND PERCENTAGE OF DELIVERIES IN NOVALICHES DISTRICT AS ATTENDED BY "HILOT" AND LICENSED HEALTH PERSONNEL 1950 AND 1960

Attending Physician	Number of Deliveries		Percent of Total	
	1950	1960	1950	1960
1. Hilot (Unlicensed Midwife	164	177	79.61	30.31
2. Licensed Health Personnel	42	407	20.39	69.69
a. Physician	11 (26.19%)	78 (19.16%)		
b. Nurse	9 (21.43%)	10 (2.47%)		
c. Licensed Midwife	22 (52.38%)	319 (78.37%)		
T O T A L	206	584	100.00	100.00

SOURCE: 1950 and 1960 Birth Certificates, Office of Local Registry, Quezon City.

TABLE XIV

DISTRIBUTION OF PRENATAL CASES, BY MONTHS OF PREGNANCY AND MEAN HEMOGLOBIN CONTENT, NOVALICHES DISTRICT 1951-53 AND 1960

Months of Pregnancy	Number of Prenatal Cases		Mean Hemoglobin in gms./100 cc.	
	1950	1960	1951-53	1960
2	5	4	10.0	12
3	11	4	10.2	10.6
4	24	9	9.4	10.3
5	34	32	9.1	9.9
6	32	27	8.6	9.9
7	35	43	8.8	10.1
8	39	33	8.6	9.9
9	17	19	8.8	10.1
T O T A L	197	171	8.98	10.32

SOURCE: 1951-53 Maternity Records of Prenatal Cases

**Repetition of Special Study in 1960.

RANGE:	1951-53	1960
	4-14 gms	6-14 gms.

Note: The taking of the hemoglobin content in prenatal clinics was started in 1951. There were very few cases in 1951, hence prenatal cases up to 1953 were considered in order to get an equivalent size of samples as those of 1960.

TABLE XV

SOME ADVERSE SYMPTOMS OF PREGNANCY AMONG THE PRENATAL CASES IN NOVALICHES DISTRICT, 1951-53 AND 1960

ADVERSE SYMPTOMS	NUMBER		PERCENT OF TOTAL	
	1951-53	1960	1951-53	1960
Total Number of Cases	197	171		
A. Total Number with Adverse Symptoms	167	121	84.77	70.87
1. Dizziness and Headache	79	53	40.10	30.99
2. Numbness	78	48	39.59	28.07
3. Caries	61	0	30.96	0.0
4. Nausea and Vomitting	52	19	26.36	11.11
5. Edema	48	30	24.36	17.54
6. Easily Fatigued	21	14	10.65	8.19
7. Difficulty of Breathing	10	0	5.08	0.0
8. Underweight	7	2	3.55	1.17
9. Cramps	7	10	3.55	5.84
10. Insomnia	5	14	2.54	8.19
11. Beriberi	6	0	3.38	0.0
12. Visual Disturbance	4	0	2.03	0.0
B. Number of Normal Cases	30	50	15.23	29.13

SOURCE: 1951-53 Maternity Records.

**Repetition of Special Study in 1960.

*A mother may manifest one or all the above-mentioned abnormalities thus the percent does not sum up to 100%.

B. Child Care Practices - The indices established to reflect improvement in child-rearing practices were:

a. The percentage of infants having child health supervision.

b. The percentage of children who have been immunized.

c. The average height and weight of children by age.

d. Intestinal parasitism among school children.

e. Nutritional status among school children.

It may be safely deduced from a study of Tables XVI-XIX that there has been definite improvements in infant and pre-school child care practices.

Table XVI shows that the percentage of infants receiving health supervision increased from 13% in 1950 to 65.4% in 1960. Again, this may have resulted from the stress laid on the maternal and child care program. In order to gain the cooperation of the community with regards to this aspect of the program, a Citizen's Health and Welfare Council was organized early in 1950. Through this, the help of the "tenientes del barrio", the officers of the Ladies Association, the Parent-Teacher's Association and other community leaders was enlisted and through them pre-natal and nursing mothers were canvassed and informed about the available health center services. This was done by blocks and neighborhoods. In addition, special study groups were organized for teen-agers, mothers and fathers since the inception of the Rural Health Demonstration and Training Center in almost every

nook and corner of the health district with the purpose of teaching parents, parents-to-be and grandparents of the importance of pre-natal, natal and child health supervision. It was gratifying to observe that after the completion of these classes there was notable increase in the attendance to the pre-natal and well-baby clinics. To reinforce these, home visits were intensified by the public health nurses and midwives (including the public health nurse trainees) and the sanitary inspectors.

Prior to 1950, mothers brought their children to the health center only when sick. After the introduction of the above-mentioned programs, it was a pleasure to see how mothers religiously kept their appointments with the well-baby clinics, sometimes even during inclement weather, and to note the increasing number of healthy babies. As was observed by the researcher in the well-child clinics in Novaliches in 1960, the physician could hardly cope with the attendance. It was a striking contrast to the dearth of mothers who used to come in 1950 with their underdeveloped, sickly looking infants.

While Tables XVII and XVIII may not speak very well of the immunization program, still they do reflect some success. Table XVII shows that there has been an increase in the number of infants showing positive reaction to smallpox vaccine - from 8% in 1950 to 29.3% in 1960. While it may mean that only 1/3 of the infants have been immunized against smallpox in 1960, this may not actually reflect the truth of the matter. More infants may have been vaccinated but may not have

developed a positive reaction and therefore did not show any scar. The presence of a scar was the criterion used for evaluating positive reaction.

The same reason may be advanced for the decrease in the percentage immunized against smallpox in the total population as shown in Table XVIII. Also, there may have been less vigilance on the part of the public and public health workers as far as smallpox vaccination was concerned in view of the absence of threatened outbreaks of smallpox epidemics within the decade.

The percentage of immunization against cholera, typhoid and dysentery has increased slightly and it can be averred that the increase should have been more. There have been some questions raised about the effectivity of the vaccine during the decade particularly its effectiveness against dysentery. To this may be ascribed the seeming relaxation with regards to the vaccine. Also, there were questions raised as to the role of the sanitary inspector in the immunization program at the time. Some quarters opined that the sanitary inspectors should devote more of their time to environmental sanitation control rather than to immunization as they had used to. On the other hand, Table XVIII also shows that in 1950 nobody had been immunized against diphtheria-pertussis and tetanus whereas 23.07% have been immunized in 1960. It may be easily deduced that this immunized group belongs to the younger age groups inasmuch as this was among the innovations introduced in 1950 in the management

of infants and children in the well-child conferences. The figures may actually be higher as there was a tendency for some mothers to forget inasmuch as this was something with which they were not very familiar.

Table XLX shows that there has been a consistent increase in height and weight among children from 0-6. While this is so, some may question the fact that this is due to improved child-rearing practices that has resulted from the public health program. There is the factor of heredity to contend with, inasmuch as the 1960 children were not necessarily born of the same parents as those of 1951-53. It may further be advanced that there has been a continuous migration due to industrialization and sub-urbanization. The fact remains, however, that the emphasis laid on the early introduction of supplementary food, a practice from which mothers shied away because of the many food taboos and superstitions that existed, was gradually accepted. The distribution of UNICEF milk and vitamin preparations to expectant mothers and infants may have been contributing factors plus the fact that the children had more regular health supervision.

Another index used with respect to maternal and child care practices was the health status of school children as revealed by the incidence of intestinal parasitism, nutritional status and the percentage of decayed, missing and filled teeth.

TABLE XVI

NUMBER AND PERCENTAGE OF INFANTS WITH HEALTH SUPERVISION
NOVALICHES HEALTH DISTRICT
1950 AND 1960

YEAR	TOTAL	With Health Supervision	Percent
1950	301	40	13.0
1960	107	70	65.4

SOURCE: Appendix, RHD&TC Progress Report, September - December 1950; 1960 Survey Data.

TABLE XVII

NUMBER AND PERCENTAGE OF INFANTS WITH POSITIVE REACTION TO SMALLPOX VACCINE, NOVALICHES HEALTH DISTRICT
1950 AND 1960

YEAR	TOTAL	Positive for Smallpox Vaccine	Percent of Total
1950	301	24	8
1960	107	26	24.3

SOURCE: Appendix, RHD&TC Progress Report, September - December 1950; 1960 Survey Data.

TABLE XVIII

NUMBER AND PERCENTAGE OF THE POPULATION IMMUNIZED AGAINST CHOLERA-TYPHOID AND DYSENTERY, SMALLPOX AND DIPHTHERIA-PERTUSSIS AND TETANUS, NOVALICHES HEALTH DISTRICT
1950 AND 1960

Year	Total	CTD		Smallpox		DPT	
		No.	%	No.	%	No.	%
1950	8,183	1,795	22	6,027	74	0	0
1960	1,556	408	26.22	1,057	67.9	359	23.07

SOURCE: Appendix, RHD&TC Progress Report, September-December 1950; 1960 Survey Data.

TABLE XIX

DISTRIBUTION OF THE MALE AND FEMALE INFANTS AND PRE-SCHOOL CHILDREN, BY SEX, AGE, AVERAGE HEIGHT AND WEIGHT
NOVALICHES HEALTH DISTRICT
1951-1953 AND 1960

Age in Years	MALES						FEMALES					
	Number		Average Height (Cm.)		Average Weight (Lbs.)		Number		Average Height (Cm.)		Average Weight (Lbs.)	
	1951-53	1960	1951-53	1960	1951-53	1960	1951-53	1960	1951-53	1960	1951-53	1960
0 - 1	48	55	59.00	62.59	12.25	14.40	39	53	58.00	64.44	12.01	14.95
1	22	8	70.31	75.92	16.91	19.83	23	7	70.03	75.13	17.10	19.96
2	18	4	75.02	78.88	21.04	23.82	14	4	74.20	78.70	20.70	23.70
3	10	1	81.75	84.80	23.00	25.90	15	6	79.70	87.60	21.31	24.75
4	8	1	85.58	93.98	26.54	29.00	5	1	83.70	90.20	24.40	27.48
5	7	1	91.07	96.52	28.47	32.00	5	0	96.80	0	29.26	0
6	1	1	107	111	39.89	39.00	2	1	101.50	110	31.70	38
TOTAL	114	71					103	72				

SOURCE: 1951-53 Infant and Pre-School Child Health Records, Novaliches Health Center.

RANGES

	MALES		FEMALES	
	1951-53	1960	1951-53	1960
Height	30.5 - 107 cm.	50 - 111 cm.	30 - 101.5 cm.	48.80 - 110 cm.
Weight	4.5 - 33.89 lbs.	7.7 - 39 lbs.	5 - 31.7 lbs.	6.11 - 38 lbs.

Intestinal Parasitism

Table XX shows that there has hardly been a decrease in the incidence of intestinal parasitism among school children in spite of the very evident increase in the number of sanitary toilets. This seems to be incompatible. However, this seeming discrepancy may be explained by the fact that the installation of adequate toilet was not the whole answer to the problem. Besides, 28.8% have not constructed any and therefore were still potential sources of infection.

As has been shown in other studies, partial improvement in sanitary environment does not result in significant decline in rate of infection. Garcia, E. G. et al have pointed out that the more important measures to follow or to implement in the control of intestinal helminths are sanitary disposal of human feces and health education. with emphasis on family and personal hygiene .....[3] It may also be mentioned that it has been observed that the rate of intestinal parasitism was higher among the younger groups of children. It was the same age groups who have the habit of defecating anywhere inspite of the presence of toilets; who love to play with the soil without properly observing the rules of personal hygiene, such as washing the hands before eating and after defecating. Furthermore, proper food sanitation may not have been closely observed in the homes and in food establishments thereby exposing the food to dust, flies and unclean hands.

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[3]Edito G. Garcia, et al, "Reinfection Rates of Successfully Treated Ascariasis", Journal of Philippine Medical Association, 37:4 (April 1961), p. 242.

All these foregoing factors may easily explain why the rate of intestinal parasitism had not declined.

Besides, while the rate may not have been reduced, it may be possible that the worm burden per child may have been reduced. This aspect, however, was not included in the study.

Another factor that may be considered was the fact that the 1960 survey was conducted by a different group of researchers. As previously mentioned, it was undertaken by the Department of Parasitology of the Institute of Hygiene, University of the Philippines. It may be safely assumed that this group was more skilled than the ones who conducted the 1951 survey. Had the 1960 researcher conducted the 1951 survey, it may be possible that the rate could have been higher, hence the possibility of a reduction in rate cannot be totally dismissed.

TABLE XX

INCIDENCE OF INTESTINAL PARASITISM AMONG THE SCHOOL CHILDREN, NOVALICHES ELEMENTARY SCHOOL 1951 AND 1960

Types of Intestinal Parasites	1950		1960	
	No.	% of Total	No.	% of Total
Ascaris	218	51.66)	225	33.08)
Trichuris	37	8.77)	53	7.79)
		)73.45		)72.56
Hookworm	4	0.95)	19	2.79)
Multiple Infection (one or more parasites)	51	12.07)	197	28.88)
No Parasite	112	26.55	186	27.44
T O T A L	422	100.00	680	100.00

Nutritional Status

Tables XXI-A and B may reflect the nutritional status of Grade IV school children in Hovaliches Health District.

It would seem that the most important finding shown in Table XXI-A was the reduction in rate in angular stomatitis from 58.0% in 1954 to 6.3% in 1960 which was very suggestive of an increase in riboflavin intake. While this may seem to conflict with the increase in nasal labal seborrhea, magenta tongue and papillary lesion (all manifestations of riboflavin deficiency) the increase in angular scars only from 10.5% to 64% may indicate that the deficiency was in the process of regression inasmuch as there were many cases that had healed thus leaving scars only, that is, assuming that those that had left angular scars were healed angular stomatitis. Whatever doubts there are on the matter is however offset by the results of the chemical examination of the urine of the same children as shown in Table XXI-B. This reveals a definite increase in riboflavin excretion which is a reflection of increased riboflavin intake. It may be stated in this connection that the urine examination is a more objective index[4] inasmuch as the other manifestations are subject to the clinical eye of the person making the diagnosis.

The other manifestations observed shall not be considered inasmuch as there are many other factors that should be taken into account before one can say what they suggest. Actually, because of the small size of the sample no conclusive statements can be made.

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[4]James McLester and William J. Darby, Nutrition and Diet in Health and Disease, 6th ed., (Philadelphia & London: W. B. Saunders Co., 1952) p. 73.

TABLE XXI-A

SOME NUTRITIONAL MANIFESTATIONS OBSERVED AMONG GRADE IV SCHOOL CHILDREN
NOVALICHES ELEMENTARY SCHOOL
1954 AND 1960

Manifestation of Nutritional Deficiencies*	SCHOOL CHILDREN OBSERVED							
	MALE		FEMALE		TOTAL			
					Number		Percent of Total	
	1954	1960	1954	1960	1954	1960	1954	1960
Total No. of Children					67	79		
1. Obesity	0	0	2	1	2	1	3.0	1.2
2. Nasal labial seborrhea	2	12	4	18	6	30	9.0	38.0
3. Corneal vascularity	1	0	3	0	4	0	6.0	0
4. Obvious photophobia	0	0	0	0	0	0	0	0
5. Scleral spot	7	2	3	0	10	2	16.0	2.5
6. Angular stomatitis	26	5	13	0	39	5	58.0	6.3
7. Angular scars only	5	27	2	24	7	51	10.5	64.0
8. Magenta tongue	3	18	3	22	6	40	9.0	50.6
9. Red tongue	1	0	2	0	3	0	4.5	0
10. Papillary lesion	6	17	6	25	12	42	18.0	53.2
11. All gum lesion	20	1	10	3	30	4	45.0	5.0
12. Marginal gingivitis	9	8	5	23	14	31	21.0	39.2
13. Perifolliculosis	0	0	0	0	0	0	0	0
14. Folicular hyperkeratosis	0	1	1	1	1	2	1.5	2.5
15. Absence ankle jerks	1	0	0	0	1	0	1.5	0
16. Xerosis cutis	19	32	11	27	30	59	45.0	74.7

TABLE XXI-B

CHEMICAL EXAMINATION OF URINE OF GRADE IV CHILDREN, NOVALICHES ELEMENTARY SCHOOL NOVEMBER 1954 AND AUGUST 1960

Microgram of Riboflavin/gm. Creatinine	CHILDREN EXAMINED			
	Number		Percent of Total	
	1954	1960	1954	1960
Less than 200 mcg. riboflavin/gm. creatinine	20	21	32.2	28
More than 200 mcg. riboflavin/gm. creatine	33	8	53.2	10.56
More than 300 mcg. riboflavin/gm. creatinine	9	46	14.6	61.44
T O T A L	62	75	100.00	100.00

Table XXII shows that as the children grew older, the number of decayed, missing and filled teeth increased. The same trend was observed in the 1960 study. Comparing the 1950 and the 1960 figures, it will be noted that there has been a rise in the percentage of school children with one or more DMF teeth. Again, this seems incompatible with the intensified dental and school health program instituted since 1950. This may however be explained by the fact that, since the urbanization of the area, the school children have been more exposed to soft drinks, candies, pastries and other sugar-rich diet and they eat less of the local fruits like guavas, santol, papaya, pomelos and other citrus fruits that they used to eat. The association between high dental caries rate and free sugar in the diet has been accepted by a number of workers.

TABLE XXII

MEAN DMF (DECAYED, MISSING AND FILLED TEETH) AND PERCENT OF CHILDREN WITH AND WITHOUT ANY DMF TEETH BY AGE GROUP, NOVALICHES HEALTH DISTRICT
1951 AND 1960

Age Last Birthday	7		8		9		10		11		12		13		14	
	1951	1960	1951	1960	1951	1960	1951	1960	1951	1960	1951	1960	1951	1960	1951	1960
Mean DMF	1.5	1.8	2.5	2.6	2.5	3.1	3.5	4.1	4.9	5.4	5.7	5.9	7.1	6.3	7.3	7.7
% Without DMF	30.2	26.5	22.7	16.2	13.3	16.6	10.0	10.9	6.0	4.1	3.1	4.7	1.8	4.7	2.9	0
% With One or More DMF	69.8	73.5	77.3	83.3	86.7	83.4	90.0	89.1	94.0	95.9	96.9	95.3	98.2	95.3	97.1	100.00

SOURCE: Semi-Annual Report, RHD&TC, January - June 1952; Repetition of Special Study, 1960.

Size of Sample for 1951 1,326 School Children

Size of Sample for 1960 892 School Children

IV. The Utilization of Health Resources

Another index used to establish changes in health practices was the increased utilization of health resources reflected by: (1) the percentage of deaths with medical attendance and (2) the percentage of families utilizing different types of health facilities.

1. Percentage of deaths with medical attendance as shown in the death certificates:

1950	1960
39.74%	71.71%

2. Percentage of families utilizing different types of health facilities as gathered from the 1950 and 1960 surveys:

1950	1960
47.9%	92%

The above figures show that there has been definite improvement in the utilization of health resources within the decade. This may be attributed to the educational program that was continuously carried out and to the growing acceptance by the people of modern health practices. The factors related to this acceptance shall be discussed more at length later in this chapter.

V. Completeness of Birth Registration

Completeness of birth registration was used as an index of health change because it is believed that this vitally affects the health profile of the community. Infant mortality rate is considered a very sensitive index of the improvement of health conditions in a community. Under-registration of birth will give a false health picture in that

it will result in a seemingly higher infant mortality rate.

In a study conducted by the Rural Health Demonstration and Training Center on the completeness of birth registration in the rural areas of Quezon City in 1950 it was shown that:

1. There was a marked under-registration of birth, inasmuch as 40.5% of the total births were not registered.

2. The reported Infant Mortality Rate was therefore higher than the actual Infant Mortality Rate due to said under-registration. Reported I.M.R. was 181.5 per 1,000 whereas actual I.M.R. (after correction) was only 75.4 per 1,000.

The correction was made by listing all the births and deaths of infants who resided in Quezon City as gathered from the registry of Quezon City, Manila, and suburbs. It should be noted that many mothers, although residents of Quezon City deliver elsewhere and therefore babies are registered by place of delivery rather than by residence. The same thing happens when the babies are brought to hospitals outside of Quezon City and die and/or are interred outside of Quezon City. Therefore, it was necessary to make a listing of births and deaths by residence. The death certificates were then matched with the birth certificates. This yielded the following findings:

(1950)

From Registry of Quezon City alone:

$$\frac{\text{149 infant deaths}}{\text{821 live births}} \text{ or I.M.R. = 181.5}$$

From Registry of Quezon City, Manila, and Suburbs:

$$\frac{149 \text{ infant deaths}}{821 + 299 + 2 \text{ live births}} \text{ or I.M.R.} = 163.1$$

This was further corrected by matching the birth certificates with records of baptismal certificates, health center records, survey records, and records of infant deaths. The following results were obtained:

$$\frac{149 \text{ infant deaths}}{821 + 299 + 2 + 649 + 114} \text{ or I.M.R.} = 75.4$$

This shows that the actual live births was 1,885 against 821 as gathered from the Quezon City Registry. Of these, 763 or 40.5% were not registered giving rise to a false picture of a high infant mortality rate.

This study was partly repeated in 1960 by using the 1959 registry, inasmuch as the 1960 registry was not yet ready at the time of the study. The study yielded the following results:

TABLE XXIII

TOTAL INFANT BIRTHS AND DEATHS BY RESIDENCE, RURAL AREAS, QUEZON CITY, IN 1959 ACCORDING TO PLACE OF REGISTRY

Place of Registry	Births	Total Infant Deaths	Deaths: With Certificate of Birth	Deaths: Without Certificate of Birth
1. Quezon City	2,205	214	46	168
2. Manila	643	88	35	53
3. Suburbs	75	1	0	1
T O T A L	2,923	303	81	222

Computing the Infant Mortality Rate from the above figures:

(1) From the Registry of Quezon City alone:

$$\frac{214 \text{ infant deaths}}{2205 \text{ live births}} \text{ or I.M.R.} = 97.0$$

(2) From the Registry of Quezon City, Manila and Suburbs:

$$\frac{214 + 88 + 1}{2205 + 168 + 643 + 53 + 75 + 1} = \frac{303}{3145} = 96.2$$

As shown in the above table, there were a total of 303 deaths, 222 of which did not have birth certificates. This means that there were 222 other live births in addition to the 2,923 registered giving a total of 3,145 actual live births. In 1959, therefore, 222 or 7% of 3,145 births were not registered in contrast to 40.5% in 1950.

