WHO/WESTERN PACIFIC REGIONAL OFFICE-SUPPORTED RESEARCH PROJECTS

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Manila, Philippines
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FOREWORD

The establishment of the Western Pacific Advisory Committee on Medical Research (WPACMR) in 1976 was an outcome of the reorientation of WHO research management in this region.

From the outset, the objective of the regional research promotion programme has been to develop research components as an integral part of all WHO technical cooperation programmes, thus relating goal-oriented and need-based research to the solution of priority health problems of regional and national importance. Such components now exist in most programme areas and emphasis has been given to studies on health systems, and health behaviour and major disease problems such as diarrhoeal diseases, acute respiratory infections, hepatitis, haemorrhagic fevers, endemic parasitic diseases and cardiovascular diseases. In addition, separate research activities have been developed and supported within the Special Programme of Research, Development and Research Training in Human Reproduction (HRP) and the Special Programme for Research and Training in Tropical Diseases (TDR).

The aspirations for the attainment of health by all peoples of the world were embodied in the WHO Constitution. Thirty years later in 1978, a new Declaration on the achievement of health for all by the year 2000 was adopted at the International Conference on Primary Health Care, held at Alma-Ata in 1978. The Declaration states that primary health care is the key to attaining this target as part of development in the spirit of social justice.

The Thirty-sixth World Health noted with concern that the achievements of biomedical sciences have not been accompanied by a decrease in the gap between developed and developing countries and that most of the latter lack the resources, research manpower and infrastructure necessary to conduct the type of research that would immensely improve the health and well-being of their populations. It therefore urged all Member States to incorporate health research in their 'health for all' strategies and to intensify cooperation among countries in research training and institution strengthening. The regional strategies for achieving health for all and the plans of action for implementing them also urge the use of research as an essential tool for the solution of some of our pressing problems.

We hope that the publication of "WPRO-supported Research Projects" will serve to inform those who are unaware of health research activities directly supported by the WHO Regional Office for the Western Pacific of our efforts to support research and our desire to motivate more scientists in the Region to conduct problem-solving health research.

Hiroshi Nakajima, M.D., Ph.D.
Regional Director
INTRODUCTION

This publication is designed to present research activities supported either directly by the WHO Regional Office for the Western Pacific or jointly with WHO Headquarters. However, it does not include research projects supported by the Special Programme of Research, Development and Research Training in Human Reproduction (HRP) and the Special Programme for Research and Training in Tropical Diseases (TDR).

There are sixty-six projects included in this publication, twenty-five of which are still in progress. The distribution of the projects by discipline is as follows:

- Health Services Research: 8
- Workers' health: 3
- Nutrition: 1
- Mental health and behavioural science: 5
- Parasitic diseases: 20
- Diarrhoeal diseases: 10
- Other communicable diseases: 10
- Vector biology and control: 8
- Environmental health: 1

The above list reflects the priority problems being addressed in the Region. There is a predominance of parasitic diseases, diarrhoeal diseases and other communicable diseases.

We would like to thank Dr Arturo C. Reyes, WHO Consultant, who collaborated with us in reviewing all the projects, as well as those who worked so hard to produce this publication.

Chief, Research Promotion and Development
March 1984
RURAL-URBAN DOCTORS IN SOUTHERN TAGALOG AREAS: A SOCIAL PSYCHOSOCIAL COMPARISON

OBJECTIVES

1. To know the attitudes of selected physicians toward medical training.

2. To know the physician's perception of health services, resources and health problems in the Philippines.

3. To know the processes of professionalization and communication among physicians.

FINDINGS

1. Medical education was considered to be disease- and specialization-oriented technique rather than people-oriented, and the medical course should be reduced to seven years. There is need to expand the preventive medicine, community medicine, public health, occupational health, medical economics, medical sociology and related behavioural sciences.

2. The leading health problems include malnutrition, communicable diseases, environmental sanitation, lack of health consciousness, over population and inadequate health care delivery system due to lack of competent and motivated personnel, low salaries and lack of incentives.

3. Strengthening of primary health care, developing health consciousness of the population, more participation of the people and an interdisciplinary approach to health care were some of the solutions considered.

CONCLUSION

The information collected was passed on to the U.P. College of Medicine, other medical schools and interested organization for their consideration in planning new curricula or in revising existing ones.
**HSR/1/77**

**STATUS**

Completed.