Time did not allow matching further with baptismal certificates and other sources but the difference within the 9 years is certainly significant. This may have resulted from more births and deaths with medical attendance, from the educational program conducted and from a better referral system between Quezon City Health Department and other health departments.

From the foregoing discussion, it is obvious that, as far as the established health indices for this study are concerned there had been favorable changes in the health practices of the people in Novaliches Health District (see Table XXIV). The fact that total mortality (especially from infectious diseases) and infant mortality rates have declined carry with them a great deal of implications as far as health behavior of the people was concerned. It is an accepted fact that

infant mortality is a sensitive index of the health level of an area and one readily responsive to environmental sanitation.[5] The same is true with mortality rates from infectious diseases, for "high death rates for the infectious diseases are related to poor conditions of the physical environment such as deteriorated and crowded housing, poor diet and inadequate medical care."[6] It may be deduced therefore that the decline in total and infant mortality rates reflect the improvement in environmental sanitation practices. This is confirmed by evident improvements in the source of water supply, in the system of waste and garbage disposal as well as in the general housing conditions of the people. The maternal and child health practices have likewise become in consonance with scientific health practices. The nutritional status has in some respects been improved. The health facilities are better utilized and the registration of birth is more complete.

V. Other Manifestations of Changes

Even the physical set-up of the health centers bear witness to these improvements. Whereas the 2 health centers in 1950 were housed in rented buildings that were in semi-dilapidated conditions, these 2 health centers are now located in decent buildings. Through the

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[5]Odin Anderson, "Infant Mortality and Social and Cultural Factors: Historical Trends and Current Patterns". Patients, Physicians and Illness, ed. F. G. Jaco (Illinois: The Free Press, 1958), p. 11.

[6]John M. Ellis, "Socio-Economic Differentials in Mortality From Chronic Diseases". Patients, Physicians and Illness, ed. E. Gartley Jaco (Illinois: The Free Press, 1958), p. 34.

TABLE XXIV

EVALUATION OF THE INDICES ESTABLISHED WHICH REFLECTED CHANGES IN HEALTH PRACTICES OF THE PEOPLE BETWEEN 1950 AND 1960 NOVALICHES HEALTH DISTRICT, QUEZON CITY

Indices	Observed Difference	Std. Error of the Difference	$t = \frac{p - P}{S.E_p}$ Value	Remarks
1. Sanitary toilet facilities	.6321	.0179	35.31	Significant**
2. Adequate source of drinking water	.2774	.0304	13.66	Significant**
3. Adequate refuse disposal	.6321	.0179	35.31	Significant**
4. Immunization against smallpox	.0600	.0135	4.44	Significant*
5. Immunization against CTD	.0422	.0205	2.05	Significant*
6. Cases with medical attendance	.3977	.0622	6.39	Significant*
7. Utilization of the different types of health facilities	.4755	.0331	14.36	Significant**
8. Incidence of the DMF (Decayed, Missing, Filled) teeth	.0836	.0146	5.73	Significant**
9. Adequate riboflavin intake	.4683	.06527	7.17	Significant**
10. Prenatal cases with health supervision	.7078	.0673	10.52	Significant**
11. Infants with health supervision	.5242	.0325	16.13	Significant**
12. Incidence of intestinal parasitism	.0095	.0278	.342	Not significant
13. Hemoglobin levels among the prenatal cases	1.34 gms.	137 gms.	9.79 gms.	Significant**
14. Abnormalities of pregnancy among prenatal cases	.1284	.0428	3.0	Significant*
15. Deaths with medical attendance	.3200	.0645	4.9	Significant**
16. Morbidity rates	10.53/1,000	.404/1,000	26.01/1,000	Significant*
17. Mortality rates	1.86/1,000	.404/1,000	4.60/1,000	Significant*

* - level of significance at P = .05

** - level of significance at P = .001

efforts of the citizens, particularly the Ladies Association, the Novaliches Health Center in 1960 was housed in a modern structure which was inaugurated in 1958 and was far better equipped than it was in 1950. The same was true of the Tandang Sora Health Center which has been completely rennovated since 1950. In addition, a new health center has been set up in Balintawak.

The public health personnel has also increased. Whereas there used to be a team (one physician, one nurse, one midwife, one dentist, and one sanitary inspector) who served both the main health center and the sub-center, the Quezon City Health Department had assigned a separate public health team to the Tandang Sora and Balintawak Health Centers. The Tandang Sora Health Center in 1960 was considered a main health center.

Through a continuous professional training and staff development program, the public health personnel were better prepared to perform their public health functions. A number of nurses were finishing their bachelor's degree and trying to improve their professional skills. The health center physician of Novaliches had already trained abroad. As had been mentioned, one of the advantages that accrue from being utilized as a demonstration and training center is that the staff has to be "on their toes" all the time.

With all these evidences of improvement in the health practices of the people which may have come about through the inception of an intensive public health program through the years one of the questions that come to mind is: Who were the people that tended to accept

health innovations and who did not? What were the characteristics of these "acceptors" of health change and how did they differ from the "rejectors"?

ACCEPTORS AND REJECTORS OF HEALTH INNOVATIONS

In order to be able to analyze the factors related to the changes reflected in the established indices, the random population was classified into "acceptors" and "rejectors" of modern health practices. As was mentioned in the methodology this was done by first classifying the sample families into "users" and "non-users" of health center services after 1950.

Table XXV-A shows that 138 or 61.33% of the sample families were "users" and 87 or 38.67% were "non-users" of the health center services. One cannot presuppose, however, that all the "non-users" of health center services were "rejectors" inasmuch as they may have adopted modern health practices and may have utilized the services of private medical practitioners although they were not utilizing the health center. Hence, the "non-users" were further classified into <u>those with change</u> and <u>those without change</u> as shown in Table XXV-B. Only 18 or 20.69% of the "non-users" did not show any change, whereas 60 or 79.31% of the "non-users" showed some changes in health practices. Considering this 18 who did not show any change as the "strong rejectors" of modern health practices, it would appear that only 8% of the sample families were "strong rejectors" and 92% were "acceptors" as shown in Table XXV-C.

In order to get a corresponding number of "strong acceptors", the 207 families classified as "acceptors" were ranked according to certain weighted criteria (see page 69). The first 18 with the highest scores were classified as the "strong acceptors".

TABLE XXV-A

NUMBER AND PERCENTAGE OF RESPONDENTS CLASSIFIED AS USERS AND NON-USERS OF HEALTH CENTER SERVICES, 1950-1960 NOVALICHES HEALTH DISTRICT, Q.C.

	Number	Percent of Total
Non-Users	87	38.67
Users	138	61.33
T O T A L	225	100.00

TABLE XXV-B

NUMBER AND PERCENTAGE OF NON-USERS OF HEALTH CENTER SERVICES CLASSIFIED ACCORDING TO CHANGES IN HEALTH PRACTICES NOVALICHES HEALTH DISTRICT, 1950-1960

NON-USERS	Number	Percentage
1. Without any change	18	20.69
2. With change as shown by:	69	79.31
(a) Utilization of private medical practitioners and other health facilities	18 (26.09%)	
(b) Improved environmental sanitation. (Improved toilets, water supply, garbage disposal and housing construction)	17 (24.64%)	
(c) Combination of (a) & (b)	34 (49.27%)	
T O T A L	87	100.00

TABLE XXV-C

NUMBER AND PERCENTAGE OF ACCEPTORS AND REJECTORS OF MODERN HEALTH PRACTICES IN NOVALICHES HEALTH DISTRICT 1960

	Number	Percent
Acceptors	207	92
Users	138	
Non-users with change	69	
Rejectors		8
Non-users without change	18	
T O T A L	225	100

The following tables show the distribution of the heads of families of "acceptors" and "rejectors" according to age, occupation, literacy, religion, size of family, children in school, presence of pre-school children, distance from the health center, presence of married children and reference persons.

Table XXVI-A shows that the age of "acceptors" ranged from 25 to 105 years and up; that 52% of the "acceptors" belonged to the younger age group 25-49 and 48% belonged to the older group 50 and above. The same age distribution holds true with the "rejectors"; 50% belonged to the younger age group and 50% belonged to the older age group. It appears that as far as age distribution is concerned, there is no difference between the rejectors and acceptors of health practices.

Table XXVI-B shows that the "acceptors" were distributed in all levels of occupation. However, 100% of the professionals and

intermediate occupations were "acceptors" whereas the "rejectors" belonged to the lower occupation levels. The four lower occupational levels did not show any significant difference in the acceptance of health innovations.

Table XXVI-C shows that of the literates 95.4% were "acceptors" while only 4.6% were "rejectors". Among the illiterates, 20.5% were "rejectors". Taking the percent of the total number of "acceptors" and "rejectors", it will be seen that 81% of the "acceptors" were literates against only 44.5% of the "rejectors".

Table XXVI-D would seem to point that the Protestants, the Seventh Day Adventists, and the Iglesia Ni Kristo were more progressive in that 100% of those who professed these religions were all "acceptors". On the other hand 95% of the "rejectors" belonged to the Catholic religion. However, the samples were so unequally distributed, in favor of the Catholic religion resulting in very small samples for the other religious sects as for the results to merit any conclusive statements. Religion, when subjected to Chi-square test did not prove significant.

It was presumed that if there were more pre-school children in the family there would be greater need for health supervision for the children and for providing the necessary health facilities. However, Table XXVI-E disproves this hypothesis. The percentage of "acceptors" with pre-school children was even a little less than those without.

There is a great deal of claim laid on the carry-over of health teachings in the schools to the home. Table XXVI-F seems to bear

this out. More than three-fourths or 77.3% of the total number of "acceptors" had children in school in contrast to only one-half or 55.5% of the "rejectors". Less than one-fourth or 22% of the "acceptors" did not have children in school as compared with almost one-half or 44.5% of the "rejectors". When subjected to the Chi-square test, this factor is not significant.

An inspection of Table XXVI-G would seem to point to the fact that the "acceptors" belonged to the large-sized families with the majority belonging to families with two (2) to seven (7) members, whereas the "rejectors" belonged to smaller-sized families with majority falling into families with two (2) to five (5) members. None of the rejectors belonged to families with more than ten members in contrast to 15% of the acceptors who belonged to families larger than ten.

Table XXVI-H shows that there was definitely a greater percentage of "rejectors" without married children (83.3%) than "acceptors" (52.1%). Conversely, there was a greater percentage of "acceptors" with married children (48%) than "rejectors" (16%).

By inspection, Table XXVI-I shows that the nearer the distance to the health center, the more "acceptors" there were, and vice-versa. The major number of "acceptors" lived 1 km. or less away from the health center while majority of the "rejectors" lived 3-6 kilometers away.

It will be noted from Table XXVI-J that the ten people that were most frequently mentioned as the community leaders were mostly

mentioned by the "acceptors". Most of the "rejectors" did not have reference persons; they could not even identify any community leader.

It can be seen therefore that the outstanding differences between the "acceptors" and "rejectors" of health change were: (1) there were more literates among the acceptors, (2) the higher occupational level were all "acceptors", (3) more of the "acceptors" had children in school, (4) there were more married children among the "acceptors", (5) "acceptors" came from larger-sized families, (6) "acceptors" lived near the health centers, and (7) "acceptors" had reference persons in the community.

TABLE XXVI-A

DISTRIBUTION OF 225 FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS BY AGE GROUPS NOVALICHES HEALTH DISTRICT, 1960

Age Group (Years)	Total	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
T O T A L	225	207	92.0	18	8.0
25 - 29	3	3	100.0	0	0
30 - 34	22	19	86.4	3	13.6
35 - 39	23	22	95.6	1	4.4
40 - 44	24	22	91.7	2	8.4
45 - 49	45	42	93.3	3	6.7
50 - 54	26	25	96.1	1	3.9
55 - 59	19	19	100.0	0	0
60 - 64	28	23	82.1	5	17.9
65 - 69	13	12	92.3	1	7.7
70 - 74	10	9	90.0	1	10.0
75 - 79	4	3	75.0	1	25.0
80 - 84	3	3	100.0	0	0
85 - 89	2	2	100.0	0	0
90 - 94	2	2	100.0	0	0
95 - 99	0	0	0	0	0
100 - 104	0	0	0	0	0
105 Up	1	1	100.0	0	0

TABLE XXVI-B

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS BY OCCUPATION
NOVALICHES HEALTH DISTRICT
1960

Occupation	Total	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
TOTAL	225	207	92.0	18	8
1. Professionals	3	3	100.0	0	0
2. Intermediate (Teachers, marchants, proprietors)	23	23	100.0	0	0
3. Skilled (employee, military service, contractor, driver, etc.	52	46	89.4	6	10.6
4. Partly Skilled	68	62	91.2	6	8.8
5. Unskilled	29	28	96.5	1	3.5
6. Non-Earners	50	45	90.0	5	10.0

TABLE XXVI-C

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS BY LITERACY* NOVALICHES HEALTH DISTRICT, Q.C. 1960

Literacy	Total	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
T O T A L	225	207	92.0	18	8.0
Literates	176	168	95.4	8	4.6
Illiterates	49	39	79.5	10	20.5

*A literate is one who can read and write.

$X^2 = 13.234$ D.F. = 1

T = 3.84 P. = .05

TABLE XXVI-D

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS BY RELIGION NOVALICHES HEALTH DISTRICT, Q.C. 1960

Religion	Total	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
T O T A L	225	207	92.0	18	8.0
1. Catholics	204	187	91.7	17	8.3
2. Protestants	10	10	100.0	0	0
3. Seventh Day Adventist	4	4	100.0	0	0
4. Iglesia Ni Kristo	5	5	100.0	0	0
5. Aglipayans	2	1	50.0	1	50.0

TABLE XXVI-E

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS, BY PRE-SCHOOL CHILDREN NOVALICHES HEALTH DISTRICT 1960

Pre-School Children	Total	ACCEPTORS		REJECTORS	
		Number	Percent of Total	Number	Percent of Total
1. With Pre-School Children	146	134	64.24	12	66.66
2. Without Pre-School Children	79	73	35.76	6	33.33
T O T A L	225	207	100.00	18	100.00

TABLE XXVI-F

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS, BY CHILDREN IN SCHOOL NOVALICHES HEALTH DISTRICT 1960

Children in School	Total	ACCEPTORS		REJECTORS	
		Number	Percent of Total	Number	Percent of Total
1. With Children in School	170	160	77.30	10	55.5
(a) Elementary	79			4	
(b) High School	15			2	
(c) College	4			0	
(d) Combination	62			4	
2. Without Children in School	55	47	22.70	8	44.5
T O T A L	225	207	100.00	18	100.00

TABLE XXVI -G

SIZE OF FAMILIES OF "ACCEPTORS" AND REJECTORS" OF HEALTH INNOVATIONS BY NUMBER AND PERCENT, NOVALICHES HEALTH DISTRICT, 1950 TO 1960

SIZE OF FAMILY	Total	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
1	0	0	0	0	0
2	8	6	75.0	2	25.0
3	19	16	84.2	3	15.8
4	23	21	91.3	2	8.7
5	29	24	82.4	5	17.6
6	29	27	93.1	2	6.9
7	39	38	97.4	1	2.6
8	26	25	96.2	1	3.8
9	24	24	100.0	0	0
10	13	11	84.6	2	15.4
11	7	7	100.0	0	0
12	3	3	100.0	0	0
13	3	3	100.0	0	0
14	2	2	100.0	0	0
T O T A L	225	207	92.0	18	8.0

TABLE XXVI-H

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS BY NUMBER OF MARRIED CHILDREN
NOVALICHES HEALTH DISTRICT
1960

Married Children	Total	ACCEPTORS		REJECTORS	
		Number	Percent of Total	Number	Percent of Total
With Married Chidren	102	99	47.82	3	16.66
Without Married Children	123	108	52.18	15	83.34
T O T A L	225	207	100.00	18	100.00

$X^2 = 6.719$ D.F. = 1

T = 3.84 P. = .05

TABLE XXVI-I

DISTRIBUTION OF 225 RANDOM FAMILIES CLASSIFIED AS "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS BY DISTANCE FROM HEALTH CENTER NOVALICHES HEALTH DISTRICT 1960

DISTANCE (KMS.)	Total	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
1. Less than 1 km.	84	83	98.8	1	1.2
2. Approximately 1 km.	57	54	94.7	3	5.3
3. Approximately 2 kms.	46	42	91.1	4	8.9
4. Approximately 3 kms.	21	18	85.7	3	14.3
5. Approximately 4 kms.	11	6	54.5	5	45.5
6. Approximately 5 kms.	6	4	66.6	2	33.3
T O T A L	225	207		18	

$X^2 = 32.1$ D.F. = 5

T = 12.59 P. = .05

TABLE XXVI-J

TEN MOST FREQUENTLY MENTIONED COMMUNITY LEADERS* BY 225 FAMILY HEADS ACCORDING TO THE NUMBER OF TIMES MENTIONED BY "ACCEPTORS" AND "REJECTORS" OF HEALTH INNOVATIONS
NOVALICHES HEALTH DISTRICT
1960

Reference Persons	No. of Times Mentioned	No. of Barrios in which Mentioned	ACCEPTORS		REJECTORS	
			Number	Percent	Number	Percent
A	53	12	51	96.2	2	3.8
B	34	11	32	94.1	2	5.9
C	28	5	28	100.00	0	0
D	21	5	19	90.5	2	9.5
E	20	7	20	100.00	0	0
F	17	2	14	82.4	3	17.6
G	15	6	15	100.00	0	0
H	8	2	8	100.00	0	0
I	8	4	8	100.00	0	0
J	7	5	7	100.00	0	0

*A respondent may mention all the 10 reference persons.

To confirm the findings heretofore discussed, 18 "strong acceptors" were selected according to the weighted criteria heretofore mentioned and were matched with the 18 "strong rejectors".

Table XXVII-A shows that the 18 "strong acceptors" came from ages 28 to 64 with majority coming from ages 25 to 49. On the other hand, the "strong rejectors" came from ages 30 to 79 with 50% distributed among ages 50 to 79.

Table XXVII-B shows that 17 of the 18 or 95% "acceptors" had increased income over the 10 year period. None of the "strong acceptors" belonged to the group "non-earner" and 66% belonged to the intermediate and skilled groups of the occupational level. Of the "strong rejectors" only 11.1% had increased income over the 10 years and this belonged to the intermediate and skilled groups with 88.9% without having any increase in income. More than one-third (38.9%) were non-earners. This seems to be in consonance with the findings of Koos and other workers which proved that an individual's attitude towards health is related to his socio-economic status.

By inspection, Table XXVII-C reveals that educational level is a factor in the acceptance of health innovations. None of the 18 "strong acceptors" were illiterates whereas 55% of the "strong rejectors" were. The rest of the "rejectors" (45%) only finished Grades I to IV. Only 5% of these reached Grade V. On the other hand, the lowest grade that the "strong acceptors" finished was Grade III and the highest was high school. This again concurs with other studies which showed that an individual's health behavior is a function of his educational level.

Table XXVII-D shows the same findings as Table XXVI-D. While all the Protestants again proved to be all acceptors, no conclusive statement can be made because of the limited size of sample.

Table XXVII-E again proves that the number of pre-school children in the family does not necessarily influence that family to accept or reject health innovations. The number of "acceptors" and "rejectors" with and without pre-school children were exactly the same. There is not much difference either in the number of children in school between the 2 groups. Two-thirds of the "acceptors" and more than one-half of the "rejectors" had children in school (see Table XXVII-F).

Again Table XXVII-G shows that the "acceptors" belonged to large-sized families (83% came from families with 7-14 members) while the "rejectors" came from smaller-sized families (majority came from families with 2-5 members).

Table XXVII-H again shows that more of the "strong acceptors" had married children than did the "rejectors".

Table XXVII-I again proves that distance to the health center is a factor in the acceptance of health innovations. All the "strong acceptors" lived 1 kilometer or less from the health center.

Table XXVII-J shows that the "strong acceptors" could identify their community leaders and could name at least three (3) at a time. Only two of the 18 "strong acceptors" did not name any of the 10 frequently mentioned community leaders but they did name others. In contrast only 3 of the 18 "strong rejectors" could identify community

leaders. This may indicate that the rejectors did not belong to any membership or reference groups.