**OTHER DATA**

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College of Arts and Sciences  
University of the Philippines  
Manila        |
| Country     | Philippines         |
ESTABLISHMENT OF A MORTALITY REPORTING SYSTEM AT THE VILLAGE LEVEL

OBJECTIVE

To develop a mortality reporting system at the barangay level in pilot barangays of Silang and Gen. Trias, Cavite.

FINDINGS

1. House to house survey indicated that there were 96 deaths that occurred during a two-year period of which 17 (18%) were not registered.

2. A review of the reports at the Civil Registrar's office indicated that 26 deaths (27%) would have been missed due to emigration.

3. A total of 286 births were identified from the local Civil Registrar and the household survey of which 114 (40%) were unregistered. If a survey alone was done, 37 (13%) births would have been missed. Seventy per cent of births were attended by traditional birth attendants (hilots), 18% by formally trained midwives and 12% by physicians. Of 114 births verified as unregistered, 74 (65%) were mistakenly reported by interviewers as having been registered and only 40 (35%) were accurately acknowledged as not having been registered.

4. The use of the verbal autopsy questionnaire (VAQ). Without the use of the VAQ, the diagnosis of the certifying physician differ from the consulting physician in 13 (50%) of cases. With the VAQ, they differed only in one case.

CONCLUSION

In many rural areas of the developing world, mortality reporting leaves much room for improvement. Morbidity reporting is even more formidable.

In connexion with the use of mortality reporting system, attention is called to two problems, namely, (1) incomplete registration of deaths and (2) insufficient or inaccurate information received by the physician who officially certifies death.

If the purpose of the system is solely to track the number and causes of deaths five years and below, it is recommended that:
1. A more simplified VAQ be developed for administration by trained health worker or the physician himself.

2. A mechanism to inform the health worker of death be developed between the village leader and the health system.

3. Using the VAQ, certifying physician be allowed to review and revise his diagnosis for use in assessing the impact of health interventions.

4. Close consultation with the people be followed to ensure cultural social acceptability of the use of the VAQ.

Priority problem is inaccurate and insufficient information.

If the thrust is to promote increased registration of births and deaths, steps must be made to reduce geographical as well as social distances between villagers and the local civil registrar.

1. Encourage local civil registrars to evolve simple format in local dialect or use as village level pre-registration.

2. Formalize position of volunteer recorder.

3. Have promotional campaign using media, etc.

STATUS

Completed.

OTHER DATA

Grantee : Dr Antonio C. de Jesus
Institution: International Institute of Rural Reconstruction
Country    : Philippines
            University of the Philippines in
            Los Baños, Laguna
UTILIZATION OF MOTHERS, TEACHERS AND SCHOOLCHILDREN
FOR SOME ASPECTS OF PRIMARY HEALTH CARE IN
PHILIPPINE BARANGAYS (VILLAGES)

OBJECTIVES

General:
To help improve the health status of two rural communities through the mobilization, training and utilization of local human potentials in the communities for the delivery of essential health service components of primary health care.

Specific:
1. To train mothers as primary health care workers.
2. To train elementary school teachers as health guardians of their respective students.
3. To help develop the minimum essential health services in the two communities.
4. To develop the concept of partnership between community and health care delivery system by participating in community problem-solving, planning and decision-making activities.
5. To provide residents and undergraduate medical interns experience in primary health care delivery at the grassroots.
6. To assist the community in the development of the health fund.
7. To assist the community in evolving income generating projects to augment family resources and develop self-reliance and self-sufficiency.
8. To demonstrate the level of effectiveness of health services provided by a midwife, mother health workers, teacher health guardians and the student health minders.

FINDINGS

A simplified community- and school-based health care system in nine puroks of two barangays was initiated utilizing indigenous human resources to give essential, feasible and practical services to villages. The programme involved 38 mothers (MHWs), who were selected and trained for some aspects of primary health care at purok level. They served as
campaigners for immunizations, nutrition and family planning activities. They were readily accepted by the community to give simple and immediate management of common ailments. They could also be relied upon to participate in the continuous and permanent health care delivery in remote rural localities and make use of available indigenous material.

A significant addition to the team are teachers who serve as health guardians (THGs) and selected students as health minders (SHMs) who have shown that together with the MHWs they can provide simple health services in the school and also at home. A referral network was established and complimented by a "botica sa barangay" (village pharmacy).

CONCLUSION

A primary health care approach utilizing mothers, teachers, and school-children who are given practical training on some aspects of primary health care can be fitted into and improve the existing government health care delivery system.

The report has been passed on to the Ministry of Health for their consideration.

STATUS

Completed.

OTHER DATA

Grantee : Dr Fe del Mundo
Institution : Institute of Community and Family Health
Country : Philippines

Quezon City, Metro Manila
OBJECTIVES

1. To analyze what determines the effectiveness of supervision in providing primary health care in a rural setting in Korea.

2. To investigate the relationship between the type and content of supervision and the performance in the provision of primary health care.

FINDINGS

In analyzing the effects of different types of supervision on the "performance" in providing primary health care, the performance will be measured by (1) the utilization of health care, (2) community participation, and (3) programme efficiency. Accordingly, the relationship between the type of supervision and "performance" is examined by testing the following three sub-hypotheses. They are:

a. Compared with Type A supervisory system (mainly monitoring system of supervision), Type B supervisory system (monitoring, evaluation and control system of supervision) leads to a better utilization of health care.

b. Compared with Type A supervision, Type B supervision leads to a more active community participation.

c. Compared with Type A supervision, Type B supervision leads to a more efficient programme performance.

Hypothesis "a" is supported with a varying degree of statistical confidence level where the variation depends on the variables chosen to represent health care utilization and also on the type of regressions used. Hypothesis "b" is refuted without statistically satisfactory test of the level of confidence. Hypothesis "c" has not been tested because the data are not available.

Due to the shortness of the period during which different supervisory systems are expected to exert influence on the performance variables, the utilization of health services is used instead of health status as a performance variable. Multiple regression analysis show that the hypothesis "a" on health care utilization is unequivocally supported.
CONCLUSION

Among many possible models, this study has chosen two types of supervision. Model A emphasizes a loose and hand-off approach. It mainly relies on monitoring as the best method of supervision. Model B, on the other hand, believes in a most tight supervision. It not only monitors each health worker's activities but also evaluates his performance and exercises a greater control. If the performance of health workers is measured by the utilization of health services, the utilization rate of most categories of health services is higher for the residents of the area where Model B supervision has been practised than for those in the area where Model A supervision has been practised for one year. It can be argued rightly that the performance of health workers should ultimately be judged by the changes in the health status of the residents whom they serve. Since the project period is too short to notice any changes in health status, the utilization rate of health services is used instead as a performance index.

STATUS

Completed.

OTHER DATA

Grantee : Professor Kong-Kyun Ro
Institution : Seoul National University
             Seoul
Country : Republic of Korea
RELATIVE EFFECTS OF THE VOLUME AND MIX OF HEALTH SERVICES AND OTHER FACTORS ON THE HEALTH STATUS IN KOREA

OBJECTIVES

1. To estimate the relative effects of socioeconomic and demographic variables on the volume and mix of health services available.

2. To estimate the relative effects of the volume and mix of health services of which the availability has been estimated by first stage regressions and other variables on the mortality rate of the population.

3. To estimate the model of production of health where the inputs are health personnel, health facilities and socioeconomic and demographic variables of the population.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Professor Jong Kun Kim

Institution : School of Public Health
             Seoul National University
             Seoul

Country : Republic of Korea
BASIC HEALTH SURVEY IN URBAN LOW-INCOME AREA

OBJECTIVES

Main objective:

To establish a basis for development of health services in urban low-income areas.

Sub-objectives:

1. To identify the perceived health problems in an urban poor and middle class communities.

2. To compare the difference in socioeconomic characteristics of the two communities selected.

3. To analyze the relationship between the difference in socioeconomic characteristics of the two communities and those in the health problems identified.

4. To test the reproducibility in the underprivileged settings on recently developed indices for the assessment of equity of access to medical care.

5. To examine the differences in the current pattern of household expenses to the perceived health problems between the communities.

6. To recommend the ways in which health services may deal with health problems.

FINDINGS

A report which assessed the usefulness of symptom-response ratios, as health indicators to measure medical utilization levels among inhabitants indicated the following:

(1) In general, except for common colds, there is under-utilization of health services in both sexes.