TABLE XXVII-A

DISTRIBUTION OF THE 36 FAMILY HEADS CLASSIFIED AS "STRONG ACCEPTORS" AND "STRONG REJECTORS" OF HEALTH INNOVATIONS, BY AGE COMPOSITION (1950-1960)

Age-Group	Total	STRONG ACCEPTORS		STRONG REJECTORS	
		Number	Percent	Number	Percent
25-29	2	2	11.10	0	0.0
30-34	4	2	11.10	2	11.10
35-39	4	3	16.68	1	5.56
40-44	2	1	5.56	1	5.56
45-49	8	5	27.78	3	16.68
50-54	1	0	0.0	1	5.56
55-59	2	2	11.10	0	0.0
60-64	8	3	16.68	5	27.78
65-69	2	0	0.0	2	11.10
70-74	2	0	0.0	2	11.10
75-79	1	0	0.0	1	5.56
T O T A L	36	18	100.00	18	100.00

TABLE XXVII-B

DISTRIBUTION OF 36 FAMILY HEADS CLASSIFIED AS "STRONG ACCEPTORS" AND "STRONG REJECTORS" OF HEALTH INNOVATIONS, BY OCCUPATION
NOVALICHES HEALTH DISTRICT, QUEZON CITY
1950-1960

OCCUPATION	18 ACCEPTORS				18 REJECTORS			
	Increased Income		No Increase		Increased Income		No Income	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1. Professionals	0	0.0	0	0	0	0.0	0	0.0
2. Intermediate	4	22.3	0	0	1	5.55	0	0.0
3. Skilled	8	44.5	0	0	1	5.55	2	11.1
4. Partly Skilled	3	16.7	1	5	0	0	7	38.9
5. Unskilled	2	11.1	0	0	0	0	0	0.0
6. Non-earner	0	0.0	0	0	0	0	7	38.9
T O T A L	17	95.0	1	5	2	11.1	16	88.9

TABLE XXVII-C

LEVEL OF EDUCATIONAL ATTAINMENT OF THE 36 FAMILY HEADS CLASSIFIED AS "STRONG ACCEPTORS" AND "STRONG REJECTORS" OF HEALTH INNOVATIONS NOVALICHES HEALTH DISTRICT, QUEZON CITY 1960

LEVEL OF EDUCATION	STRONG ACCEPTORS		STRONG REJECTORS	
	Number	Percent of Total	Number	Percent of Total
Grade I	0	0.0	1	5.56
Grade II	0	0.0	3	16.67
Grade III	3	16.67	2	11.10
Grade IV	3	16.67	1	5.56
Grade V	2	11.10	1	5.56
Grade VI	5	27.79	0	0.0
Grade VII	3	16.67	0	0.0
High School	2	11.10	0	0.0
Illiterate	0	0.0	10	55.55
TOTAL	18	100.00	18	100.00

TABLE XXVII-D

RELIGION OF THE HEADS OF THE 36 RESPONDENTS
NOVALICHES DISTRICT, Q.C.
1960

RELIGION	ACCEPTORS		REJECTORS	
	Number	Percent of Total	Number	Percent of Total
1. Catholic	15	83.32	17	94.44
2. Protestant	3	16.68	0	0.0
3. Aglipay	0	0.0	1	5.56
TOTAL	18	100.00	18	100.00

TABLE XXVII-E

DISTRIBUTION OF THE 36 "STRONG ACCEPTORS" AND "STRONG REJECTORS" BY NUMBER OF PRE-SCHOOL CHILDREN
NOVALICHES DISTRICT, Q.C.
1960

PRE-SCHOOL CHILDREN	STRONG ACCEPTORS		STRONG REJECTORS	
	Number	Percent	Number	Percent
1. With Pre-School Children	12	66.66	12	66.66
2. Without Pre-School Children	6	33.34	6	33.34
TOTAL	18	100.00	18	100.00

TABLE XXVII-F

DISTRIBUTION OF THE 36 "STRONG ACCEPTORS" AND "STRONG REJECTORS" BY CHILDREN IN SCHOOL, NOVALICHES DISTRICT, Q.C.
1960

CHILDREN IN SCHOOL	STRONG ACCEPTORS		STRONG REJECTORS	
	Number	Percent	Number	Percent
1. With Children in School	12	66.67	10	55.55
2. Without Children in School	6	33.33	8	44.45
T O T A L	18	100.00	18	100.00

TABLE XXVII-G

DISTRIBUTION OF THE 36 FAMILIES CLASSIFIED AS "STRONG ACCEPTORS" AND "STRONG REJECTORS" OF HEALTH INNOVATIONS BY SIZE OF THE FAMILY (1950-1960) NOVALICHES DISTRICT, Q.C.

SIZE OF THE FAMILY	ACCEPTORS		REJECTORS	
	Number	Percent	Number	Percent
1	0	0.0	0	0.0
2	0	0.0	2	11.10
3	0	0.0	3	16.68
4	2	11.10	2	11.10
5	0	0.0	5	27.78
6	1	5.56	2	11.10
7	2	11.10	1	5.56
8	4	22.22	1	5.56
9	5	27.78	0	0.0
10	1	5.56	2	11.12
11	1	5.56	0	0.0
12	1	5.56	0	0.0
13	0	0.0	0	0.0
14	1	5.56	0	0.0
T O T A L	18	100.00	18	100.00

TABLE XXVII-H

DISTRIBUTION OF THE 36 FAMILIES CLASSIFIED AS "STRONG ACCEPTORS" AND "STRONG REJECTORS" OF HEALTH INNOVATIONS BY NUMBER OF MARRIED CHILDREN NOVALICHES DISTRICT, Q.C. 1960

NUMBER OF MARRIED CHILDREN	STRONG ACCEPTORS		STRONG REJECTORS	
	Number	Percent of Total	Number	Percent of Total
With Married Children	8	44.45	3	16.66
Without Married Children	10	55.55	15	83.34
T O T A L	18	100.00	18	100.00

TABLE XXVII-I

DISTANCE TRAVELED BY THE 36 "STRONG ACCEPTORS" AND "STRONG REJECTORS" TO THE HEALTH CENTER NOVALICHES HEALTH DISTRICT, Q.C. 1960

DISTANCE	STRONG ACCEPTORS		STRONG REJECTORS	
	Number	Percent of Total	Number	Percent of Total
Less than 1 km.	14	77.78	1	5.55
Approximately 1 km.	4	22.22	3	16.66
Approximately 2 kms.	0	0.0	4	22.26
Approximately 3 kms.	0	0.0	3	16.66
Approximately 4 kms.	0	0.0	5	27.77
Approximately 5 kms.	0	0.0	2	11.10
TOTAL	18	100.00	18	100.00

TABLE XXVII-J

TEN MOST FREQUENTLY MENTIONED COMMUNITY LEADERS BY 225 FAMILY HEADS ACCORDING TO THE NUMBER OF TIMES MENTIONED BY 18 "STRONG ACCEPTORS" AND 18 "STRONG REJECTORS" OF HEALTH INNOVATIONS NOVALICHES HEALTH DISTRICT

REFERENCE PERSONS	Total No. of Times Mentioned	ACCEPTORS		REJECTORS	
		Number	Percent	Number	Percent
A	14	11	78.5	3	21.5
B	7	7	100	0	0
C	7	6	85	1	15
D	5	5	100	0	0
E	6	6	100	0	0
F	3	2	66	1	33
G	5	4	80	1	20
H	1	1	100	0	0
I	0	0	0	0	0
J	1	1	100	0	0

The above findings tend to show that acceptance and rejection of health innovations do not seem to be a function of age and of the number of pre-school and school children in the family. On the other hand, occupation and educational level, both of which may indicate the socio-economic level of the family; the size of the family; the number of married children in the family; the accessibility of the health facilities and membership in some referance groups seemed to be factors related to acceptance or rejection of health innovations. Whether religion is a factor needs to be pursued further.

Community Changes and Community Leaders Identified by the Random Population

In Chapter III and in the first part of this Chapter, the socio-economic, as well as the health changes in the district were described. In order to establish whether the people had factual knowledge of the health program instituted and whether they knew the agency concerned they were asked to identify changes that they had perceived and the people responsible for said changes.

The following table shows the community changes identified by the respondents:

TABLE XXVIII

TEN COMMUNITY CHANGES IN NOVALICHES HEALTH DISTRICT WITHIN THE LAST TEN YEARS (1950-1960) IDENTIFIED BY THE 225 RESPONDENTS AND THE NUMBER OF TIMES MENTIONED

Community Changes	No. of Times Mentioned
1. Increase in population	144
2. Putting up of industrial establishment	107
3. Installation of electricity	86
4. Higher cost of living	51
5. Construction of a theatre	25
6. Place more active and lively	24
7. Road construction	23
8. High assessed land value	20
9. Growth of subdivisions	19
10. More private drilled wells	17

It will be noted from the above that the respondents were able to identify most of the community changes although only the construction of more private drilled wells was the only one identified that was related to health. However, when they were directly asked to identify changes related to health, they named the following:

TABLE XXIX

TEN CHANGES RELATED TO HEALTH IN NOVALICHES HEALTH DISTRICT WITHIN THE LAST TEN YEARS (1950-1960) AS INDICATED BY THE 225 RESPONDENTS

Health Conditions	No. of Times Mentioned
1. Better health center services	70
2. Better utilization of health center services	66
3. Construction of modern health center	50
4. Improvement in the sanitary environment	37
5. Free milk and medicine supply	32
6. Better utilization of private medical practitioners	23
7. Presence of prenatal and post-natal services	19
8. Adequate delivery services	18
9. Increased home visitation by nurses	11
10. Presence of well-baby clinic	11

Again, it is gratifying to note that the respondents were aware of the improvements in health services and health conditions. It was again noted, however, that those who were able to identify both social and health changes in the community were mostly the "strong acceptors" - 83% of the "strong acceptors" against only 16% of the "strong rejectors". There was a positive correlation between community consciousness and acceptance of health innovations.

The researcher was also interested to find out who the respondents would identify as having been responsible for these changes. This would more or less indicate who the "gatekeepers" of social changes in the community were. Table XXX gives a profile of the kind of people to whom these changes were attributed.

TABLE XXX

ACTIVE LEADERS, BY RANK, AS INDICATED BY RESPONDENTS, BY AGE, SEX, EDUCATIONAL ATTAINMENT, RELIGION, POLITICAL AFFILIATION, MEMBERSHIP TO ORGANIZATIONS, AND CONTRIBUTIONS NOVALICHES DISTRICT, 1950-1960

Leader	Age	Sex	Educational Attainment, Occupation	Religion	Political Affiliation	Membership in Organizations	Contributions
A	52	M	Private Physician Businessman Proprietor	Catholic	Nacionalista	Q.C. Medical Society Capitol Site Club Catholic League Society Red Cross Chapter	a) For donations b) Church construction c) Helps find employment for jobless.
B (Widow) (Daughter of a Leader)	58	F	ETC graduate Former teacher Now pensioner & real estate dealer Mother of an M.D.	Catholic	Nacionalista	Novaliches Women's Association Catholic League Association Red Cross Chapter	a) Helped in the construction of the health center b) Political leader c) Employment for the jobless
C	63	M	ETC graduate Former teacher & councilor Landowner	Catholic	Liberal	PTA Capitol Site Club Catholic League	a) Donations b) Political leader c) Construction of roads d) Employment
D (Widow)	54	F	ETC graduate Teacher Proprietress & Businesswoman Widow of one of outstanding citizens	Catholic	Neutral	PTA Women's Association Red Cross Chapter Catholic League	a) Construction of a church b) Adviser of Youth Club c) President of church organization d) Community improvements

TABLE XXX
(CONTINUED)

Leader	Age	Sex	Educational Attainment, Occupation	Religion	Political Affiliation	Membership in Organizations	Contributions
E	72	M	PMA graduate Retired general of the Philippine Army Real Estate owner & broker	Catholic	Nacionalista	PTA	a) Health center construction b) Employment c) Housing the high school
F	68	M	Finished Grade II Former Quezon City Councilor Real Estate Owner	Catholic	Nacionalista	PTA	a) Employment b) Artesian well construction c) Other community improvements d) Help the sick & needy
G	71	M	Finished 2nd Year High School Landlord Former Councilor Belongs to one of the oldest family	Catholic	Nacionalista	PTA	a) General community improvement b) Donations c) Political influence enables him to help people in a number of ways
H	41	M	PMA graduate Major, Philippine Army	Catholic	Nacionalista	PTA	a) Employment b) General community improvement c) Helping the needy
I	36	M	Certified Public Accountant Bureau of Internal Revenue Agent	Catholic	Nacionalista	Capitol Site Club PTA	a) Helped in increasing the responsibilities of the barrio lieutenants

TABLE XXX
(CONTINUED)

Leader	Age	Sex	Educational Attainment, Occupation	Religion	Political Affiliation	Membership in Organizations	Contributions
J	64	M	Survey & Drafting graduate Survey and Drafting Supervisor	Catholic	Nacionalista	Veterans Association PTA	a) Political influences had enabled him to help a number of people in different ways b) General community improvement c) Construction of the school

It may be of interest to note from Table XXX that most of the identified leaders belonged to the "old guards" of the district - the old families who had been influential, politically or otherwise. Leadership seemed to be a monopoly of the older age group. Eight of the ten mentioned were 52 to 72 years of age. The ranking leader was a practicing physician who had become a business success within the decade. Strangely enough, health changes were not attributed to him. One interesting observation was that eight of the ten leaders mentioned belonged to the political party in power. Perhaps it was their political party affiliation that had enabled them to help in the improvement of the community. All the ten leaders mentioned were Catholics and it would seem that church activities had been one avenue for social contact and interaction. The Parent-Teachers Association also seemed to be one important channel of communication.

Educational qualification appeared to be an important consideration for leadership. It would seem that finishing a degree ranked high in the value system of the people in this community. Eight of the ten selected leaders had completed some kind of degree. Only two did not have any degree with one having finished only Grade II. Both had been so naturally endowed with the gift for leadership that after serving as barrio lieutenant for several years, both rose to the rank of councilors and have been referred to as the "old guards" of their respective areas.

Another interesting observation was that there seemed to be a different set of people who were identified with improvements in health

conditions (see Table XXXI). This points to the fact that there seemed to be different leaders for different situations. It is also noteworthy that the health changes were associated only with the local health personnel, both public and private. No mention was made of the personnel of the Rural Health Demonstration and Training Center who served as the stimulators or the vehicles of the health innovations. Neither did the people recall the foreign consultants who served the areas for two years, although they were well patronized while they were there. However, the public health nurse who ranked third did not actually come from the place but has worked in the health center long before the inception of the Rural Health Demonstration and Training Center program. On the other hand, one public health nurse from the RHD&TC had worked along with the Quezon City Health Department nurse as nurse-instructor during the decade but she was not mentioned by the respondents, although the nurse trainees were. The health center midwife who ranked sixth, is a new graduate and has worked in the center only recently but is a native of the district. All these seemed to conform with Sower's statement that the group which becomes the initial sponsor of a group action must be local residents[7] for, as has been shown, the people evidently could not identify themselves with the outside group; they did not share their norms nor did they share their objectives.

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[7]Christopher Sower, et al, Community Involvement (Glencoe, Illinois: The Free Press, 1957), p. 67.

TABLE XXXI

TEN PERSONS IN NOVALICHES HEALTH DISTRICT RESPONSIBLE FOR CHANGES IN THE HEALTH PRACTICES OF THE PEOPLE AS IDENTIFIED BY 225 RESPONDENTS

Names	No. of Times Mentioned
1. Dr. Austria (health center physician)	81
2. Dr. Pascual (young medical practitioner who owns a private clinic)	47
3. Mrs. Yanes (health center nurse)	42
4. Dr. Francisco (young medical practitioner)	30
5. Dra. de Jesus (health center dentist)	23
6. Miss Martin (health center midwife)	22
7. Dr. Sulit (old medical practitioner)	18
8. Dra. Leal (young medical practitioner)	8
9. Trainees (nurse)	8
10. Dr. Salazar (young medical practitioner)	6

When the 10 selected community leaders were interviewed to identify the community changes they practically mentioned what the people of the district identified, the difference being in the way they had been ranked and the fact that the leaders gave importance to the establishment of public high schools and increased school enrolment and to the construction of a modern health center. The existence of a theatre, on the other hand was not mentioned by the leaders.

With respect to changes in the health picture, the leaders gave more significance to the increased number and utilization of the

private medical services; to improve medical care, in general, mostly attributed to the health center; to the growing health consciousness of the people; and the decreased patronage of indigenous health workers. The community people emphasized more the benefits that they get from the health center, both materially and in terms of services.

When asked to identify the people responsible for general community improvements, it was worthy to note that the choices were focused on only 6 of the 10 community leaders identified by the people. (See Fig. 3.) The choices were almost equally distributed among 5 of the 10, with C toping the list instead of A. (Refer to Table XXX.) C, it will be remembered, was the only one who did not belong to the political party in power. It would therefore appear that when the leaders themselves were interviewed, the community welfare was uppermost in their consideration rather than political party affiliation.

Four people, G, H, I, J, (refer to Table XXX) were not mentioned and these were also the last four in the list identified by the 225 respondents. Two of these, G and J, were relatively older men. G had practically relinquished his leadership responsibilities to his daughter, B. J, on the other hand, while considered the "grand old man" of his area lived several kilometers away from the town proper. H and I were the youngest in the group. It may be inferred that because of age and distance these four did not interact with the other six leaders. While they were all PTA members, the PTA to which they belonged were attached to different schools. As J. L. Moreno had stated in his Spatial-proximity hypothesis: "The nearer two individuals are

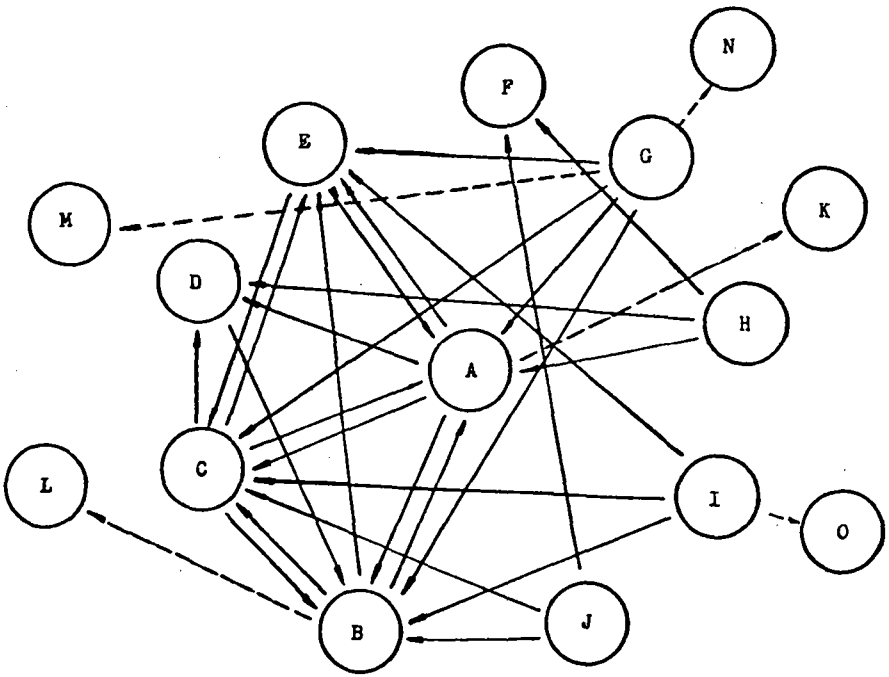

Fig. 3. Chart showing the choices of the 10 most chosen leaders of the Community (A to J) when asked to name who they considered as community leaders. G, H, I and J were not chosen while others were named outside of the ten.

to each other in space, the more they owe to each other their immediate attention and acceptance, their first love."[8]

The same people were identified as having contributed to the improvements in health practices, again with the local health staff ranking highest in the list. No mention whatsoever, was made of outside agencies or health workers.

Results of the Depth Interview

In order to probe deeper into some of the other factors related to the dynamics of the changes in health practices that were observed, the depth interview was used on the 18 "strong acceptors" and 18 "strong rejectors" of health innovations. Case histories were then written out for each. (See Appendix "L").

To start with, as has been previously described, the "strong acceptors" were all literates; were all earners and had increased income (except for one) during the decade; were conscious of community problems; had reference persons and lived close to the health center.

The depth interview revealed that changes in health practices seemed to be a function of a number of factors. The inception of an intensive public health program alone cannot lay claim on such changes. As had been pointed out, increased income, economic stability, and educational level all contributed to acceptance of health innovations. However, economic sufficiency alone is no sure guarantee. Cases 3, 5, 7, 8, and 17, for example, were well-to-do families at the start and

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[8] J. L. Moreno, Who Shall Survive?, (New York: Becon House, Inc., 1953), p. XX.

could have well afforded to subscribe to modern health practices in 1950, but they did not. It was only after their children had attained a higher educational level (especially those who graduated from college); or had gotten married with city folks whose standards were different from theirs; or had started working in offices outside of the area that they finally subscribed to modern scientific health practices. In other words, social mobility had created new reference groups for these people resulting in changed social norms and values. It seemed that the potency of the new membership group was higher than the old one, hence the attitudes, norms and values prescribed by this particular group were adopted.[9] Consequently, the children had demanded better homes with better health facilities and had utilized the services of professionally trained health workers in order to conform with the norms of the new reference group.

One contributory factor that had enabled the parents to give in to the demands of the children had been the rise in the commercial value of the lots. While all along the parents had been big landholders they had mainly depended on their yields. Now, with the increased value of lots, by selling a small portion of their lands, they were able to have enough cash to finance the construction of a modern house. This triggered off a number of changes that cast their reflection on health

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[9] W. W. Charters, T. M. Newcomb, "Some Attitudinal Effects of Experimentally Increased Salience of a Membership Group", Readings in Social Psychology. (Macoby et al, eds.) (New York: Henry Holt and Co., 1956) p. 276.

practices - the installation of a water pump, a septic tank and a flush toilet, improved drainage, refrigerators, ovens, etc. It appeared, therefore, that changes in health practices may be a part of series of other changes. The linkage factors, a hypothesis which states that innovations belonging to a series whose members are linked together by common element will facilitate or accelerate the acceptance, appeared to hold true.

In other instances, other factors had been at work. That a definite need for or a definite advantage accruing from adopting a scientific health practice brought about changes was substantiated by Cases Numbers 1, 2, 3, 8, 9, 10, and 15. To these families the acceptance of modern health practices was precipitated by some pressing conditions which forced them to submit to hospitalization and/or the professional services of a physician and other health workers with very satisfying experiences and decided advantages accruing therefrom. At other times, social acceptance of the health worker resulted in the acceptance of health practices. This usually occurred when the health worker had succeeded in reducing social distance between him and the clientelle as in Cases Numbers 1, 2, 6, 9, and 11. In other instances, as in Cases Numbers 9, 12, 13, and 14 modern health practices had become a part of the family's norm of conduct because of authoritative acceptance. The influence of the parents or relatives, or some person of status; or the desire to please the health center personnel; or constant exposure to the health center services; or compliance with army regulations had led the family to accept the practices.