(2) There is proper utilization levels in children under five years; however, under-utilization increases with age, particularly fifteen years and above.

(c) Under-utilization is more general among the low income group than among the middle class.
CONCLUSION

Generally the symptom-response ratio seems to be an accurate indicator reflecting equity of access to health care for the community. The findings of the study have been brought to the attention of the Health Ministry and are being utilized in the planning of primary health care.

STATUS

Completed.

OTHER DATA

Grantee : Dr Sung Kyu Ahn
Institution : Korea Institute for Population and Health
Country : Republic of Korea
COMMUNITY/PARTNERSHIP MODEL IN PRIMARY HEALTH CARE IN KOREA

OBJECTIVES

1. To compare and evaluate the relative effectiveness of community model vs. partnership model in strengthening primary health care in rural Korea.

2. To identify factors which contribute to strengthening primary health care in community model vs. partnership model.

3. To establish the relevant indicators which accurately reflect the performance of community model vs. partnership model in strengthening primary health care.

4. To analyze how rural communities can effectively initiate and/or participate in collecting, processing and analyzing health and other information through partnership model and/or community model.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Professor Jong Huh
Institution : School of Public Health
: Seoul National University
: Seoul
Country : Republic of Korea
TO TRAIN THE IBAN MANANG AS A COMMUNITY HEALTH WORKER FOR PRIMARY HEALTH CARE

OBJECTIVE

To train the Manang (traditional medicine man) in primary health care.

FINDINGS

Each Manang on the average was treating about 71 patients per month. The most common complaints encountered were headaches (30.4%) which together with abdominal pain, constipation, body aches, diarrhoea, vomiting, fever, worm infestations, cough and sore throat accounted for 89% of all illnesses seen by them.

Subsequent to the introduction of these village aids, the number of seriously ill patients requiring admission to the rest beds of the clinic dropped by 43.8% and the number of emergency referrals to 46.1% showing that patients came for treatment at an earlier stage.

It was also observed that the traditional Manangs drastically reduced the use of traditional Iban modes of therapy in preference to modern medicine.

Breast-feeding and vegetable gardens were vigorously advocated. A total of 1093 blood films were collected in 23 months or 3.2 slides/month/aid. The aids were socially acceptable particularly when mild illnesses disturb the population. The study left clear lines of communication between the health staff and the long house community and indicated that the population involved should be helped to help themselves through community participation and self-reliance.

CONCLUSION

A plan has been approved in principle to further train 2000 village aids in primary health care for the State of Sarawak.
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Completed.

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BLOOD CHOLINESTERASE LEVEL IN ORGANOPHOSPHOROUS PESTICIDE POISONING

OBJECTIVES

To classify:

1. The difference of blood cholinesterase activity between unexposed and asymptomatic farm workers.

2. The degree of blood cholinesterase inhibition according to severity of clinical manifestations in poisoning cases.

3. The time required to return to normal of blood cholinesterase activity in poisoning cases.

FINDINGS

Slight difference of blood cholinesterase activities between unexposed and asymptomatic farm workers were observed.

Severity of manifestations of poisoning parallels degree of inhibition of blood cholinesterase activity.

Return to normal levels of cholinesterase activity ranges from 1-2 weeks in mild cases, 4 weeks for moderate cases and more than 4 weeks for severe cases.

CONCLUSION

There was correlation between the degree of blood cholinesterase inhibition and severity of manifestation of poisoning.

Further studies are needed to ascertain the effects of a number of factors such as method and rate of applications of pesticide, duration of exposure, the attitude of the workers, etc.
STATUS

Completed.

OTHER DATA

Grantee : Professor Kwang Mook Lee
Institution : Institute of Industrial Medicine
             Catholic Medical College
             Seoul
             Republic of Korea
STUDY ON CAUSATIVE FACTORS OF OCCUPATIONAL INJURIES
IN THE KOREAN ANTHRACITE MINES

OBJECTIVES

1. To investigate the causes of occupational injuries in the Korean anthracite mines by multicausational approach and to prepare a practical ground for the establishment of preventive measures.

2. To identify injury-analysis factors to investigate accident causes to disclose certain interrelationships between the above-mentioned injury-analysis factors and accident causes.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

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OCCUPATIONAL HEALTH SURVEY OF SELECTED INDUSTRIES

OBJECTIVES

To conduct a walk through survey of selected industries to determine manpower resources; raw materials; products and by-products; significant health hazards; clinical or biological effects on workers in the plant; assess the control measures practised; suggest recommendations to control the health hazard and the implementation of the recommendations.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress

OTHER DATA

Grantee : Dr F.A. Cassanova/Dr F. Jose
Institution : Division of Occupational Health
Country : Philippines

Ministry of Health
Manila
OBJECTIVES

1. To determine the attitudes and beliefs of adults, particularly women, about growth and weaning and their relationships to actual child feeding practices and growth.

2. To determine maternal attitudes and beliefs about lactation and their relationship, together with maternal nutrition status and food intake to milk production.

FINDINGS

Reports indicate that an ethnographic study in the Amele area of Madang province concentrating on the weaning method has been carried out. The study showed that the combination of ethnographic, nutritional and social science survey methods used in the study enable them to document not only beliefs and behaviours relevant to infant feeding but also their relationship to growth.

An important aspect has been conceptualizing growth stages emically (according to the informant) instead of etically (according to the outside observer). This is a simple but methodological advance over previous studies and has considerable potential since it causes possibility of communicating with the parents about food and growth in their own terms rather than ours, which may have little meaning for them.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Peter Heywood
Institution : Institute of Medical Research
Country : Papua New Guinea
MENTAL HEALTH AND BEHAVIOURAL SCIENCES

WHO COLLABORATIVE STUDIES ON STRATEGIES FOR EXTENDING MENTAL HEALTH CARE

OBJECTIVES

1. To study the feasibility of introducing mental health care directed towards defined priority conditions into health services of developing countries.

2. To develop methods of priority selection for intervention in the field of mental health care.

3. To develop and evaluate methods of task-oriented training in mental health for health workers and those in other systems of care.

4. To evaluate the effectiveness of alternatives, low cost method of mental health care introduced into basic health services.

5. To develop and evaluate ways of stimulating community understanding and response to problems related to mental disorders. This project is primarily WHO/HQ activity with the WPRO giving supplementary support for only one year.

FINDINGS

Partial results indicated that:

1. Among consultees in the health centres in the study area, the prevalence of definite mental cases among adults is 16.3% (459/6817) and 15.9% (38/238) among children 5-15 years of age.

2. Key informant interviews (KII) revealed a large number of suspected cases, 354 cases.

3. The intervention phase consisted of developing training programmes including training manuals for health personnel. Training methods consist of formal lectures, case conferences and supervision on-the-job training.

The approach has been met with enthusiasm and support from the Manila Health Department and Regional District III has been designated to initiate the plan and integrate mental health in the general health services.
CONCLUSION

The full conclusions and recommendations will be reported later since this study is primarily WHO/HQ's activity. Partial results indicate that interventions can be feasible through simple, task-oriented and supervised training of health workers to improve their knowledge and develop their competence and skill in mental health care.

STATUS

Completed.

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A SURVEY ON THE ALCOHOL DEPENDENCE SYNDROME AND DISABILITIES RELATED TO ALCOHOL CONSUMPTION IN THE PHILIPPINES PHASE I

OBJECTIVE

To provide information and indicators of the presence of alcoholism in the country.

FINDINGS

There is a growing level of alcohol consumption in the Philippines as indicated by the increase sales of locally produced alcoholic beverages, in particular, beer and the importation of bigger quantities of distilled spirits and wines. Per capita consumption of these beverages has also grown.

Although overall mortality rate of liver cirrhosis fluctuated during the 1970-1980 period, there is a seemingly higher rate in individuals 20 years and older.

CONCLUSION

Data to precisely define the nature and extent of the problem, in particular prevalence and causative factors, are not available. Further studies need be done.

STATUS

Completed.

OTHER DATA

Grantee : Dr V. Santiago
Institution : Department of Psychiatry
            College of Medicine
            University of the Philippines
            Manila
Country : Philippines
ALCOHOL USE AND ABUSE IN THREE RURAL VILLAGE AREAS
IN PAPUA NEW GUINEA

OBJECTIVE

To gather systematic information regarding alcoholism and alcohol abuse in the rural areas of Papua New Guinea.