One observation was made, however. Even among the "strong acceptors", not all were total acceptors of health innovations. Some, for example, inspite of regular attendance at pre-natal clinics still called the unlicensed midwife during the period of delivery. The reasons given were: the distance of the Domicilliary Obstetrical Services; the absence of the professionally trained health worker; absence of abnormalities, and the like. Fanny del Rosario[10] found that the people called the professional health worker as a last resort. This may be so, but the important observation in this study is that when this happens this is a most crucial point in that it will decide whether the people would or would not become acceptors of scientific health practices in the future. If this initial acceptance were not reenforced by satisfying experiences it would likely not become a continued acceptance. The positive outcome of such an event were well exemplified in cases numbers 2, 3, 8, 9, where the client had very satisfying experiences with this first contact; the negative outcome, by cases numbers 2B, 9B, 11B and 14B where the experiences proved traumatic.

Analysis of the results of the depth interview of the 18 "strong rejectors" revealed the following reasons for not utilizing the health-center services or private medical practitioners:

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[10] Fanny C. del Rosario, "Utilization of a Rural Health Center and Implications of Social Case Work." (Unpublished Master's Thesis, Graduate School, University of the Philippines, 1954).

TABLE XXXII

REASONS FOR REJECTING THE SERVICES OF PROFESSIONAL TRAINED HEALTH WORKERS

Reasons	No. of Times Mentioned
1. Quacks have superior skill than the physicians. The latter cannot handle disease caused by evil spirits.	11
2. Cannot afford to buy medicine or pay the physician's fee	7
3. Magico-religious beliefs	4
4. The doctor is for the rich only; the quacks are for the poor like us	4
5. Had never been seriously ill	4
6. Had very bad experiences with the doctor	4
7. Never heard of the health center	3
8. Health center is too far	3
9. Is a quack doctor himself	2
10. Too busy with household chores	1

To start with, the "rejectors" of health innovations believed in the superior skills of the "quack" doctors over that of the physician. This was closely tied up with their magico-religious or supernatural belief in the causation and treatment of illness. Added to these was their feeling that the physicians did not care much about them; there is a wide social distance between the physician and their social class. With all these negative attitudes at the outstart, it is not surprising that even after a decade of intensive public health work, these people have remained inmured to public health and medical care programs.

Another observation was that the "strong rejectors" belonged to what Hyman and Sheatsley[11] have classed as the chronic "know-nothings". The rejectors were not aware of the changes that had taken place in their community; they did not know any community leaders; they had never heard of the health center services; they did not realize that the health center services were free, etc. Offhand, it may be inferred that the fault lies with the health personnel so that information about their services have not reached the people. But as Hyman and Sheatsley have found, there is always a portion of the population which shows a relative lack of knowledge of any event in the community which made these researchers conclude that "there is something about the uninformed which makes them harder to reach no matter what level or nature of the information."[12] This may account for the vicious cycle among these people - they have remained oblivious to what had been happening around them; they have never improved their socio-economic status; they have continued to live in filth and squalor, they have remained unhealthy.

It may be said, therefore, that changes in health attitudes and behavior of people take place very slowly and are governed by several forces. A single factor cannot lay claim for bringing about such changes, for the development of health attitudes and behavior are far

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[11] H. H. Hyman and P. B. Sheatsley, "Some Reasons Why Information Campaigns Fail", Readings in Social Psychology (Macoby, Newcomb and Hartley, eds.) (New York: Henry Holt and Co., 1958) p. 164.

[12] Loc. cit.

more complex than many will admit. Whatever action is taken regarding health and illness, the "compulsive force of man's culture - that sum total of ideas, ideals, attitudes and behavior patterns which are socially inherited - is present; in each, habit is a powerful arbiter; in each the limitations of environment exhibit themselves."[13]

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[13]Earl L. Koos, The Health of Regionville, (New York: Columbia University Press, 1954) p. 3.

CHAPTER VI

INTERPRETATIVE SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

Summary

The Philippines, in its struggle to become economically self-sufficient, is undergoing a number of social changes. Through the efforts of the community development programs, sponsored by both government and voluntary agencies, many improvements have been undertaken to uplift the standards of community living.

It is now fully recognized that rural health is an important activity to be undertaken hand in hand with any community development program, either in agriculture or in industry. In any economic development enterprise rural health will always serve as one of the keys to the transformation of rural areas and people.

The community described in the study is an example of a community which has undergone physical and social changes. Within the decade, roads have been improved and new ones constructed, electricity and telephone installed, land and housing developments have sprung up, industrial plants established, new school buildings erected, public and private high schools organized; private and public wells drilled, and a new health center, private clinics, a cinema house, a rural bank, a fire department, a public library, a post office, a police outpost now serve the area. What were once vast agricultural lands have been converted into industrial sites, school sites or land and housing developments. The number of professionals has increased, and people practice more autonomy with regards to local government.

Among the many innovations that have been introduced within the decade was an intensified public health program. On February, 1950, the Rural Health Demonstration and Training Center was organized in Quezon City as one of the Philippine WHO/UNICEF assisted programs to serve as a practical field training center for all categories of public health personnel and to demonstrate practical and efficient procedures for carrying out the functions of modern rural health services. While the emphasis of the program was on maternal and child health, it also developed and/or improved the other public health services, namely; environmental sanitation, vital statistics, communicable disease control, nursing services, laboratory services, and health education. The Rural Health Demonstration and Training Center focused its activities along three main lines: (1) community services, (2) training, and (3) special studies and research. The Center, jointly with the Quezon City Health Department, served as the vehicle for the introduction of many innovations not only in health practices of the people but also in the administration of public health services.

The first task that the Rural Health Demonstration and Training Center set to do was to conduct a house-to-house survey of the community in order to evaluate the health practices of the people at the start of the program. This served as the base-line data against which to measure future progress as well as the basis for planning the public health program that was introduced.

The objectives of this study were to:

1. Determine the changes in certain health practices of the

people after a 10 year period of intensive public health program.

2. Identify the factors related to the changes.

3. Study the dynamics of change.

The steps necessary for gathering data for this study were:

1. The establishment of certain health indices through which changes in health practices over the 10 year period were measured.

2. A resurvey of a random sample (18%) of the original population and repetition of a number of special studies.

3. Classification of the random population into acceptors and rejectors of health practices according to certain criteria established.

4. Depth study of the "strong acceptors" and "strong rejectors" of health change.

5. Interview of 10 most frequently chosen community leaders by the respondents in the study.

The following were the health indices established to measure changes in health practices over the ten year period with the corresponding findings:

Environmental Sanitation Practices

1. Percentage of families with adequate toilet facilities for 1950 and 1960.

1950	1960
7.9%	71.11%

2. Percentage of families with adequate refuse disposal for 1950 and 1960.

1950	1960
16.74%	70.22%

3. Percentage of families with adequate source of water supply for 1950 and 1960.

1950	1960
68.6%	93.34%

Maternal and Child Health Practices

1. Percentage of expectant mothers with prenatal supervision.

1950	1960
6.14%	76.92%

2. Percentage of deliveries in hospital and by professional health workers.

1950	1960
20.39%	69.69%

3. Nutritional status of mothers as indicated by

a) Average hemoglobin count/gm./100 cc among pre-natal cases.

1951-53	1960
8.98 gms.	10.32 gms.

b) Decrease in the percentage of mothers with adverse symptoms of pregnancy.

1951-53	1960
84.77	70.87

4. Percentage of infants with health supervision.

1950	1960
13%	65%

5. Percentage of infants with positive reaction to smallpox vaccine.

1950	1960
8%	29.3%

6. Percentage of the population immunized against:

Smallpox

1950	1960
74%	67.93%

Cholera-Typhoid-Dysentery

1950	1960
22%	26.22%

Diptheria-Pertussis-Typhoid

1950	1960
0%	23.07%

7. Percentage of parasitic infestation among school children.

1950	1960
73.45%	72.50%

8. Nutritional status of school children -

Percentage of school children with sufficient riboflavin intake according to the laboratory examination of their urine.

1954	1960
14.5%	61.33%

9. Dental health practices -

Percentage of children with decayed, missing and filled teeth.

1950	1960
81.67%	90.03%

The Utilization of Health Resources

1. Percentage of deaths with medical attendance.

1950	1960
39.74%	71.71%

2. Percentage of families utilizing different types of health facilities.

1950	1960
47.90%	92%

Completeness of Birth Registration

Percent of under-registered births.

1950	1960
40.5%	7%

While it will be noted that there was general improvement in the health practices of the people, it was shown that the incidence of intestinal parasitism hardly decreased in spite of the increase in toilets. This would seem to indicate that banking on increased toilet facilities alone for the prevention of intestinal parasitism would prove discouraging. The 100% construction and utilization of adequate toilet would seem necessary plus the practice of personal hygiene together with improvement in other aspects of environmental sanitation, such as food and market sanitation, proper handling and storage of food in the homes and in public eating places, and safe source of water supply. As a matter of fact, the availability of adequate water supply may be the key to the solution of the other environmental sanitation problems. Environmental sanitation programs should therefore strive to:

1. Provide adequate and accessible water supply.
2. Have 100% construction and utilization of adequate forms of toilets.
3. Encourage mothers to emphasize proper toilet habit and personal hygiene early in childhood instead of being over-permissive with regards to the practice of defecating anywhere and eating without properly washing their hands.

4. Influence the school authorities to emphasize the teaching of personal hygiene and proper use of toilets in schools and to make health instruction more functional and meaningful.

As one public school authority has stated, perhaps it would have been wiser and more practical to have emphasized proper hand washing before eating in school health instruction than to have taught the children to use spoons and forks all along. For, after all, a very small percentage of the people in the rural areas do use spoons and forks after many years of education along this line.

With regards to maternal and child care practices, it was shown that there was marked increase in the percentage of expectant mothers with pre-natal supervision, and who were delivered in hospitals and by professional health workers. However, there is still much to be desired. The study elicited that mothers availed themselves of the pre-natal, post-natal and child health services but called on the indigenous health worker during the time of delivery. The reason given was the inaccessibility or inavailability of the health center personnel or of the private medical practitioners which may be very valid reasons. In the area where there were a number of private medical and para-medical personnel practicing, it was found that the indigenous midwives were utilized less and less and were fading out of the picture. It would seem that if the services of professionally trained people were available at any time of the day and their services were within the capacities of people to pay, eventually indigenous health workers will slowly be weeded out. At least, as far as maternal and child care is concerned, one can not say that utilization of

professionally trained health personnel was the last recourse of the people. They availed themselves of the pre-natal services religiously but they found it more convenient to call on the indigenous midwives at the time of labor. How to bridge this gap in the maternal care services is the question. It is most likely that with the present shortage of health personnel in remote areas, this problem will persist. The practical solution seems to be to train the indigenous health worker in asepsis and to make them refer abnormal cases to hospitals or to physicians. The prenatal care program should be able to screen the abnormal cases, give them anticipatory guidance, and follow them up to make sure that they are delivered under competent care. Hopefully, with more public and private medical and para-medical personnel to serve the rural population and with better trained and zealous health workers together with an intensive health education program, the indigenous health workers will slowly vanish.

There is still very much to be desired regarding the nutritional status of mothers and children inspite of the improvements shown. The hemoglobin count among pre-natal mothers and manifestations of malnutrition among school children were still below par. Nutrition education alone will not solve the problem as nutrition is closely linked with socio-economic status of the people and with many psycho-cultural factors. This would mean that nutrition education should go hand in hand with community development programs particularly food production, distribution and preservation, and with the whole program of livelihood. Furthermore, nutrition education should be practical, functional

and more realistic and should not, as much as possible, veer away from existing dietary patterns and practices.

The findings of this study pointed that the immunization program was not as rigid as it should have been. Such a relaxation would seem to be rather dangerous, as had been demonstrated, in such sporadic outbreaks of cholera, and smallpox epidemics as have occurred in the recent past. Greater vigilance should be exercised.

The percentage of decayed, missing and filled teeth has increased inspite of the intensive dental health education program. This may have been due to the introduction of more sophisticated foods in the area such as soft drinks, candies and pastries. This is typical of what is happening in other areas. The introduction of water fluoridation may be the answer to this problem.

Registration of birth and death proved to be much improved during the decade. It was noted, however, that majority of under registered infants were those who died soon after birth - less than one week usually. These had death certificates but no birth certificates. Others usually lived in the remoter area and were usually delivered by indigenous midwives. In an earlier study it was found that there were many who had baptismal certificates without any birth certificates. For years, the baptismal certificates had been honored in schools and in other places as a substitute for the birth certificate. For more complete birth registration, decided benefits for having birth certificates must serve as the motivating force for parents instead of the penalties imposed. Decidedly, the cooperation and support of other

agencies are needed. For example, those in charge of registering infant deaths should check whether birth certificates had been previously issued. Parish priests should be encouraged to request birth certificates prior to issuing baptismal certificates. Schools should honor only birth certificates for entrance to school; so with other agencies. The cooperation of indigenous midwives and barrio lieutenants should also be sought.

It was also found that 61.3% of the random sample were "users" of the health center services with 38.7% being "non-users". However, even among those who did not use the health centers, 79.3% manifested changes in health practices according to the indices established with only 20.6% showing no change at all. Therefore, only 8% of the total random population did not adopt modern health practices and were therefore "strong rejectors" of health change. A study of the characteristics of the "acceptors" and "rejectors" of health change showed that the "acceptors":

1. Belonged to the higher socio-economic level - they belonged to the higher occupational and educational levels, had children in schools and had increased income during the decade.
2. The "acceptors" had more married children and came from larger-sized families.
3. The "acceptors" lived near the health centers.
4. The "acceptors" were conscious of their community problems and progress, could identify community leaders, and belonged to a reference group.

The depth study on the factors related to acceptance of modern health practices and the dynamics of change showed that the changes in health practices noted could not be attributed solely to the intensive public health program. What degree of change was due to the public health program could not be determined inasmuch as it was never the intention of this study to isolate the effects of the public health program alone. If it were so planned, a control community should have been part of the design of the study. This was not possible, however, as such a control community was never thought of at the start of the Rural Health Demonstration and Training Center program and therefore no base-line data similar to the one established in the Novaliches Health District were gathered. (This factor may be taken care of in future research.) Furthermore, it had always been the philosophy of the planners and implementers of the program that public health is only part of the greater scheme of total community living and it must help bolster other programs in the same way that other programs should support it. It was because of this belief that the public health program was coordinated with such other programs as those of the Bureau of Agricultural Extension, the Bureau of Commerce, the Bureau of Public Schools, the Rural Reconstruction Movement, the Bureau of Public Highways, and the Bureau of Labor.

Improvement in the socio-economic status of the family - a college education for their children, inter-marriage of children with people of wealth and of higher social status, a job in the city, a change in reference groups, sale of real-estate under the present

increase in the commercial value of lands, a better job - seemed to be an important factor in the acceptance of modern health practices. Improved socio-economic status usually resulted in the construction of a better house and with a better house followed improvements in environmental sanitation - a drilled well, a septic tank with a flush toilet, better drainage, safe food storage through refrigeration, better cooking facilities, and the like. Because of the influence of the educated children or of the new reference groups due to marriage, or a new job or new immigrants, the families developed a new set of values, discarded its old health practices and accepted modern ones.

Similarly, improvement in socio-economic status of families may have been the consequence of a number of community improvements such as more schools in the area and the opening up of public and private high schools and colleges; electrification; improvement in transportation and communication; industrialization, with resulting urbanization, giving rise to higher land values; interaction with other population groups; more job possibilities; more government services offered including health; increased number of professionals, more intelligent electorate and more competencies in self-government.

It was also found that civic-consciousness was a factor in the dynamics of change. Those who were "strong acceptors" were aware of the community problems and knew the people who were more or less responsible for community improvements. The "rejectors" on the other hand were "chronic know-nothings". It is generally accepted that change starts with an awareness of the problem and the desire to do

something about the problem. Of course, the public health program helped to increase awareness of health problems but it was still that portion of the population whose attitudes were congenial to the change who did change while those with negative attitudes remained to be "rejectors". How to reach or influence these indifferent segment of the population needs to be scientifically studied.

The change relationship between the agents of change and the people of the community proved to be significant. The "strong acceptors" of health change proved to have some pleasant experiences with the health worker which made them initially accept the practice. Such "initial acceptance" became one of "continued acceptance" when these relationships proved satisfying and when the health practices were realistic and of decided advantage over the old health practices. Reducing the social distance between the health worker and the people was essential in maintaining the change relationship. Involving the local leaders in bringing about change also proved useful as it was shown that the people identified themselves more with the local leaders than with the change-agents who were considered "outsiders".

Kurt Lewin in his pioneering analysis of the process of change suggested three phases; (1) unfreezing the present level, (2) moving to the new level and (3) freezing on the new level. The above-mentioned phase - the awareness of a need for change and the establishment of change relationship - may be considered the "unfreezing" phase.[1]

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[1] Kurt Lewin, "Group Decision and Social Change", Readings in Social Psychology, (Macoby, Newcomb and Hartley). (New York: Henry Holt and Company, 1958), pp. 210-211.

Moving or working toward change is the more difficult aspect which consists of: (1) clarifying the problem to the people, (2) deciding on a plan of action to solve the problem, and (3) transforming these plans into actual change efforts. These processes were taken cared of by involving the community leaders and the people in the discussion of and in finding solution to their health problems through the Citizens' Health and Welfare Councils, workshops, study groups, community assemblies, PTA meetings, and the like. That whatever decisions reached were transformed into actions were attested to by the changes that had taken place, as had previously been discussed.

The "gatekeepers" who influenced the people's acceptance of health innovations were those who have had prestige and status in the community. They belonged to the old families and had at one time or another been barrio lieutenants, teachers, councilors, or army officers. Moreover, they belonged to the older age group (except for two); they have attained a high level of education, were mostly degree holders, and were relatively financially well off. To the most frequently chosen were attributed the contribution of funds and donations for community improvements such as the construction of health centers and private clinics, high schools, the church, drilled wells and job placements for the jobless. It was interesting to note that a different group of people were named as having been responsible for health changes in the community when the specific question was asked. The most frequently mentioned was the health center physician, while a private medical practitioner was credited for general changes in the community.

This means that individuals who emerge as leaders in one situation may or may not emerge as leaders in another situation. Leadership appears to reside in the contribution which the individual is capable of giving in a specific setting.

It was also shown that the chosen leaders had a high degree of interaction and belonged to the same community organization; to the same political party, were either related or friends and, except for the four isolates, they chose one another when asked to identify who they considered as community leaders. It may be assumed that perhaps a decision, once reached by one, is easily accepted by his associates; that they had the same norms and values, and that they shared the same channels of communication. They, in turn, influenced the behavior of other people in the community, be it health or otherwise. Whatever is accepted by them tended to be accepted by the rest of the community especially those who considered them as reference persons or who belonged with them in the same "reference groups". Any community program therefore, or any innovation that needs to be introduced in a community, while it may be initiated by an outside agency, should involve these "gatekeepers" in "initiating" and "legitimizing" the program if it wants the program to be executed. As was shown in this study, changes in health practices that were identified by the people were never attributed to the Rural Health Demonstration and Training Center personnel but to local residents. The program will have an easier sailing if sponsored and approved by the "gatekeepers".

Conclusions

From the foregoing findings it can be concluded that, after ten years of intensive public health work, there were definite changes towards more desirable health practices among the people in the given area of study. Of the population under study only 8% did not adopt modern health practices; the rest, 92%, manifested changes in health practices, either to a large or to a small degree. The factors which seemed to influence acceptance of health innovations were: (1) educational attainment, (2) occupational level, (3) number of school children in the family, (4) number of married children in the family, (5) size of the family, (6) proximity to the health center, (7) civic consciousness, and (8) membership in some reference groups. Age and the number of pre-school children did not seem to be important factors. No conclusive statements can be made about religion as a factor.

While 92% of the population studied were "acceptors" of modern health practices, not all were "total" acceptors. The adoption of modern health practices did not seem to replace indigenous health practices entirely; rather it supplemented them.

A study of the dynamics or the process of change seemed to point to the following:

1. Improvement in socio-economic status may trigger off a chain of other changes. It was shown that acquiring an education may result in increased income, better housing, a change of values and greater receptivity to scientific health practices. It was obvious that the rise in the commercial value of the

land and the better job opportunities arising from industrialization facilitated the acceptance of modern health practices. There seems to be a direct relationship between buying power and the adoption and use of up-to-date ways of life.

2. The opening of new and improved channels of communication which allows for greater interaction among communities promotes exchange of ideas, funnels more scientific information and helps in the formation of group culture or group norms. These, in turn, influence the people's reception of health innovations and their acility to make intelligent decisions.
3. Membership in a new and potent reference group which is receptive to or is an "accepter" of modern health practices creates new norms and values which eventually influence health attitudes and practices. In this study, such new reference groups came about through:
    a) Studying in colleges and universities located in the Metropolis.
    b) Out-group marriages especially with those coming from a higher social class.
    c) Job opportunities in the cities or in the communities.
    d) Migration of people from cities and other places who established their residence in the area.
    e) The establishment of industrial firms which brings in an influx of workers, industrial managers and health personnel from outside the community, with their corresponding

health and social welfare facilities and services.

f) Joining the army or the navy which provides health benefits not only for the enlisted men but for their families as well.

g) The recruitment of government employees - teachers, health workers, agricultural extension workers, welfare officers, district treasurer and the like - *from* other places to work in the area.