Specifically:

1. To conduct anthropological field research in village areas of three different provinces.

2. To determine whether or not alcoholism and problem drinking exist in rural areas.

3. To collect detailed data for each of three study areas so as to discover whether any similarities or differences exist in the different regions.

4. Based on the findings, to propose practical solution to policymakers at national and provincial levels for dealing with problem of alcohol abuse.

5. To incorporate data gathered in the village studies to larger project.

FINDINGS

This study is part of a larger Institute of Applied Social and Economic Research (IASER) alcohol project which will provide basis for recommendations relating to alcohol health policy for the entire PNG. Although the study was completed in August 1981, analysis of additional data gathered will take time and will subsequently be published as a series of articles in professional journals.

Partial analysis indicate: there is no substantial variation from province to province in current provincial government policy regarding alcoholic beverages. Most provinces have supported the spread of licensed premises into rural areas and it is recommended that this be stopped. Efforts to institute provincial prohibition or liquor bans are doomed to failure so long as adjacent provinces allow free sale of alcoholic beverages. Moreover, such efforts are actively resented and resisted by adult males.
In parts of the country with comparatively long history of outside contact, village drinking clubs appear to be more successful than elsewhere. Sale and consumption of alcoholic beverage are widely viewed as business and as a sign of economic development and participation in modern wage economy.

Women, singly and in organized groups, generally are opposed to the sale of alcoholic beverage and do not drink much, if at all, themselves.

CONCLUSION

Some insights into alcohol use in rural villages have been gathered; however, analysis of the data is as yet not complete.

STATUS

Completed.

OTHER DATA

Grantee : Dr Keith Marshall
Institution : Institute of Applied Social and Economic Research
Country : Papua New Guinea
EPIDEMIOLOGICAL STUDY OF MENTAL HEALTH PROBLEMS IN KOREA

OBJECTIVE

To study the nature of mental disorders in Korea.

FINDINGS

Valuable data has been obtained and tabulated but it needs to be analyzed in greater detail.

CONCLUSION

Analysis of data is not yet completed.

STATUS

Completed.

OTHER DATA

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EFFECTS ON THE HEALTH OF INHABITANTS OF A RURAL COMMUNITY EXPECTED TO BE BROUGHT BY TRANSFORMATION OF THEIR LIVING HABITS

OBJECTIVES

1. To collect basic data on factors influencing the health of a community such as life habits relating to food, exercise, life styles.

2. To study the approaches and strategy which may lead people to change health habits that may contribute to improving and preserving their health.

FINDINGS

1. The prevalence of hypertension and hypercholesterolemia is definitely higher among inhabitants in Nakai-machi than those in urban areas. A larger proportion of both males and females also suffer from anaemia than in the urban areas.

2. Inhabitants of the rural area take greater amount of salt daily inviting a high prevalence of hypertension and stroke. The amount of consumption is highest in the age groups 30-40 and decreases as the age increases.

   The habitual intake of highly salted food decreases as the level of education becomes higher. Intake of food rich in sugar decreases with aging. Intake of fat and oil decreases with aging.

   Multifactoral interventions resulted in decreased incidence of medical problems and a significant improvement in physical fitness.

   Motivation to exercise has negative correlation to aging and positive correlation with the level of education. Hypertension is more frequently found among those with higher educational level and traditional way of thinking. The frequency of peptic and duodenal ulcer is higher among those with higher cultural level and theoretical way of thinking.

CONCLUSION

Lifestyle changes are ultimately related to behavioural changes. Diets to reduce the amount of daily salt intake and to enable proper intake of cholesterol as well as diet to prevent anaemia should be the mainstream of guidance to be given to the inhabitants of Nakai-machi.
The need of focusing more attention to the avoidance of risk factors particularly amidst the tendency towards westernization of life patterns should be kept in mind in the health education approach.

STATUS

Completed.

OTHER DATA

Grantee : Dr S. Hinohara
Institution : Life Planning Center Foundation
             Sasakawa Kinan Kaikan, Tokyo
Country : Japan
OBJECTIVES

1. To study the health knowledge, attitudes and practices of the people of Leyte related to schistosomiasis control.
   1.1 To obtain information on the people's knowledge on the causes and transmission of schistosomiasis.
   1.2 To identify the existing attitudes towards the current schistosomiasis control programme and the health personnel responsible for such programme.
   1.3 To determine the practices related to the transmission, treatment and control of the disease.
   1.4 To compare the knowledge, attitudes and practices of negative and positive cases.