4. *The methods of approach used by the public health workers* themselves prove important in the acceptance or rejection of whatever innovations are introduced. This study shows that:

a) An understanding and acceptance of the people and their health practices by the health worker begets acceptance of the health worker by the people. Acceptance of the health worker facilitates acceptance of the health practices and proper health behavior.

b) Minimizing the social distance between the health worker and the people enables people to identify themselves with health workers and makes them more receptive to change. People oftentimes reject health innovations because they feel they are "different" from the health workers and therefore should not behave as they do.

c) Planning and working out public health programs with and through the local health staff and the accepted community leaders and "gatekeepers" ensure better success for

the program. People identify themselves with local leaders. Authoritative acceptance of health practices from people held in high esteem may lead to continued acceptance.

d) Continuity, availability and adequacy of health services and facilities help make the people derive greater satisfaction from utilizing modern health services. For those who are initially accepting modern health practices, satisfaction will grow from such continuity and adequacy of service and will motivate them to continue the new practice. Besides, it has been shown that continuous exposure to health services and facilities greatly influence acceptance and utilization of these services and facilities.

e) The public health program must be planned not as an air-tight compartment but as a part of a total community program. A multi-disciplinary approach is essential and other community projects must be brought to bear on the public health program and vice-versa.

Recommendations

Inasmuch as this study pointed out that changes in health practices is due to a constellation of factors, it is suggested that planners and implementers of public health and other programs should take a broad or total view - should see health as a whole; should consider the needs of the total man as well as the needs of the total

community. A public health program to be systematic, substantial, continuing and reflective cannot be planned as a separate entity; it must be interrelated and must collaborate with other community programs. This means that the public health workers need to be sensitive to the biological, physical and social milieu in which the program operates; must make a careful "community diagnosis" before instituting any kind of "treatment" (program) but without ever losing sight of the fact that the focal point is the people and that the human factor is always an important consideration.

If such a view were accepted, it points to the need for training public health workers and other community workers with this type of orientation - the total view - so that they may in turn see more clearly how the public health program and how the public health worker fit into the broad spectrum.

It is also suggested that public health and other community workers give more emphasis to the ecological approach. The study showed that improvements in certain health practices do not seem possible unless something is done with the environment - physical as well as social. For example, intestinal parasitism, malnutrition and DMF rates did not seem to respond too well to partial and palliative measures such as deworming, administration of vitamin pills or sodium flouride application. Their solution entails more than just diagnosis, treatment and care. The indication is that something must be done to control the environment such as flouridation of the water supply to promote dental health; flood control, irrigation, soil conservation,

improved agricultural techniques, food storage and processing, food marketing and distribution and better earning capacity to improve malnutrition; total environmental sanitation - prevention of soil pollution, presence of adequate water supply and toilet facilities to control intestinal parasitism.

Then, take the case of the hard core of 8% "rejectors". They have lived either in remote or isolated places, or have felt far removed from community activities and/or have felt so rejected and deprived materially and emotionally that they have had no incentive to live better lives. Perhaps, if their physical environment and social milieu were changed they may change their values and goals in life, have their morale boosted and eventually become "acceptors". While it was not within the scope of this study to find ways and means of reaching out to this people, certain assumptions may be made. It is therefore recommended that further studies be pursued along this line to investigate some of the effective methods of helping these people "raise themselves by their bootstraps". It may be worthwhile for public health workers to remember, however, that there exists in every community a core of people who are hard to reach and change so that some efforts may be directed towards helping them and so that the worker may not feel discouraged when he comes across such segment of the population. The health worker also, is part of the social environment and, as it has been pointed out, his understanding, acceptance and inter-personal relationship with these people go a long way towards changing the people's perceptions about themselves and their problems.

More and more, it is being realized that the primary prevention of public health problems lies in changing and controlling certain aspects of the environment. As the environment is improved, people change. The change within the people in turn stimulates further modifications in the environment and so the cycle continues. It is the responsibility of public health workers and other community workers to take some leadership in stimulating such desired changes by serving as "agents" of change.

APPENDIX "A"

TABLE XXXIII

POPULATION BY AGE GROUPS AND SEX COMPOSITION
NOVALICHESS HEALTH DISTRICT
1950-1960

AGE-GROUP	TOTAL		MALE		FEMALE	
	1950	1960	1950	1960	1950	1960
0 - 1	301	59	156	32	145	27
1 - 4	1,117	150	589	74	528	76
5 - 9	1,041	226	531	88	510	138
10 - 14	1,111	232	576	131	535	101
15 - 19	1,007	178	487	93	520	85
20 - 24	722	142	351	80	371	62
25 - 29	591	100	275	47	316	53
30 - 34	478	87	229	36	249	51
35 - 39	501	54	225	28	276	26
40 - 44	362	65	181	29	181	36
45 - 49	236	85	128	36	108	49
50 - 54	201	47	111	22	90	25
55 - 59	122	37	65	19	57	18
60 - 64	125	32	71	22	54	10
65 - 69	72	19	26	10	46	9
70 - 74	73	20	41	10	32	10
75 - 79	44	10	34	3	10	7
80 - 84	49	5	25	4	24	1
85 - 89	7	5	2	1	5	4
90 - 94	13	2	4	2	9	0
95 - 99	3	0	1	0	2	0
100 - 104	3	0	2	0	1	0
105 - Up	4	1	1	1	3	0
TOTAL	8,183	1,556	4,111	768	4,072	788

Average Number per Household, 1950 = 5.3

Average Number per Household, 1960 = 6.9

SOURCE: 1950 - RHD&TC Progress Report, September 1 - December 31, 1950.

1960 - Random Sample.

TABLE XXXIV

POPULATION BY SEX AND BY BARRIO
NOVALICHES HEALTH DISTRICT
1950-1960

	POPULATION		M A L E		F E M A L E	
	1950	1960	1950	1960	1950	1960
1. Aguardiente	52	0	26	0	26	0
2. Baesa	1,470	230	738	108	732	122
3. Bagbag	663	151	327	85	336	66
4. Balon-Bato	1,251	138	636	63	615	75
5. Binuksok	231	54	120	28	111	26
6. Cabuyao	58	4	23	1	35	3
7. Capre	65	20	33	9	32	11
8. Damong Maliit	115	20	64	8	51	12
9. Gulod	305	61	165	33	140	28
10. Ilang-Ilang	62	7	29	5	33	2
11. Kaibiga	87	17	43	12	44	5
12. La Mesa Dam	60	7	32	2	28	5
13. Novitiate Compound	24	0	13	0	11	0
14. Pasacola	83	8	42	5	41	3
15. Pasong Putik	133	22	59	11	74	11
16. Poblacion	1,371	362	683	170	691	192
17. San Agustin	246	39	117	20	129	19
18. San Bartolome	630	125	304	63	326	62
19. Sangandaan	515	105	267	56	248	49
20. Santa Cruz	59	11	30	5	29	6
21. Talipapa	497	121	250	55	247	66
22. Uyo	203	54	110	29	93	25
T O T A L	8,183	1,556	4,111	768	4,072	788

SOURCE: 1950 - Appendix, RHD&TC Progress Report, September 1 - December 31, 1950.

1960 - Random Sample.

TABLE XXXV-A

NUMBER OF SCHOOLS (PUBLIC AND PRIVATE)
IN NOVALICHES DISTRICT, QUEZON CITY
1950 & 1960

SCHOOLS	1950	1960
1. Public	2	11
A. Elementary (Main Bldgs.)	2	2
1. Annex School Buildings (Primary only) 6 (Primary & Intermediate) 2	0	8
B. High School	0	1
2. Private	3	4
TOTAL	5	15

TABLE XXXV-B

NUMBER OF SCHOOL ENROLLMENT (PUBLIC AND PRIVATE) IN
NOVALICHES DISTRICT, QUEZON CITY
1950 & 1960

SCHOOL	1950	1960
1. Public	1,898	3,332
a. Primary	1,173	2,305
b. Intermediate	725	916
c. High School	0	111
2. Private	768	1,997
a. Elementary	116	254
b. High School	323	890
c. College	329	853
TOTAL	2,666	5,329

SOURCE: Tables II (A & B) - Statistical Records of the Bureau of Public and Private Schools, (1950 and 1960).

APPENDIX "B"

LIST OF SUBDIVISIONS IN NOVALICHES HEALTH DISTRICT AS OF 1960

L A R G E	S M A L L	
1. Maligaya	1. Maximo, Arsenia	25. Cuadra, Susana
2. Ligaya	2. Gonzales, Joaquin	26. Urbana de Jesus
3. Rosario	3. Pangilinan, B.	27. Perfecta Tabora
4. Manotok	4. Jose Dayco	28. Atanacio Samonte
5. Clemente	5. Emiliano Lopez et al.	29. F. C. Roque
6. Carmel Corporation	6. Juan Valledo et al.	30. Federico Ramirez
7. Delfin	7. Quedding, Luis	31. Magno Pacheco and Lucia Santiago
8. Pascual	8. Fernando, Pedro	
9. St. Mark or Chudian	9. Balting, Vicente	32. Maria Cruz Vda. de Francisco
10. Villa Teresita Subd.	10. Carreon	33. Benjamin del Mundo
11. Villa Sabina (Pleasant Ville)	11. Lozada, Epifacio	34. Marcial Umali and Anatalia Guran
12. Mutual Realty Corp.	12. Ligaya, Cleofas	35. Juana Concepcion
13. San Carlos Village	13. Julian de la Cruz	36. Benito Ramos
14. Big Farm	14. Suarez, Emilio	37. Pedro Dayego
15. Buena Mar	15. Quiason, Juanito	38. Pedro de la Cruz and Carlos Duyag
16. Rock Ville	16. Pedro Mojica	39. Basilia Ramos
17. Plata	17. Rosa Susano	40. Maria Briones
18. Miramonte	18. Simplicia Rivera	41. Manuel Pilares
	19. Santiago, Magdalena	42. Pablo Francisco
	20. Bonifacio Ramirez	43. Damian Magsalin
	21. Aurelia Masaganda	44. North Zambales Lumber Co.
	22. Gregorio del Mundo	45. Irene, Emilia, Lenan
	23. Juan Valledo	
	24. Romantico de la Cruz	

APPENDIX "C"

LIST OF INDUSTRIAL ESTABLISHMENTS
NOVALICHES HEALTH DISTRICT
1960

1. Delgado Brothers, Inc. (Transit Warehouse)
2. Philippine Flu-Curing & Redrying Co. (Warehouse)
3. Central Steel Manufacturing, Inc.
4. Jacinto Steel, Inc.
5. Pacific Knitting Mill
6. Stonehill Steel & Co.
7. Manila Paper Mills
8. Eastern Paper Mills
9. Times Paint Factory
10. Three Point Paint Factory
11. C. C. Unson & Co., Inc.
12. Atlas Textile & Co.
13. Pacific Metal & Co.
14. Mi-Luz Venetian Blind Manufacturing Co.
15. Alfred & Co., Inc. (Toothpick maker)
16. Ever's Pearl & Button Factory
17. Walter & Co.
18. Insular Ceramics, Inc.
19. Mabuhay Feeds, Inc.
20. Periña Feed Mills
21. Philippine United Metal & Co.
22. Acme Knitting Factory
23. Dimson Concrete Products
24. Hollow Blocks Manufacturing Co.
25. Novaliches Lumber and Hardware
26. Novaliches Bakery
27. Pascual Lumber and Hardware

SOURCE: License and Permit Section, Quezon City Hall.

APPENDIX "D"

TYPES OF INDUSTRIAL ESTABLISHMENTS, BY TOTAL NUMBER OF EMPLOYEES AND NUMBER OF EMPLOYEES FROM NOVALICHES DISTRICT

N A M E S	Total No. of Employees	No. of Employees from Novaliches District
1. Delgado Brothers, Inc.	87	1
2. Philippine Flu-Curing & Redrying Co. (Warehouse)	32	7
3. Central Steel Manufacturing, Inc.	250	21
4. Jacinto Steel, Inc.	350	23
5. Pacific Knitting Mill	400	36
6. Stonehill Steel & Co.	49	0
7. Manila Paper Mills	250	58
8. Eastern Paper Mills	218	26
9. Times Paint Factory	34	1
10. Three Point Paint Factory	6	0
11. C. C. Unson & Co., Inc.	60	3
12. Atlas Textile Manufacturing Co.	170	26
13. Pacific Metal & Co.	Not Yet in Operation	
14. Mi-Luz Venetian Blind Manufacturing Co.	10	2
15. Alfred & Co. (Toothpick maker)	15	2
16. Ever's Pearl & Button Factory	10	0
17. Acme Knitting Factory	30	8
18. Insular Ceramics, Inc.	20	4
19. Mabuhay Feed Mills, Inc.	18	0
20. Periña Feed Mills	11	0
21. Philippine United Metal & Co.	20	2
22. Walter & Co.	8	2
23. Dimson Concrete Products	8	0
24. Hollow Blocks Manufacturing Co.	5	0
25. Novaliches Lumber and Hardware	6	0
26. Novaliches Bakery	10	2
27. Pascual Lumber and Hardware	3	1
T O T A L	2,080	225

APPENDIX "E"

TABLE XXXVI

QUANTITY AND QUALITY OF FERTILIZERS DISTRIBUTED BY YEARS IN NOVALICHES DISTRICT, QUEZON CITY

Year	Quantity	Quality
1955	150 bags	Ammonium Phosphate
1956	270 bags	Ammonium Phosphate
1957	500 bags	Complete Fertilizer
1958	700 bags	Ammonium Phosphate
1959	500 bags	Ammonium Phosphate

Source: Statistical Records, Quezon City FACOMA Incorporated.

TABLE XXXVII

CROP PRODUCTION, BY AREA PLANTED AND YIELD PER HECTARE NOVALICHES DISTRICT, QUEZON CITY 1960

Kinds of Crop	Area Planted (Hectare)		Yield Per Hectare
1. Rice		407	37.5 cavans
a. Lowland	377		45 cavans
b. Upland	30		30 cavans
2. Corn		37	12 cavans
3. Root Crops		19	11.6 tons
a. Camote	3		4.5 tons
b. Cassava	15		5.6 tons
c. Gabe	1		1.5 tons
T O T A L		463	

Source: Statistical Records - Extension Division, Department of Agriculture and Natural Resources, Pasig, Rizal.

TABLE XXXVIII-A

POPULATION OF LIVESTOCK, NOVALICHES, QUEZON CITY
1960

KINDS OF ANIMAL	Number
1. Carabaos	500
2. Cattle	200
3. Horses	20
4. Goats	150
5. Swine	300
6. Turkey	32
7. Chicken	10,000
T O T A L	11,202

Source: Statistical Records - Extension Division, Department of Agriculture and Natural Resources, Pasig, Rizal.

TABLE XXXVIII-B

VEGETABLE PRODUCTION, BY AREA PLANTED AND YIELD PER HECTARE
NOVALICHES DISTRICT, QUEZON CITY
1961

KINDS OF VEGETABLE	Area Planted (Hectare)	Yield Per Hectare
1. Eggplant	3	2,200 kilos
2. Pechay	1	1,000 kilos
3. Tomatoes	5	2,200 kilos
4. Beans	4	560 kilos
5. Ampalaya	2	1,150 kilos
6. Squash	10	1,716 kilos
7. Patola	5	1,178 kilos
T O T A L	30	10,004 kilos

Source: Statistical Records - Extension Division, Department of Agriculture & Natural Resources, Pasig, Rizal.

TABLE XXXIX

FRUIT PRODUCTION, BY AREA PLANTED, YIELD PER HECTARE AND TOTAL NUMBER OF TREES PLANTED PER HECTARE
NOVALICHES DISTRICT
1960

Kinds of Fruit	Area Planted (Hectare)	Yield Per Hectare	Total No. of Trees Planted/Ha.
1. Atis	15	5,300 pcs.	460
2. Avocados	5	4,071 pcs.	168
3. Bananas	30	450 bunches	462
4. Star Apple	15	4,960 pcs.	156
5. Cashew	10	1,000 pcs.	116
6. Chicos	6	24,000 pcs.	135
7. Guyavano	5	2,073 pcs.	183
8. Jackfruit	11	720 pcs.	127
9. Mango	280	9,714 pcs.	271
(a) Carabao	100	4,200	20
(b) Pico	180	5,514	251
10. Papaya	3	10,320 pcs.	560
11. Pineapple	1	15,000 pcs.	15,000
12. Watermelon	1	2,848 pcs.	2,500 hills
13. Anunas	2	215 pcs.	200
14. Balimbing	3	186 kilos	200
15. Citrus Fruit	30.5	111,180 pcs.	1,179
(a) Calamansi	2.5	90,000 pcs.	580
(b) Mandarin	3	10,000 pcs.	235
(c) Orange	5	6,600 pcs.	233
(d) Pomelo	20	4,520 pcs.	131
TOTAL	417.5	192,037	21,717

Source: Statistical Records, Extension Division, Department of Agriculture and Natural Resources, Pasig, Rizal.

TABLE XL-A

1950 AND 1960 POPULATION, BY OCCUPATION OF FAMILY HEADS
NOVALICHES DISTRICT, QUEZON CITY

OCCUPATION	1950		1960	
	Number	Percentage	Number	Percentage
1. Farmer	558	36.2	55	24.44
2. Unskilled Laborer	345	22.4	25	11.12
3. Skilled Laborer	255	16.6	65	28.89
4. Professionals	32	2.1	5	2.2
5. Proprietors	0	0	16	7.11
6. Pensioners	0	0	9	4.01
7. Non-Earners	351	22.7	50	22.23
T O T A L	1,541	100.00	225	100.00

Source: Progress Report, September 1 - December 31, 1950.

Note: 1960 Population is the Random Sample.

TABLE XL-B

NUMBER OF PROFESSIONALS IN
NOVALICHES DISTRICT,
QUEZON CITY
(1950 & 1960)

PROFESSION	1950	1960
1. Physician	4	13
2. Dentist	3	7
3. Pharmacist	2	10
4. Engineer	2	9
5. Clergyman	7	7
6. Teacher	13	18
7. Veterinarian	1	1
8. Agriculturist	0	2
9. Certified Public Accountant	0	2
10. Midwives	0	13
11. Nurses	0	3
12. Lawyers	0	6
13. Insurance Agents	0	3
TOTAL	32	94

Source: Progress Report, September 1 - December 31, 1950; Section of Income Tax, Professional Residence Certificate, Quezon City Hall.

APPENDIX "F"

INCREASE OF SALARIES OF QUEZON CITY OFFICIALS
1960

Officials	1950	1960	Increase
1. Mayor	₱ 10,000.00	₱ 12,000.00	₱ 2,000.00
2. Vice Mayor	6,600.00	8,400.00	1,800.00
3. Eight (8) Councilors	38,400.00	48,000.00	9,600.00
4. City Secretary	7,200.00	7,400.00	200.00
5. City Auditor	9,000.00	10,800.00	1,800.00
6. City Engineer	9,000.00	10,800.00	1,800.00
7. City Treasurer	9,000.00	10,800.00	1,800.00
8. City Fiscal	9,000.00	10,800.00	1,800.00
9. First Asst. Fiscal	7,200.00	9,000.00	1,800.00
10. Second Asst. Fiscal	6,000.00	8,400.00	2,400.00
11. (2) Third Asst. Fiscal	10,800.00	15,600.00	4,800.00
12. (5) Fourth Asst. Fiscal	24,000.00	36,000.00	12,000.00
13. (5) Fifth Asst. Fiscal	21,960.00	42,000.00	20,040.00
14. (7) Sixth Asst. Fiscal	33,600.00	43,200.00	9,600.00
15. (4) Judges, Mun. Court	7,200.00	8,400.00	1,200.00
16. City Health Officer	7,200.00	8,400.00	1,200.00
17. City Assessor	7,200.00	8,400.00	1,200.00
18. Chief of Fire Department	7,200.00	8,400.00	1,200.00
TOTAL	₱243,520.00	₱331,400.00	₱87,880.00

Source: Republic Act No. 2649.

APPENDIX "G"

TABLE XLI

CASES ENCOUNTERED DURING SURVEY, BY MEDICAL ATTENDANCE
NOVALICHES HEALTH DISTRICT
(MID-YEAR, 1950)

CASES	TOTAL	With Medical Attendance	Without Medical Attendance
1. Pulmonary Tuberculosis	55	39	16
2. Skin Diseases	35	11	24
3. Malaria	29	17	12
4. Common Cold	28	4	24
5. Beriberi	14	5	9
6. Diarrhea	14	6	8
7. Rheumatism	12	7	5
8. Asthma	10	3	7
9. Eye Troubles (Conjunctivitis Cataract)	10	3	7
10. Mental Diseases	7	1	6
11. Influenza	7	0	7
12. Measles	7	1	6
13. Pneumonias and Bronchitis	6	4	2
14. Chickenpox	2	2	0
15. Post-poliomyelitis	2	2	0
16. Leprosy	1	0	1
17. Diptheria	1	1	0
18. Others	126	63	63
TOTAL	366	169	197

Source: Appendix, RHD&TC Progress Report - September 1-December 31, 1950, p. 91.

APPENDIX "H"

(Samples of Training Content of Study Groups)

SCHEDULE OF HOME MAKERS' CLASS
Bagong Pag-asa, Quezon City

DATE	S U B J E C T	DISCUSSION LEADER
July 19	1. Interpretation of Health Department Services 2. Organization of the Class Films: Defending a City's Health Light Housekeeper	Miss Angela Vista
July 21	1. The Human Body & Its Hygiene with Emphasis on the Reproductive System 2. Foetal Development Films: The Human Body The Story of Menstruation Human Reproduction	Mrs. T. V. Tiglao Mrs. T. V. Tiglao
July 26	1. Personal Care During Pregnancy 2. Dental Care During Pregnancy Films: Mother & Child (reel 1) Clean Teeth	Miss Andres & Nurse Trainees Dr. G. F. Juliano
July 28	1. Normal Nutrition Films: Your Children's Teeth Rice & Health	Miss F. Santos
Aug. 2	1. Maternal Nutrition Nutrition During Pregnancy Nutrition During Lactation Films: Infant Care & Feeding Before the Baby Comes	Dr. R. Estrada
Aug. 4	1. Preparation for Confinement Film: Mother & Child (reel 2)	RHU Nurse Trainees
Aug. 9	1. Post Natal and Infant Care Infant Nutrition Immunization Demonstration Preparation of Formula Giving a Bath Burping	Miss A. Milan & Nurse Trainees

(Cont'd.)

Aug. 11	1. Physical, Emotional & Social Growth of Children Films: He Acts His Age Social Development Physical Development	Dr. Villarosa
Aug. 16	1. Common Diseases of Infant & Children Films: How to Catch Cold Juanito's Story	Dr. E. Duque
Aug. 18	1. Basic Principles in the Control of Communicable Diseases 2. Control of Respiratory Disease with Emphasis on Tuberculosis Film: How Disease Travels	Dr. A. M. Acosta
Aug. 23	1. Social Hygiene Films: Plain Facts Wanted for Murder	Dr. L. A. Ramos
Aug. 28	1. Environmental Sanitation	Engr. J. Alvarez
Aug. 30	1. Family Relations Film: Portrait of an American Family	Parish Priest

Organized By:

Miss Angela Vista
Health Educator Trainee

Supervised By:

Mrs. Teodora V. Tiglao
RHDTC Health Educator

SCHEDULE OF THE TEEN-AGER'S CLASSES
QUEZON CITY HIGH SCHOOL, THIRD YR.
Wednesday 2:00 - 4:00 P.M.

DATE	SUBJECT	DISCUSSION LEADER
July 13	Introduction to the Course Review - The Structure and Functions of the Human Body Films: The Human Body Defending the City's Health	Mr. B. Mendoza Health Educator, Q.C.H.D. Dr. G. M. Pintacasi Health Center Physician La Loma, Q.C.H.D.
July 20	The Meaning of Adolescence Physical Growth During Adolescence Menstruation Films: Story of Menstruation on Human Reproduction	Dr. R. Estrada Chief, Maternal and Child Health Division, Q.C.H.D.
July 27	Social and Emotional Growth During Adolescence Films: Emotional Health He Acts His Age	Dr. E. Guanzon Health Center Physician Cubao, Q.C.H.D.
Aug. 3	Film Discussion Films: Feeling of Rejection Feeling of Hostility	Mr. B. A. Mendoza Health Educator, Q.C.H.D.
Aug. 10	Nutrition During Adolescence	Miss F. Santos Health Educator Trainee RHDTC
Aug. 17	Dental Care During Adolescence Films: Clean Teeth Winky, the Watchman Your Children's Teeth	Dr. E. Santiago Public Health Dentist La Loma Health Center Q.C.H.D.
Aug. 24	Body Care and Grooming Film: Body Care and Grooming	Miss A. de Juan Health Educator Trainee RHDTC
Aug. 31	Diseases During Adolescence Common Colds, Tuberculosis, Rheumatic Fever, Acne, Dysmenorrhea Films: How to Catch a Cold Tuberculosis Wanted for Murder How Disease Travels	Dr. A. Ibarra Health Center Physician Kamuning, Q.C.H.D.

Schedule of the Teen-Ager's Classes (Cont'd.)

Sept. 7	Love, Courtship and Marriage	Fr. John P. Delaney, S.J.
Sept. 14	Family Relations Film: Portrait of an American Family Part 1 & 2	Mrs. N. Amoranto Principal, Emilio Jacinto High School, La Loma
Sept. 21	The Role of the Adolescent in Community Hygiene Film: Juanito's Story	Engr. J. Alvarez, Jr. Sanitary Engineer, RHDTC
Sept. 28	Choice of a Vocation Film: Career for Women	Mrs. Reyes Principal, Quezon City High School, Annex, La Loma
Oct. 5	E v a l u a t i o n	

G R A D U A T I O N (To be set)

SCHEDULE FOR FATHER'S CLASSES
6:00 - 8:00 P.M.
Quirino District

DATE	S U B J E C T	DISCUSSION LEADER
May 5	A. Introduction & Class Organization Interpretation of Health Department Services	Miss F. Fernandez Dr. E. Duque
	B. Human Reproduction Foetal Development Films: Heredity and Pre-Natal Growth Human Reproduction	Dr. A. Acosta
May 7	Hygiene of Pregnancy with Emphasis on the Role of the Father Films: Mother and Child (reel 1) Before the Baby Comes	Dr. de la Paz
May 12	Social Hygiene Films: Plain Facts Message to Women	Dr. F. Cruz
May 14	Child Growth and Development Films: Social Development Principles of Development	Dr. A. S. Mangay
May 19	Infant Care Demonstration: How to Hold the Baby How to Pin the Diaper How to Bathe the Baby How to Burp the Baby	Miss C. Biteng
May 21	Infant and Child Feeding Demonstration: How to Prepare the Formula Film: Infant Care & Feeding	Dr. C. Pascual Miss C. Biteng
May 26	Special Problems of Children Films: Feeling of Rejection The Child Went Forth The Angry Boy	Mrs. D. Gamboa
May 28	Common Diseases in Childhood	Dr. Yadao
June 2	Family Relations	Fr. J. Delaney

(Graduation Date . . . To be Arranged)

Organized By:
MISS FLORA FERNANDEZ
Health Educator Trainee

Supervised By:
MRS. TEODORA V. TIGLAO
RHDTC Health Educator

SCHEDULE OF CLASSES FOR FOOD SERVICE PERSONNEL

Place: Malamig Health Center
Time : 2:00 - 4:00 P.M.

DATE	SUBJECT	DISCUSSION LEADER
Aug. 30, Monday	Class Organization	Miss Leonor A. Jimenez Health Educator, Q.C.H.D.
Sept. 2, Tuesday	Microbe, Friend or Enemy ..... Films: "How Disease Travels" "How the Body Fights Bacteria"	Miss Leonor A. Jimenez
Sept. 6, Monday	Food-Borne Diseases and their Control ..... Film: "Cleanliness Brings Health"	Dr. Nicanor Legaspi, Health Center Physician, Q.C.H.D.
Sept. 9, Thursday	Food Service and Employee Courtesy .. Demonstration:	Mr. Gavino Carpio Sanitarian-Health Educator Manila Health Department
Sept. 13, Monday	Hand Dish-Washing and Good Housekeeping ..... Demonstration: Proper Hand Dish-Washing Techniques	Mr. Delfin Viloria Sanitary Inspector, Q.C.H.D.
Sept. 16, Thursday	Food Protection and Preservation	Mr. T. Falcon Sanitary Supervisor Manila Health Department
Sept. 20, Monday	Personal & Community Hygiene ..... Film: "Juanito's Story"	Engr. Jose R. Alvarez, Jr. Sanitary Engineer, RHD & TC
Sept. 23, Thursday	Rodent and Insect Control ..... Films: "The Rat Problem" "Keep 'Em Out"	Mr. Numeriano Mendoza Chief, Sanitary Inspector Sanitation Div., Q.C.H.D.
Sept. 27, Monday	Health Ordinances	Dr. Homero Angelo Chief, Division of Sanitation Q.C.H.D.

"G R A D U A T I O N"
(Date to be set)

APPENDIX "I"

THE TRAINING STAFF
of the
RURAL HEALTH DEMONSTRATION AND TRAINING CENTER

Educational Qualifications

Consultant and Coordinator -

Dean, Institute of Hygiene, University of the Philippines

Chief of Division -

Doctor of Medicine, University of the Philippines
Master of Public Health, Vanderbilt University
Doctor of Public Health, Harvard University
Visiting Lecturer, Institute of Hygiene, University of the Philippines
Professorial Lecturer, Graduate School and College of Education, University of the Philippines
Philippine delegate to United Nations Technical Meeting of Experts on the Training of Auxiliary and Community Workers for South East Asia, Gandhi Gram Madras, India, December 1952

Health Officer -

Doctor of Medicine, University of St.. Tomas
Certificate of Public Health, Institute of Hygiene, University of the Philippines
Visiting Lecturer, Institute of Hygiene, University of the Philippines
Civil Service Eligibility - Junior and Senior Health Officer

Nutrition and Health Educator

Bachelor of Science in Education, University of the Philippines
Master of Public Health, University of North Carolina
Visiting Lecturer in Health Education, Institute of Hygiene and College of Education, University of the Philippines
Staff Consultant Designee to FAO/WHO Nutrition Education and Health Education Seminar, Philippines, 1955
Member, WHO Expert Advisory Panel on Health Education of the Public
Civil Service Eligibility - Senior Teacher's

Social Welfare Officer -

Diploma in Nursing, Philippine General Hospital School of Nursing, University of the Philippines
Certificate of Public Health, University of the Philippines
Bachelor of Science Degree - Teacher's College, Columbia University, New York City
Civil Service Eligibility - Superintendent of Nurses, Senior Social Work

School Health Officer -

Doctor of Medicine, University of the Philippines
Civil Service Eligibility - Junior Health Officer, Quarantine Officer

Dental Health Officer -

Doctor of Dental Medicine, University of the Philippines
Philippine Delegate and WHO Fellow to the First WHO Dental Health Seminar, New Zealand, April 1954
Civil Service Eligibility - Dentist

Sanitary Engineer -

Bachelor of Science in Civil Engineering, Mapua Institute of Technology
Bachelor of Science in Sanitary Engineering, National University
Master of Science in Sanitary Engineering, University of North Carolina
Civil Service Eligibility - Assistant Civil Engineer, First Grade

Sanitary Inspector -

Diploma in Nursing, Philippine General Hospital School of Nursing, University of the Philippines
FOA Fellow in Environmental Sanitation, USPHS, 1954-1955
Civil Service Eligibility - Examination for Nurses

Nurse-Supervisor -

Diploma in Nursing, Philippine Christian Institute Hospital Training School for Nurses
Bachelor of Science in Education, Arellano University
Bachelor of Science in Nursing, University of Sto. Tomas
American Nurses' Association Trainee, USA, 1953-1954
Civil Service Eligibility - Nurse Social Service

5 Public Health Nurse-Instructors -

Diploma in Nursing and/or Bachelor of Science in Nursing, University of the Philippines, with Civil Service Eligibility

APPENDIX "J"

TABLE XLII

TRAINING LOAD OF RURAL HEALTH DEMONSTRATION AND TRAINING CENTER BY ACADEMIC YEAR ACCORDING TO CATEGORIES OF TRAINEES (1950-1960)

ACADEMIC YEAR	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60
CATEGORY OF TRAINEE	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
Physician	14	25	33	77	204	93	18	18	30	34
Nurse	16	17	32	61	53	123	101	40	57	69
Midwife	14	0	0	39	9	26	0	48	5	14
Sanitary Engineer	0	0	0	0	3	9	0	0	1	0
Sanitary Inspector	0	14	26	59	85	39	58	36	1	1
Health Educator	0	0	2	7	10	11	18	5	3	0
Dentist	0	1	2	11	3	7	0	0	55	6
Nutritionist	0	1	1	0	0	0	0	0	0	0
Social Worker	0	0	0	1	0	0	0	0	0	0
Undergraduates:		231*	401*	489*						
Medicine					100	115	191	0	258	100
Hygiene					10	10	0	13	37	24
Nursing					375	323	398	304	234	268
Midwifery					74	103	135	49	326	252
Others					0	179	39	59	11	6
T O T A L	44	289	497	735	926	1038	958	572	1018	774

*Not classified by category.

APPENDIX "K"

UNICEF-PHILIPPINE PARTICIPATION PROGRAM

RURAL HEALTH DEMONSTRATION AND TRAINING CENTER

F A M I L Y C A R D

Surveyed by: _____

Designation: _____

Address: _____ Date began : _____

Date completed: _____

I. MEMBERS OF FAMILY (INCLUDING HELPERS, BOARDERS, ETC.)

NAMES (Write name of Head of Family First)	Age	Sex	Nationality	Civil Status	Religion	IMMUNIZATION				Transient or Permanent Resident	Occupation	Place of Work or School	Approximate Monthly/Daily Income
						CTD	Smallpox	DPT	Others				

II. PRESENT ILLNESS IN THE FAMILY

NAMES	Onset of Illness	Medical Attendance	Confinement	Probable Diagnosis	Reported	Action Taken

III. DEATHS IN THE FAMILY DURING THE PAST 5 YEARS

Name & Age of Deceased	Probable Date of Death	Probable Cause	Medical Attendance	Place of Death

IV. MEDICAL, DENTAL, SOCIAL, AND PUBLIC HEALTH NURSING SERVICE

Name of Organization Rendering Service	Number Receiving Service	Dates of Service	Kind of Service	Number Needing Service	REMARKS

V. DIETARY HABITS

Usual Articles of Diet	Where Obtained	Approximate Frequency	Average Daily Expenses for Food

HOUSE CARD

I. GENERAL INFORMATION

Estimate of Sanitary Condition	Construction	Number of Rooms	Number of Families	Type of Toilet	Bathing Facilities	Remarks

II. DRINKING WATER

Source	How Obtained	How Stored	Drinking Glasses	Remarks

III. KITCHEN

Location	Facilities Present (Native Stove, Gas, etc.)	General Condition	Fly & Roach Prevalence	Washing Facilities	FOOD STORAGE	
					Covered or Screened	Open

IV. REFUSE DISPOSAL

Kind	Containers Provided	Maintenance	Disposal	Exposure to Flies, etc.	Remarks

V. DOMESTIC ANIMALS

Kind	Number	Where Kept	Sanitary Condition	Source of Nuisance	Remarks

VI. ENVIRONMENT

General Sanitary Condition	Drainage	Presence of Breeding Places of Mosquitoes, Flies, etc.	Presence of Stray Animals	Fencing	Orchard Vegetables Garden	Recreational Facilities

STATEMENT OF PROBLEMS:

APPENDIX "L"

STRONG ACCEPTORS

CASE STUDY NO. 1

Mr. and Mrs. A, ages 36 and 32 respectively, had 5 children with ages ranging from 10 years to 5 months old. When interviewed in the 1950 survey, the couple had only a year old child. Mr. and Mrs. A both finished Grade IV. Mr. A was a driver in 1950 but did not have any fixed salary. The family lived in a 4-room strong material house but only had an open pit for toilet. The only child they had was delivered by a "hilot". They did not, in anyway, utilize the health center services or the services of any other public or private medical practitioner.

A review of the family folder in the Health Center gave strong evidences of changes in health practices of the family over the years. All the 4 younger children had been delivered either by the nurses of the health center or by the nurses from the Domicilliary Obstetrical Service, of the Quezon City Health Department. The family folder also showed that Mrs. A and her babies have attended the pre-natal and well-baby clinics regularly. When visited for the interview in 1960, it was also found that Mr. and Mrs. A have improved their house and are now using a flush toilet with a septic tank. The house and surroundings are neat and clean. Mr. A is still a laborer earning P140.00 a month but, in addition, he has a flourishing poultry business.

During the follow-up interview, it was found that the family have adopted the flush toilet because they have found the pit very unsatisfactory. It easily fills up, is inconvenient and emits an obnoxious

odor. Besides, the field they used for their toilet site has been fenced by the owner so they could no longer use it. Also, their brother, who used to live next door has become a successful businessman and has moved to another site leaving his septic tank for them to use; hence all they had to do was to make the necessary pipe connections.

When asked why Mrs. A has utilized the nurse and the health center since her second baby, she answered that the frequent home visits of the nurses during her second pregnancy plus the commendable remarks made by her neighbors who have been attending mother's classes and special clinics in the health center made her try the nurses. This experience proved very rewarding to her. It was more convenient and cheaper to be delivered by the nurse. She could drink cold water, take a bath after a few days and this meant freedom from the many proscriptions imposed by the "hilot". Besides, she did not have to pay the nurse whereas the hilot would have charged her P12.00 for delivering a boy; P10.00 for delivering a girl, P1.00 a day for the required massage and P4.00 for the bath which was given on the 25th day. After she has proved to herself how much better it was to be delivered by the nurse, she felt it her responsibility to go to the well-baby conferences as a sign of gratitude for the nurse's services until it became a habit with her. Now, even when she delivers at night, she calls the Domicilliary Obstetrical Service.

Mr. and Mrs. A's 5 children are all apparently thriving well. Even Mrs. A's mother, age 56, who is living with them, has likewise, adopted modern health practices. At times when the health center

physician is not available, Mr. and Mrs. A's family utilizes the services of a private medical practitioner.

CASE STUDY NO. 2

Mr. and Mrs. B, ages 36 and 30 respectively, and both elementary school graduates, are parents of 6 children ranging from ages 12 years to 5 months old. When surveyed in 1950, the couple lived in a neatly constructed "sawali" house in barrio Ilang-Ilang with 2 children, both delivered by a hilot. Ilang-Ilang was a hacienda, a portion of which, Mr. B farmed. Mrs. B had never visited the health center nor utilized any of its services because they were not aware of its existence. The barrio had a "hilot" and an "herbolario" whom they patronized. The wide-open spaces conveniently served as the family's means of waste disposal.

When interviewed in 1960, the family had changed residence from barrio Ilang-Ilang to the poblacion. Ilang-Ilang has become a subdivision and the family was paid ₱450 to move out of the place. Mr. and Mrs. B had to construct a new house, a 2-room wooden affair and because of the new location, they necessarily had to construct a pit privy in accordance with the requirements of the health department. Mr. B has also changed his occupation. There was no longer a hacienda to farm. Now he works as a horticulturist who, with a contractor, accepts contract for gardening and landscaping with the more affluent families and he definitely earns more.

Somewhere in 1952, a mother's class was organized in Ilang-Ilang by the Rural Health Demonstration and Training Center and the Quezon

City Health Department. Mrs. B was one of the leaders in this class and encouraged the other women to join. As a consequence, Mrs. B started to consult the health center and she realized the advantages of regularly using its facilities for pre-natal, post-natal and child health services as well as for treatment. Since her third baby, she has come for pre-natal supervision. But inspite of her patronage, she still utilized the services of a hilot during her time of delivery. Asked why she did not call the health center nurse, Mrs. B countered that anyhow the hilot she used to engage was one trained by the UNICEF Hilot Training Program.

After her last baby, however, 5 days after delivery, she was rushed to a local hospital and was operated on for acute appendicitis. Here she was introduced to the routine hospital procedures and modern treatment and inspite of her having been newly delivered, was made to drink cold water, was given the daily sponge, was allowed to ambulate earlier than she was used to. She was deprived of the daily massage of the "hilot" and all the concomittant "don'ts" after delivery. She was surprised that she was allowed to walk around and go up and down the house and that she could launder even prior to the 25 days set by the hilot. With this introduction, she alleged, she has accepted and adopted more of the modern health practices with minimum reservations.

CASE STUDY NO. 3

Mr. and Mrs. C, 45 and 42 years old respectively, and parents of 8 children, may be considered a well-to-do family. The 1960 survey found them living in a large 2-story house with a spacious backyard,

which they utilize for a flourishing poultry farm. In addition, they own a store for poultry feeds. Mr. and Mrs. C own a jeep and with this they run a "travelling store" of fresh foods.

The family is equipped with many types of modern conveniences - a refrigerator, an electric stove, a private drilled well, septic tank with a modern flush bowls, etc. The house is neat and clean. The children are all grown up, the eldest being 23 and married and the youngest, being 4 years old.

In contrast, Mr. and Mrs. C in 1950 lived in a smaller house - a 4-room affair minus all the modern facilities. They had a pit for toilet and got their water from the public well. They barely utilized the health center then. All the 5 children born to them were delivered by "hilots". The change in residence occurred when a sister, who used to own the present house, went to the United States and sold the furnished house to them. The brother-in-law is a U.S. citizen, hence there were modern conveniences in the new house.

An examination of the family folder showed that since 1950, the family has utilized the services of the health center regularly - the pre-natal, the well-baby, the general and the dental clinic. However, except for the last child, now 4 years old, the hilot had been called during the period of delivery. With this last baby, she had difficult labor, and by necessity had to call on a physician. Then, there was a niece who almost died because of puerperal infection after being delivered by a "hilot" and was saved because they brought her to a hospital. In view of this experience, when their daughter-in-law gave

birth to their first grandson, Mr. and Mrs. C would not hear of engaging the services of a "hilot". The daughter-in-law is a regular client of the health center and brings her child regularly to the well-baby conferences.

When the children were asked whether they ever remember being treated by an 'herbolario', they said they don't have any such recollection. All they remember is that a private physician has always attended them when they were sick.

CASE STUDY NO. 4

Mrs. D, (50), is a widow living with an unmarried daughter, Rosario (15) in 1950. Mrs. D supported herself and her daughter by selling vegetables. Mother and daughter lived in a 4-room nipa house with another family in a remote area of the district. As can be expected, the house did not have any form of toilet, hence the backyard served as one. Mother and daughter got their drinking water from the public artesian well and stored the water in a native jar. They claimed that they utilized the health center now and then.

The resurvey in 1960 found mother and daughter living in a modern, newly constructed 2-storey house near the highway. It was well provided with modern conveniences - electricity, a private drilled well, a septic tank, a private jeep, refrigerator, radio, etc. Rosario, now 25, is married to a city boy, a stevedore. Both are elementary school graduates. They now have 3 children, ages 5, 3 and 1. She has been a regular client of the pre-natal clinic during her three

pregnancies but during the time of labor, she still calls a hilot to attend to her. Her reasons were: (a) she delivers very easily, (b) she has been assured at the health center that her pregnancy is normal, (c) the hilot lives very near their house whereas, it is very difficult to call the Domicilliary Obstetrical Service because the telephone is at the "poblacion" (some 4 kms. away) and (d) the "hilot", anyway, has been trained at the Health Center and has been given by the UNICEF a midwifery kit. She brings her child to the well-baby conferences. When the health center is not open, she calls the private medical practitioner.

CASE STUDY NO. 5

Mr. and Mrs. E of Bagbag, Novaliches, 47 and 41 years old respectively, are obviously a well-to-do couple. Mr. E is a proprietor and businessman and has about 35 cavanes of palay as his share from his lands. In addition, he owns a jeepney, from which he nets at least P5 a day and is engaged in other kinds of business. The couple has 5 children, the eldest being a nursing student at UST, the next 3 are high school and elementary school students, while the youngest is 6 years old. The family lives in a 2-storey strong material house provided with all modern conveniences - a private drilled well, septic tank and flush toilet, a hi-fi set, piano and washing machine. The house is neat and clean. The family seldom utilizes the health center now as Mrs. E no longer gives birth and her youngest is now 6 years old. Whenever any member of the family gets sick, the family calls Mr. E's brother, a physician, or goes to the hospital.

The family picture was different in 1950. The family was living in a 2-room light material house; had a pit toilet and obtained water from a surface well. Mr. E was not as prosperous as he is now and Mrs. E helped by being a seamstress. The 4 children were all delivered by the hilot without any benefit of pre-natal supervision. With her last baby, however, Mrs. E availed herself of the services of the pre-natal clinic, called on the licensed midwife during the period of delivery and brought the child to the health center during the well-baby clinic. This was because she found the health center more active.

Asked why the family has changed, Mrs. E answered that although the family could have afforded to live more comfortably in the past, the standard of living in the community was low and nobody cared to have a nice house, or have a decenttoilet or sanitary drinking water. However, when the children grew up and went to college, they demanded a better house and modern facilities. Besides, there are now a number of new houses constructed by city folks who have bought lands in the place and by other local residents. Mr. E is a person of status and had to conform with the norms of his peer-group.

CASE STUDY NO. 6

Mrs. F, 49, is a widow with one son, Celso, 19. Her husband was killed by the Japanese in 1944. Her main source of income is her pension of ₱70 a month plus odd jobs for additional source of income. Her son is jobless.

Inspite of this small income, however, Mrs. F has shown improvements in her way of life within the last 10 years. Whereas, she used to

live in a small 2-room light material house in 1950 without a toilet, she now owns a 4-room strong material house. While still unpretentious, it is a definite improvement over the old one. It is also newly fenced. She now owns a new toilet (water seal type, locally made) with a septic tank. She also has a radio.

Even her personal appearance has improved. In 1950, her teeth badly needed dental care but she admitted she was afraid to submit to dental treatment. Now, she has a new set of dentures.

She has been a regular client of the health center inspite of the fact that she no longer gives birth and her son is grown up. She has kept posted about the improvements in the health center services as her house is only a stone's throw from the health center. She is among the few people who could identify the improvements in the community life of the people in Novaliches. She said that the intensive public health program and increased home visits made by the health center nurses and the trainees have contributed to the better patronage of the health center and the increasing health consciousness of the people.

CASE STUDY NO. 7

Mrs. G, 58, formerly a teacher, is a widow with 3 children. She is a pensioner, her husband and 2 children having been casualties in the last war (World War II). Her youngest son is a recent medical graduate; her eldest is an employee, whereas her daughter is married and residing in Manila.

The G's now live in a modern 2-storey strong material house with all modern facilities - flush toilet, electricity, private drilled well,

high-fi set, refrigerator, electric stove, etc. As a matter of fact, Mrs. G is considered one of the community leaders to whom people go for help - financial, employment, or otherwise. She used to be the president of the Ladies Association and it was during her incumbency when the new Novaliches Health Center was constructed and equipped. Her family is one of the oldest in the area and wields a strong political influence especially when her party was in power.

While Mrs. G is a strong accepter of modern health innovations, her way of life in 1950 did not completely attest to this. She used to run a corner sari-sari store which was not at all satisfactory from the sanitary point of view. There was no washing facilities except a basin of water in which utensils were dipped. Foods sold were not covered and protected from flies and dust. The house in which she used to live was a shabby looking wooden affair without any toilet. Her garbage was stored in an open can.

Mrs. G, in addition to her sari-sari store engages in real-estate business. With the cropping up of subdivisions and the rise of the value of real-estate, Mrs. G's business flourished. Besides, Mrs. G herself owns a number of lots. Like many of the other people in the area, selling a parcel of land at the present high rate would enable one to have enough cash with which to construct a house. In preparation for the graduation of her son from medical school and in order to keep up with the expectation of the family of her daughter who is from Manila, Mrs. G through her children's influence decided to construct the new house which also meant improvement in her sanitary environment.

The health center being her "baby", she still takes an active interest in seeing to it that the services are of high quality and that it is patronized by the people in the area.

CASE STUDY NO. 8

Mr. and Mrs. H, ages 48 and 42 respectively, are the parents of 8 children with ages ranging from 24 to 1 year old. Mr. H finished Grade III and Mrs. H Grade II. When surveyed in 1950, the couple had only 5 children, the eldest being 14 and the youngest, 4 months old. Mr. H then was a laborer with no fixed income. The family lived in a 4-room nipa house without any toilet facilities, the backyard serving well for this purpose. Their source of drinking water was a surface well. The house was devoid of any modern facilities.

All of the 5 children were delivered by the hilot and Mrs. H never did avail herself of the services of the health center before 1950. The children have not received any form of immunization and the family needed dental care badly at the time.

With the intensified public health program introduced in the area since 1950, Mrs. H was informed by a neighbor somewhere in 1952 about the different special services being offered at the health center. Her 6th baby was then newly born, so she tried bringing it to the well-child conferences. She was then convinced of the many advantages that accrue from this practice - early detection of the child's ailment, free medicines, and free immunization. From that time on, Mrs. H became a regular client of the health center utilizing the well-baby, the pre-natal and the general clinic. With her other children, the 7th, 8th and 9th,

she availed herself of the services of the pre-natal clinic and the licensed midwife. She finally realized that the licensed midwife is better prepared than the hilot in handling deliveries.

The family now lives in an entirely new strong material house as the old nipa house was burned down. The new house is provided with electricity, radio and a septic tank with a flush bowl although they still use the public artesian well which is very accessible. Mrs. H claims that the family had to make these improvements because the children, now grown-up, demanded a better way of life. Mr. H now gets about 60 cavanes a year as his share from his farm. Besides, 2 of the older children are both regular employees each earning P120 a month and are still unmarried. The next 4 children are all students. The family now enjoys a more comfortable life.

CASE STUDY NO. 9

Mr. and Mrs. I are a young couple with 5 children. Mr. I, 33, a Grade VII graduate, is a Sergeant of the Philippine Army earning P120.00 a month plus his privileges as a soldier. Mrs. I is 28 and a Grade VI graduate. The family lives in a 3-room, strong material house. The house is small but one is impressed with its neatness. Mr. and Mrs. I own a radio and a small television set in which they take pride. At the backyard is a neat looking outhouse of the closed pit type.

The 5 children, ages ranging from 11 years to 4 years old are all healthy looking and well-cared for. All of her children were delivered in hospitals; the eldest at the Maternity and Children's Hospital

(her husband was not yet in the army then) and 4 at the V. Luna Hospital. She had regular pre-natal care at the Health Center and she availed herself of the services of the well-baby clinic for all her 5 children.

When asked why she patronized the health center and hospitals, she replied that her parents who used to be well-to-do and who are progressive in their ideas have brought her up in this manner. She also added that the neighborhood in which she used to live was mostly composed of young couples, some of whom were her own kin. They got married almost at the same time. When the mothers' classes were organized by the health center, they attended the classes together including her own mother. They went to the pre-natal clinics as well as to the well-baby clinics together and they had fun in having their babies compete with one another. She delivered at V. Luna Hospital because this is a privilege for all army personnel. She also recalled how, when she delivered her first born at the Maternity and Children's Hospital when her husband was still out of job, her obstetrician was solicitous enough to give her ₱5.00 so she could take a taxi back home. This left pleasant memories of hospital care with her.

Mrs. I and her children are still active cases of the health center.

CASE STUDY NO. 10

Mr. and Mrs. J, ages 63 and 57 respectively, are a childless couple. They live in a 2-story, new strong material house with a sari-sari store on the first floor. Mr. J is a pensioner (₱12.50 a

month) but the main livelihood of the couple is their store. The new house is equipped with a refrigerator, high-fi, electric stove, a flush toilet and a private drilled well.

In 1950, the couple lived in a mixed material house, very modestly furnished, had a pit privy and used surface well as their source of drinking water. They did not use the services of the health center, nor of any private physician.

The 1960 records shows that the couple is an active client of the health center. When asked why they now patronize the health center, they replied that in 1950 they were both whole and healthy but now that they are both getting old, they are both bothered by chronic ailments. Mr. J, having been a Japanese prisoner, now suffers from peptic ulcer whereas Mrs. J, after the big flood in 1960 has constantly suffered from rheumatism. They not only avail themselves of health center services but they also consult specialists at the U.S.T. Hospital.

Mr. and Mrs. J, now better off financially, feel, that inasmuch as they are getting old, and childless at that, they should enjoy the conveniences of modern living.

CASE STUDY NO. 11

In 1950, Mrs. K lived in a 4-room light material house with her 4 children, Roberta, 21, Federico, 19, Rodolfo, 15 and Dolores, 13. Roberta was already married then to an enlisted man of the Philippine Army, while Federico was a conductor of the Halili bus line. The other 2 children were students. Even at that time, the family were clients of the health center, they had a pit privy and the family used the

public artesian well.

In 1960, the children of Mrs. K have all gotten married and instead of the only house that stood in the lot, there is now a compound with 4 houses, each married child owning one. The old house owned by the widow now belongs to Rodolfo, 25. Rodolfo finished first year high school, while his wife is a high school graduate. The young couple are the parents of 3 boys, ages 3, 1½ and 5 months. Rodolfo is a thriving businessman dealing with the buy and sell of domestic animals - carabaos, hogs, cattle, etc. He also rents a piece of his lot to a poultry farm. In addition to the rental, he also has the added advantage of having a private drilled well constructed near his house at the expense of the poultry owner. Now that he seems to be better off financially, he also plans to improve his pit privy.

Rodolfo's house is a modest 4-room strong material affair but one is immediately struck by the cleanliness of the house itself and its surroundings.

The young Mrs. K has religiously attended the pre-natal and the well-baby clinics. When asked why she has patronized the health center services, she replied that the health center nurse has frequently visited her and has invited her to the health center. She has found her experiences at the health center very satisfactory. Her first 2 children were delivered by the health center personnel but the last was attended by an unlicensed midwife but trained at the health center because the health center personnel were not available at the time (midnight).

Mrs. K has also had minimal TB and has regularly consulted the Quezon Institute. For the last year, she has been taking TB X-rays and has had herself X-rayed every 3 months. She has been declared "clear" lately but has been advised to have another X-ray after 6 months. She seemed to have all the intentions of following doctor's order as she expressed real concern over her condition. She even mentioned that she would like to practice family spacing in order to protect her health.

CASE STUDY NO. 12

Mr. and Mrs. L, 42 and 37 years old respectively, are the parents of 7 children with ages ranging from 13 to 1 month old. For all seven children, Mrs. L had the benefit of pre-natal supervision and all the children have had child health supervision at the Novaliches Health Center. The first baby was born at the Maternity and Children's Hospital, Manila. For the rest of her children, she was attended by the health center midwife.

Mrs. L has never utilized the services of a hilot. She claimed that at the start, she has gotten so used to hospital care that she is afraid to even try a hilot. Her mother and her older sister had insisted that she consult a doctor whenever she was with child.

Even in 1950, when Mr. and Mrs. L were newly married and starting life together, Mrs. L did not hesitate to use the health center. At that time, the couple lived in a 3-room barong-barong, devoid of a privy with very poor sanitary environment. Animals roamed around; garbage was disposed improperly and flies abounded in the place, Now, the couple lives in a unpretentious but sturdy looking house provided with

a sanitary privy and a private drilled well.

Mr. L owns a jeep which he runs in the mornings and from which he earns at least ₱10.00 a day; he has a rice land from which he gets an average share of 15 cavanes, and he owns a poultry farm with about 58 layers and an equivalent amount of friers.

The couple owns a radio and some other modest pieces of furniture. All in all, they admit that they are better off now than they were in 1950.

CASE STUDY NO. 13

Mr. and Mrs. M, now 50 and 55 respectively, are the parents of 3 grown up girls, ages 20, 19 and 16. The eldest is a student at the University of Sto. Tomas taking Commerce, the youngest, a high school student at the Novaliches Academy. The second daughter who finished high school got married a year ago and is living with her family.

Mr. M is the chief machinist of General Francisco's Rice-Mill and earns ₱145 a month. Mrs. M is the cousin of Mrs. Francisco and her family appears to be well-to-do. She and the other members of her family live in a compound and all, including her father and mother live in a very decent looking house provided with modern conveniences - a private well, septic tank with flush toilet, good looking furnitures, hi-fi, electrical devices, etc. Added to the family income is the earning of their son-in-law who is employed by the Jacinto Steel.

The health center records show that the M family had been users of the health center services even prior to 1950. Mrs. M claims that

the late Mrs. Francisco who was her cousin was the one who influenced her most in the matter. Mrs. Francisco had been most influential in the introduction of the health center services in Novaliches, so much so that she offered the ground floor of her house for the site of the health center. In addition, the Francisco Rice-Mill where Mr. M worked used to be located next door to the health center and this constant exposure of the family to the health center services and personnel cannot be underestimated. However, in 1950, inspite of the good looking house, the family did not own a toilet nor a well.

In 1960, the married daughter was having a baby and she availed herself of the pre-natal supervision at the Health Center. The health center physician advised her to deliver at the hospital, this being her first born. The physician must have had some reasons for predicting difficulty of labor. Contrary to the physician's advise, however, the family decided to have the daughter deliver at home after getting the assurance of a private practitioner to attend to her. Unluckily, when her time came, neither the private practitioner nor the health center physician were immediately available so they had to resort to the health center midwife. During the period of labor, before the private practitioner arrived, the patient started to bleed and Mrs. M claims that the physician attributed the bleeding to some mismanagement by the midwife. The patient had to be brought to a hospital in Manila where she gave birth to a stillborn. This seemed to have been a traumatic experience for the young mother and now, she is projecting all her hostilities against the midwife in particular and the health center in general.

She is again with child, but inspite of her many complaints, she has persistently refused to go to the health center for pre-natal supervision despite her mother's entreaties. She insists on consulting her private doctor, but even this she has postponed. Whether this young mother will get over her prejudices against the health center personnel and services still remains to be seen.

CASE STUDY NO. 14

Mr. and Mrs. N was a young and newly married couple in 1950. The husband, then 26, was a private in the Philippine Constabulary earning ₱75.00 a month, while the wife, 20, was a clerk in General Francisco's Rice-Mill with ₱50.00 salary. Both were high school students. They had 4 children at the time ranging from 3 years to 16 days old. The couple lived with the husband's family in a small house.

Mrs. N, while working in the rice mill was constantly exposed to the health center services and personnel, the center having been located in the same building. She practically attended all of the mothers' classes held in the center and she even helped recruit some of the mothers who attended the class. Besides, her employer, Mrs. Francisco strongly influenced her to adapt modern health practices. It was no problem for her to come for pre-natal supervision or to have her children submitted for child health supervision inasmuch as the services were very accessible to her and she had very good relations with all the health center personnel. All her pregnancies were therefore under medical supervision and all her children were given regular child

health supervision. All of her children were delivered either by the hospital at Camp Crame or of the V. Luna Hospital.

Mr. and Mrs. N, now have 5 children, the oldest 11 and the youngest 3. Within the decade, Mrs. N has been able to study hair science and now she owns a flourishing beauty parlor. Mr. N is now a P.C. Sergeant with a salary that has been doubled. They now own their house, a modern bungalow with its own septic tank and flush bowl and private drilled well with very satisfactory sanitary conditions.

CASE STUDY NO. 15

The 1950 survey found O, 32, a widow and a market vendor, with 2 grown-up children, Domingo, 18, a laborer with unfixed income and Fausta, 12, an elementary school student. The family was living in a one-room descrepit nipa house with very insanitary environment - no toilet or bathing facilities, poor kitchen facilities, with very poor drainage that served as breeding places for mosquitoes, and flies; no garbage containers and with stray animals roaming around. The family has not had any form of immunization nor did they have any medical, nursing or social services except for Fausta who benefited from the school health services.

The 1960 survey revealed an entirely different family picture. The family now lives in a new, strong material house, provided with a septic tank and a flush bowl and a private drilled well, a radio, electric iron, etc. The surroundings is sanitary notably without any stray animals and littered garbage. Also, the charts in the health center showed that the members of the family, now actually 3 families,

are active cases in the health center.

Within the decade, the family's financial resources has increased. Felipa, the mother, is no longer a market vendor but is a regular employee at the Philippine Tobacc Flu Curing and Redrying Company earning ₱120 a month; Domingo, now married, is a driver earning at least ₱5.00 a day; while Fausta's husband, a regular employee at the Manila Paper Mills, earns ₱180 a month. The family's income, pooled together, means something to the family. Besides, Felipa was able to collect back-pay money, her deceased husband having been a soldier.

Domingo now has 3 children; so with Fausta. Domingo's wife has always delivered in the hospital in Manila because she has always had difficulty of labor. She can never entrust herself to the hilot. During the period of pregnancy, she utilizes the services of the health center; her children also avail of the child health supervision rendered by the health center. She claims that it was through the advice of friends and neighbors that she learned of these services.

Fausta, who married some years later, was influenced by her sister-in-law. She is likewise a regular health center client and calls on the health center midwife during puerperium. She has developed so much confidence in the said midwife that she feels she will always ask her to attend to her.

In cases of illness, the family utilizes the services of a private practitioner.

CASE STUDY NO. 16

Mr. and Mrs. P, now aged 38 and 30 respectively, were newly married in 1950 with a five-month old baby. Mr. P was and still is a stenographer in a Manila business firm. Mrs. P finished dress-making and owns a dress shop. In 1950, the couple lived with the husband's family, a well-to-do and rather progressive family. Even at that time, the house of the in-laws was among the decent looking ones in the area and was provided with a pit privy. The environment was sanitary.

Mrs. P used to be a clerk at the health center when she was still single. With her exposure to the health center services, it was to be expected that she would take advantage of them. Her first born was delivered by the health center personnel and she benefited from the post-natal visits of the health center's physicians and nurses. During the mothers' classes conducted by the health center, Mrs. P was one of the regular participants.

Mr. and Mrs. P now have a house of their own, a modest but sturdy and clean looking one provided with a septic tank and a flush toilet, a private drilled well, a refrigerator, a radio and a dress shop. Over the years, Mr. P has had increases in salary meanwhile, Mrs. P's dress shop has been flourishing. The couple has 3 children now, Leoncio, Jr., 11, Danilo, 9 and a 6 months old baby. The last baby was delivered in a Manila hospital. Mrs. P and her children are still active cases in the health center.

CASE STUDY NO. 17

Mr. and Mrs. Q are the parents of 5 grown-up children. Mr. Q, now 61, is an operator of the NAWASA earning P150 a month as well as a proprietor. His son, Baldomero, 24 and married is a jeep owner and driver and nets at least P120 a month. A daughter, 26 is presently a clerk at the Quezon City Hall with a salary of P140 a month. The 3 other children, (the youngest is 14) are students. Added to the family income is the house rental (P50 a month) and their share from their rice field totalling at least 50 cavanes a year.

The family now lives in a 2-story semi-concrete house with evidences of prosperity. The house is equipped with modern conveniences characteristics of sub-urban living. The children being all grown-up, the family no longer use the health center services. Instead, they have their own family physician.

Even as far back as 1950, Mrs. Q and her children have availed themselves of the health center services. Their environment was sanitary. The only objectionable feature then, as far as health was concerned, was their source of drinking water which was a dug well. The family at that time lived in another house (the one being rented out now). The family must have been really financially well off in terms of real-estate but not in cash, but with the employment of 2 children and the rise in the price of lands, the family has acquired more cash and was able to put up a more modern house. Besides, the family boasts of being one with social and political status, (a political leader) and this has spurred Mr. Q to keep up with the Joneses - not only socially but health-wise as well.

CASE STUDY NO. 18

In 1950, R, a couple in their middle 40's were already parents of 7 grown-up children ranging from 22 years old to 8 years old. Mr. R was a farm hand in Novaliches without fixed income. The eldest daughter was a dressmaker earning a meager sum of about ₱20.00 a month, with the second eldest daughter, a vender at Novaliches, helping increase the family income. The other 5 children were all students. The family lived in a mixed material shabby looking house without any provisions for sanitary waste disposal. The 1950 survey data states the health problems of the family thus:

1. Mother a TB case
2. Immunization needed by the family
3. No privacy in the home
4. Dental services needed
5. Diet inadequate
6. Waste disposal and environment unsatisfactory.

The family did not seem to have any use for the services of the health center at the time. They claimed to have a family physician, possibly for Mrs. R who admitted she had Pulmonary TB.

The 1960 survey found Mr. and Mrs. R in their middle 50's evidently more prosperous. The house had been enlarged and with a lumber yard occupying ½ of the ground floor and a sari-sari store at the other half. A drilled well, though public, is located right in front of the house and the R's now boast of owning a septic tank with a flush toilet.

Obviously, the family is now financially better off and has climbed the social ladder in the community. Mr. H is a businessman. The eldest son, now married, is a commerce graduate, a Certified Public Accountant; another son is a musician; one daughter is a B.S.E. graduate from U.P. and is now teaching in Bulacan. The other daughters have married and have their own homes. Only the youngest daughter is still in school.

The family started using the health center services particularly the general-dental clinics after 1950 and is considered an active client till 1960. The members of the family came for general-medical check-up, for anti-rabies injection, for dental treatment, for treatment of wounds and other slight ailments. They can now really afford the services of a private physician.

STRONG REJECTORS

CASE STUDY NO. 1-A

Mr. B. B., 54 years old in 1950, married to L.A., 42, was a wood cutter with an unfixed income. Husband and wife were both illiterate. The couple had a son, Melchor, then 10 years old and a student at the elementary school. The family lived in a decrepit two-room dwelling, actually a shack, very filthy, with garbage strewn around and stray animals roaming the place. The kitchen was located at the rear, with flies teeming the area. This is easily explainable with the absence of toilet plus the very insanitary environment.

The 1960 survey found the family in practically the same deplorable condition. While the family has been forced to move to another site, a more interior location, the same house stood with the same unhygienic aspects. To add to the misery was Mr. B's health condition. Now 64, Mr. B was found suffering from hypertension, partly paralyzed, but because of poverty, he could not have the benefit of medical attention. Melchor, now 20, is married, adding another mouth to feed. Melchor is an unskilled and casual laborer in a gravel and sand supplier. He is the main breadwinner in the family. A second visit to the family found Mr. B already dead, having been the victim of heart attack and having died without any medical attendance.

When questioned as to what social and health changes they can identify in the community, the family could not identify any. Neither did they know of any person whom they could consider as leaders in the community. When further asked why they have never sought the services

of the health center, they replied that they are totally ignorant of the services available because they have never tried using it. They also claimed that all the time they thought that the health center only served pregnant women and children. They have likewise heard that the services of the health center were not free; that medicines were not given free; and that they had no means of buying the prescriptions anyway. It should be remembered that the family lived quite a distance from the health center.

CASE STUDY NO. 2-A

During the 1950 survey, F.A., 66, a widow was the solitary occupant of a 3-room mixed material house, her children having married and living separately. She owns a small piece of land with a fruit orchard in the interior of Tandang Sora, the harvest from which was her main source of livelihood. The only education she ever had was learning the "Cartilla", so she knows how to read but not to write.

She lived in filth and squalor. She did not have any toilet nor bathing facilities; her "pusali" (cesspool) was a good breeding place for flies and mosquitoes; her domestic animals were sharing the same house with her and her kitchen was filthy. She claimed that her daily expense for food was ₱0.30 a day.

She did not avail herself of the health center services at all. After the survey, when she was made aware of the health center facilities, she tried to go to the health center once and her health chart showed that she was suffering from hyperavitaminoses and rheumatism at the time. The doctor prescribed thiamine injection and the widow

claimed that she developed allergic reaction to it. Only the "herbolario" according to her, was able to help her out of this predicament.

The 1960 survey found Mrs. A 10 years older and living in practically the same squalor. Her fruit orchard is no longer enough for her livelihood so she partly depends on her children.

She claimed that at her age, she is still strong and is perfectly satisfied with her health and has no need for adopting modern health practices.

CASE STUDY NO. 3-A

Mrs. A.C. claimed that she has been orphaned immediately after birth and therefore did not have any chance to study. She was made to do all the household chores as a young girl, and to escape this lot, she married early and gave birth to 6 children all of whom were delivered by "hilots" as she claimed that there was a dearth of doctors at the time of puerperium. The family was ignorant of the existence of health center facilities.

The 1950 survey revealed that Mrs. C, 46, was already a widow. Her older children were grown-up and were working as laborers with a total income of about P100 a month. Her youngest boy was then 6 years old. Comparatively speaking, the financial income of the family was better than most of their neighbors at the time and yet, they lived in filth. The house was dirty, the family did not have any toilet, the surroundings was unhygienic with stray animals, breeding places for

flies and mosquitoes, and very poor drainage around. The members of the family looked as if they needed a bath very badly.

1960 found Mrs. C, now 56, remarried. The second husband, 60 years old, is a farmer who has no fixed income. One son is a casual laborer whose income cannot be depended upon. Her other 2 children have gotten married and have separated. The family, through the decade has not shown any signs of improvement; in fact, they seem more miserable than ever. They were found living in a 2-room dilapidated bamboo and nipa shack and still under the same unhygienic ways of life. No signs of having adopted the modern health practices was evident.

Mrs. C claims that she has never really been seriously ill and the ailments she has suffered were easily cured by the "herbolario". Besides, she is a vegetarian and as such, she seldom gets sick. She does not know of the existence of the health center and the services it offers. Even if she did know, she said, she does not have use for its services as she has relatives who are doctors and on whom she could call should she ever need medical advice.

CASE STUDY NO. 4-A

Mrs. S, now 52 years, has gotten married for the second time to a 40-year old barber who earns more or less ₱2.00 a day. Husband and wife have finished Grades 1 and II respectively. Two of Mrs. S children by her first marriage have gotten married and the youngest is at present a student.

The family during the decade was found living in the same decrepit looking house under the same unhygienic conditions. They have not seen

the need of building a sanitary toilet as an open field is accessible to them and easily serves the purpose. Stray dogs and pigs serve as scavengers.

Mrs. S, whose children were delivered by a "hilot" has, up to now, found no use for a medical practitioner, nor the services of the health center. Her children are all grown-up and nobody in the family has ever been ill. Besides, they have a neighbor who is a medical student who can be consulted anytime. She is totally ignorant about the existence of the health center even as she is unaware of the changes going on in their community. When asked to identify the community leaders, she knew no one.

CASE STUDY NO. 5-A

In 1950, Mr. and Mrs. R.G., aged 50 and 49 respectively, were the parents of 3 grown-up children. The couple were both illiterates. Mr. G was a farmer cultivating one-half hectare of land. The eldest daughter, then 20, helped support the family by vending. The 2 younger children were studying.

The family lived in a very remote area of Tandang Sora and owned a 5-room bamboo and nipa house. Being so remote, the family did not feel the need for a sanitary toilet as the backyards and the stray animals around well served the purpose.

1960 found Mrs. G already a widow, Mr. G having died without any medical attendance. She is now living in a new mixed material house but still the family has not found any use for a sanitary toilet. The

children have not finished even the primary grades and are jobless. The family depends for its subsistence mainly on the yield of their fruit and vegetable gardens which they sell at the market or to their neighbors. It is easy to imagine, therefore, how poor the family is.

The family has not had any use for a private or public medical and auxilliary personnel. Mrs. G is an "herbolario" and takes pride in saying that neighbors call her for treatment.

CASE STUDY NO. 6-A

Mr. V.L., 22, and his wife Monica, 17, were newly married in 1950 and had a newborn son, Vicente Jr. Mr. L was a farmer without any fixed income. The only schooling that Mr. L had was up to Grade II whereas Mrs. L has not had the benefit of any form of education.

The young couple shared a 3-room shack with an old couple, Mr. and Mrs. Cruz. Mrs. Cruz was tuberculous, but did not have any form of medical care, and was sadly wanting of dental care. The two couples, young and old lived miserably.

A decade after finds Mr. and Mrs. L in the same shack without the old couple but living as miserably as before. Now, they have four additional mouths to feed, there being four more children after Vicente Jr. The house affords no privacy whatsoever and the environment is unclean with flies teeming around, garbage strewn about and an open pit for toilet.

The family has not utilized the services of the health center nor has it adopted any modern health practice. With her pregnancies, Mrs. L never had the benefit of a pre-natal supervision; neither have the

children had any health supervision. Three of the children were delivered by unlicensed midwives and 2 by a licensed midwife. The children are all ill-kept and dirty looking and appeared malnourished. Not one has had any form of immunization.

Mr. L does not have any fixed job. He merely depended on the palay share that he gets from farming which is about 20 cavanes a year - not even sufficient for his family's needs. He tried to augment his income by selling goat's meat to restaurants, now and then.

Mrs. L is fatalistic and believes that in the midst of their poverty, luck will one day strike on them by allowing them to win the sweepstakes. Despite her poverty, she always sees to it that she has a ticket for every lottery. She is superstitious and still patronizes the "herbolario". She claims that she is so preoccupied with the household chores that she cannot find time to go to the health center for consultation (and yet her house is very filthy); that her children are not in need of health supervision as they have not had any ailments (although appearances prove the contrary) and that the health center is inaccessible; hence she has contented herself with the "herbolario" and "hilots".

The family seemed to be completely unaware of improvements or changes in their community. Neither did they show any interest in what was going on around them.

CASE STUDY NO. 7-A

Mr. J.M., 61, an illiterate, is a farm tenant of Dr. Jacinto and lives in a remote part of the hacienda. As such, he has an unfixed

income. The highest palay share he gets from the farm he works on is 20 cavanes but there are times when he does not harvest anything. He is also the caretaker of 8 mango trees, the yields of which he shares with Dr. Jacinto after deducting 20% from the total sales in payment for spraying and pest control expenses.

Mr. J.R. lived with another woman in 1950. He separated from his first wife and is now living with another woman, 21 years his junior. He did not have any children by both wives.

Mr. R during the decade under study has not shown any improvement in his way of life. He was still found living miserably with his new wife in a shack almost unfit for human habitation. The house is built very low on the ground with a low ceiling so that one has to bend low in order not to hit it. The floors are made of bamboo sluts, so old and fragile that one gets a feeling that they will easily give way under one(s weight. The walls, made of sawali are studded with holes enabling one to see through the house even at a distance. The house is devoid of any furnishings except for a small table and bench.

The couple use the backyard for waste disposal and a surface well as a source of drinking water. The surroundings is unhygienic considering the animals that roam around and the poor drainage.

The couple have never availed themselves of the services of any professional health worker. They believe that mountain people like them should content themselves with "hilots" and quacks, who are accessible to them, are just one of them and who will be satisfied with a mere "thank you" in gratification for their services. The health center,

on the other hand, is distant from their place. Besides, if they consult the health center or a private physician, they can't afford to buy the prescriptions.

CASE STUDY NO. 6-A

Mrs. M.B., 62, illiterate and a widow, lives with a nephew (Pedro) 37, who serves as her companion and who helps cultivate the small farm that she tends. She depends on her share of 15 cavanes a year plus whatever additional income she gets from the yields of the fruit trees she owns.

Mrs. B resides in a remote section of Damong Maliit. She owns a 2-room mixed material house which in 1950 she shared with a married brother. Now, she is practically alone except for her nephew and her house is ill-kept and desolate.

Her surroundings is unsatisfactory from the hygienic point of view and her toilet reeks with offensive odor that pervades even the interior of her house. This toilet used to be a closed pit in 1950 and instead of its having been improved, it has become filled and dilapidated. She claims that she cannot afford to have it reconstructed. Besides, she does not own the lot where she lives. One gratifying thing is that she now uses the deep well instead of a surface well as the source of her drinking water.

Mrs. B is one of those who still believes in the superior skill and healing power of the "herbolario" and the "hilot". She has no use whatsoever for the health center or the private medical practitioner as she complains that the health center does not give free medicine and

that she can never afford to buy the prescriptions.

CASE STUDY NO. 9-A

In 1950, Mr. and Mrs. M.V., aged 37 and 34 respectively, were the parents of 3 youngsters aged 8, 6, and 3. Mrs. V was 4 months in the family way and it was noted that she needed pre-natal supervision, while her children needed health supervision badly. Not one of the family members have had any type of immunization. It was also noted that the family was living on a monotonous diet.

Mr. V was a jeep driver who made ₱3.00 a day. This, however, was not fixed. Mr. V has not had the opportunity to go beyond Grade I, Mrs. V never went to school.

The family lived in a shack devoid of toilet. The surroundings was unhygienic with animals straying and garbage strewn around.

1960 found the family under the same unfavorable circumstances. They live in the same house which has become too small for the now larger family. It is built low on the ground like a box with very poor lighting and ventilation. They use the ground with a small shed as their dining room so that their food is exposed to dust, flies and stray animals. The environment is as filthy as before. While the family has dug a pit for their toilet, this is unhygienically maintained and reeks with offensive odor.

Mr. V is still living and is earning practically the same amount he used to earn in 1950. The eldest son, now 18, also helps drive while Mrs. V runs a small store so she could help augment the family

income. However, there are 3 additional children with 2 of them going to school so the family is as hard up as ever.

With her 6 children, Mrs. V has never had the benefit of professional medical attention. Mr. V never encouraged her nor her children to consult a physician nor to go to the health center. Mr. V claims that he had a very traumatic experience with a physician. There was a time when he was foolish enough to consult one. Said physician gave him an injection which produced an untoward reaction. When he arrived home, he passed out and almost died. Thanks to an "herbolario" who diagnosed him as having been bewitched (namatanda) and who was skillful enough to free him from the spell, he got well again.

The family never tried to avail themselves of the services of the health center. To reenforce their belief, a neighbor complained that when she did bring her child there once, she waited for hours and came home unattended. Besides, the health center is so far out that it takes time and effort to get there.

CASE STUDY NO. 10-A

Mrs. D.M., 78 years old, a widow, an illiterate was found living with her daughter and son-in-law and 2 grandchildren. Mrs. M was occupying the same house where she lived 10 years ago - a four-room mixed material affair, fairly satisfactory from the hygienic point of view except for the fact that it is not provided with a sanitary toilet. Within the decade, Mrs. M had not felt the need for constructing one, the reason being that there is still a wide open field at the back of her house which can conveniently be used for the purpose.

Being quite old, Mrs. M depends for her livelihood on her son-in-law, a driver, earning about ₱4.00 a day and her daughter, a dressmaker, earning the same amount. The family in 1950 used a surface well as the source of drinking water; today they obtain water from a drilled well. The family does not seem to be indigent judging from the income and the home furnishings. However, Mrs. M as well as her daughter and son-in-law, who are both relatively young, 30 and 28 years old respectively, do not seem to feel any need or predilections for modern health practices. The 2 grandchildren, 2 and 1 year old were delivered by hilots, without any pre-natal supervision. Neither have they had any health supervision since birth.

Mrs. M undoubtedly exercise a strong influence on her daughter. She maintains that she cannot see any reason why her daughter should not use the "hilot" when all her children were delivered by them. She has more trust in their skill and experience in handling delivery cases. Besides, they are within easy reach during the period of puerperium and demands less delivery fee than any professionally trained health worker. Furthermore, they have never tried going to the health center because they are not accustomed to using it and are quite shy to make a try. Anyhow, nobody in the family has really been sick seriously except for minor sprains and mild ailments that are within the capacity of the "hilot" and "herbolario" to cure.

CASE STUDY NO. 11-A

Mr. and Mrs. A.B., 60 and 58 respectively, are staying in the same old house they used to live in 10 years ago with their 3 sons,

3 relatives and 2 helpers in 1960. All the children have gotten married and now the couple lives with one of the relatives and one helper.

The house while spacious, is dilapidated and about to give way. It is likewise untidy and insanitary. They have not made any efforts at renovations because they can't afford to do so. Anyway, they are already old and are contented the way they are. Through all the years, the couple have not felt the need for constructing a sanitary toilet. The surrounding is very insanitary with plenty of breeding places for flies and mosquitoes, inspite of the fact that they have a helper.

For their livelihood, the couple chiefly depends on their share from the farm which is not more than 10 cavanes a year plus the produce from the fruit trees.

The couple is a believer of the skill of "hilots" and "herbolarios". The time that Mrs. B decided to bring her niece to the health center proved to be a very discouraging experience. Her niece was given an injection against some skin infection and it caused an untoward reaction. Only the "herbolario" was able to make her well.

She also averred that going to the health center does not help. All that one gets is a prescription which cannot do any good unless one has the money to buy it. Similarly, a private practitioner who, in addition to the cost of prescription demands a professional fee which is beyond her means.

CASE STUDY NO. 12-A

Mr. E.M., 57, an illiterate and a farmer has transferred residence within the decade after he deserted his first wife and took a common-law

wife. All of Mr. M's children have gotten married except the youngest, a 5 year old, who is staying with him. In addition, Mr. M's aging mother, now 88 years, lives with the family.

The house is located in a very remote area. It is made of light materials and is actually a one-all purpose room. Except for a small bench, the house is devoid of any other furnishings. Obviously, the family cooks on the floor, eats on the floor, sleeps on the floor and even shares the house with their dogs. The tall grass at their back-yard conveniently provides privacy for defecation.

Mr. M chiefly depends on his farm share which is about 15 cavanes of palay a year. To augment the family income, Mrs. M sells vegetables to her neighbors or to the market.

The family has no use for either the public or the private professionally trained medical personnel. Further questioning revealed that Mrs. M is herself a "hilot" and an "herbolario" and has practiced the art since 1933. Only recently has she been inactive because of failing visual accuity. From her view point, a hilot or an herbolario is more skillful than a physician. By merely counting the pulse beats, he or she is able to make a diagnosis and institute treatment. However, the physician according to her cannot cure bewitched cases. He only tends to aggravate the situation.

CASE STUDY NO. 13-A

Mr. and Mrs. P.M., 24 and 20 years old respectively, were a young and newly married couple in 1950. They had an only child, a 2 year old boy. Husband and wife both had very meager schooling having

finished only Grade III. At the time, they lived with 2 other families in a small house.

The family now lives in the same house which they had improved when the 2 other families moved out. However, it still is a decrepit looking affair, almost bare except for a dining table and 2 small benches. The family uses the ground for their dining room and kitchen and an extended roof serves the purpose. They have not taken the trouble to construct a sanitary toilet; neither do they take good care of their surroundings as evidenced by the presence of carabao dung, poor drainage and abundance of flies and mosquitoes.

Mr. and Mrs. M have 3 children now all delivered by "hilots" without benefit of pre-natal or child health supervision and the youngest, 3 years of age, has not been given any form of immunization and appeared malnourished.

The family still believes in the healing power of the "herbolarios" and "hilots" and claim that the old folks have exerted a great deal of influence in their way of thinking.

CASE STUDY NO. 14-A

Mr. S.R., 45, a farmer whose main support for his wife and 3 sons is his share of 25 cavanes of palay as a farm tenant. The eldest son, now 22, is a casual laborer who earns about ₱10.00 a week.

The family lives in a 2-room house in a remote area of the district. Within the decade, not much change is evident in the way of life of the R's. The family is still without the benefit of a sanitary toilet and still uses the surface well as a source of drinking water.

Despite evidences of attempts at keeping the house furnished and clean, it still looks untidy and filthy. The premises is kept swept and clean but the drainage is poor and serves as good breeding places for flies and mosquitoes. A little distance from the house is the carabao and cow barn which smelled of dung.

The family within the decade had not utilized the health center. The wife claimed to have been operated once by a professional surgeon. She recounted the intense pain and agony that she underwent as a result of this operation only to be relieved by the skills of an "herbolario". So she swore she would never go to a doctor. When her children are sick, she institutes home remedies - "agua colonia" for abdominal pains and "herba-buena" and oil or "herba-Santa Maria" as a rub or ointment for pains. For other ailments the "hilot" is called to massage the aching parts. As many others within their class, the family cannot afford to pay the services or buy the prescriptions of a private physician.

CASE STUDY NO. 15-A

I.C., 49, and his wife Romana, 45, are farm tenants of one of the haciendas in Novaliches. Both have hardly studied having finished only Grade II and I respectively. The couple has been blessed with 4 children - the eldest 20 and the youngest 7.

The family used to live in the town proper but for lack of any available job, they moved to the hacienda as farm hands. For their share, they harvest about 32 cavanes of palay a year plus whatever share they can get from the fruit trees under their charge.

The kind of house the family kept while in the town and in the hacienda were practically the same. They have squeezed themselves into a small 2-room light material house (grass thatched, bamboo and nipa at the sides) actually just a roof over their heads. They also use the backyard for waste disposal and obtain their drinking water from a surface well.

The family has no understanding of scientific health practices and like other people of their class, most of them believe in the herbolarios and hilots.

CASE STUDY NO. 16-A

Mr. and Mrs. G.F., farm tenants and vegetable vendors are already an elderly couple during the 1956 survey. Mr. F was 70; Mrs. F 54, with a 10 year old son. All were illiterates. They lived in a very remote part of the district far from the highway. The following notations were made in the survey form:

1. Family needs medical, nursing and dental services.
2. Health attitude poor. Uses services of quacks.
3. Needs sanitary facilities - toilet, drinking water and garbage. General condition of the house and premises insanitary.
4. No recreational facilities.

In 1960, it was found that Mr. F has recently died of old age without any medical attention. The son, now 20, has married and already had a 1½ year old daughter. The years have not brought any improvements in the life of the family. The son took over the farming job of his father while Mrs. F has grown older. The daughter-in-law

while only 19, has not imbibed any of the modern health practices. The newly married couple are still under the strong influence of the old people. The young Mrs. F was delivered by a "hilot" and has never used the services of the health center or professional health workers, public or private. They claim that they are shy about going to the health center or calling a private physician as they have never been used to them. On the other hand, the quack is their relative and they feel very much at home with him.

The family was still living in the same shack, under the same unhygienic conditions and miserably as ever.

CASE STUDY NO. 17-A

Mr. and Mrs. C.C., both 45, are the parents of 3 grown-up children, 22, 18 and 12, the eldest of which has gotten married. Both had very meager schooling having finished only Grade II. Mr. C is a laborer of the NAWASA. It is surprising that people under such relatively better circumstances having been an employee since 1950 should live in such backward and miserable way. The years did not exert any change on their lives. The family lives in the same shack (made of cogon, nipa and bamboo), very ill-kept, filthy and practically devoid of any furnishings. The premises is an example of what an unhygienic surrounding is - flies, mosquitoes, animals abound, drainage is poor and the backyard serves as the family's means of waste disposal.

Mr. and Mrs. C have had no use for the health center or any private medical practitioner. They claim they have never been sick and that they have been able to cope with the minor ailments they have had

through the simple home remedies. The center is too distant from them to reach.

CASE STUDY NO. 18-A

Mr. and Mrs. A.M., an elderly couple, 65 and 43 years old respectively, both illiterates, lived in deprivation. All their children have gotten married and have separated from them. Only a small nephew, 4 years of age, live with the old couple.

Mr. M is jobless and has no source of income. He used to be a farmer but because of old age, he can no longer be used as a farm hand. The only source of income of the couple is Mrs. M's earnings as a laundry woman from which she earns P1.00 a day. The couple related that many times they have nothing to eat - in times when Mrs. M cannot launder for anyone. Mr. M looks sick - possibly a Tuberculosis case and all of them looked malnourished.

The couple lives in a shack - an all-purpose room, dilapidated and filthy with the premises very insanitary.

They have never utilized a private physician nor the health center as their poverty has made them shy away from private physician or health center personnel, knowing that they cannot buy the medicines prescribed. They content themselves with home remedies and when this proves ineffective, they call the quack doctor.

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