2. To assess the educational needs of the various target groups.

3. To identify the important messages that should be emphasized in the educational programme.

4. To find the degree of community participation that the people are willing to extend to the health project.

5. To formulate guidelines for planning, implementing and evaluating educational programmes for schistosomiasis control.

FINDINGS

The study revealed that by and large, the people of Leyte are knowledgeable about their country health problems and that schistosomiasis is one of them. They generally know the symptoms and the needed action to take when ill with schistosomiasis. However, such knowledge is not translated into action due to financial and economic constraints.

There is a hazy knowledge about transmission and control, only a small proportion of respondents associated it with improper waste disposal and 25.2% does not know how it is acquired.

Around 38.9% of the sample had misconceptions regarding control measures. They consider bathing regularly, not eating snails, not getting in contact with the infected, not eating half-cooked foods, drinking tuba or anything hot as effective measures.
While 82.2% of the sample have adequate toilets, only 41.5% always use them due to poor maintenance. Those without adequate toilets use open fields, bodies of water, irrigation ditches, etc.

The role of domestic animals as reservoirs of infection is not realized; hence, a large proportion of pigs, dogs and carabaos are left astray.

About 25% of the respondents are hard to reach groups who are unaware of the problem.

CONCLUSION

Majority of the sample surveyed are aware of the existence of schistosomiasis, of the dramatic symptoms and parts of the body that is affected, and its importance as a health problem. A significant 25% belong to the hardcore who remain unaware of the problem and need outreach methods for their education.

Economic and infrastructure constraints go hand in hand and present difficulties in the control programme. There should be more effective health education measures to increase awareness of the population to the disease and provide mutual trust and confidence between the providers and consumers of health services. Consumers should be regarded as partners rather than objects.

Health education should give more emphasis in transmission, disposal of wastes, control of domestic animals, avoidance of contact with infected waters and the health services available. The target population should be females and the younger age groups with low educational attainment and economic class. Health education efforts should go hand in hand with the community development programmes of other ministries.

STATUS

Completed.

OTHER DATA

Grantee : Dr T.V. Tiglao
Institution : Institute of Public Health
               University of the Philippines
               Manila
Country : Philippines - 30 -
OBJECTIVES

1. To determine the actual prevalence rate of density of infection of Schistosomiasis in the area of study.

2. To study water contact behaviour and to correlate such with intensity of infection.

3. To determine whether there is any difference in the pattern of water contact behaviour between schistosomiasis positive and schistosomiasis negative individuals.

4. To identify some of the psychosocial factors that influence water behaviour.

5. To suggest guidelines for designing environmental control measures and the educational component of control programmes taking into consideration the psychosocial factors.

FINDINGS

The sample population totalled 1357 persons of whom 70% submitted stool and blood samples. The prevalence rate using the modified Kato-Katz technique was 55.4% for Barangay Tibac and 54.6% for Barangay Katipunan. The prevalence increase with age reaching a peak in the age group 40-44 years.

The water contact activities of 503 persons were observed with a total of 5418 observations in all. During the period May-September, 1979, domestic activities has the highest frequency and duration rate followed by economic activities, recreational activities and socioeconomic activities.

From January-May 1980, socioeconomic activities had the highest frequency while the economic activities had the highest frequency rate - probably a reflection of harvesting and planting rice time. Water contact in relation to domestic activities predominated in the females while economic and socioeconomic activities were more concerned in males.

Hardly any contact was observed in the ages four years and below. Water contact activities start to increase in frequency and duration from 10-14 years and reaches a peak in the ages 20-39 years. Contact related to recreation decline in both sexes after early adolescence.
Psychosocial factors that influence water contact behaviour indicate there is a desire among people to control schistosomiasis but there are psychosocial reasons that attract them to the waterways as well as environmental factors beyond their control. Convenience and opportunity to socialize with relatives and friends are the most potent reasons for using waterways plus the fact that in many instances, there are no other alternatives in the absence of a safer and adequate source of water supply.

CONCLUSION

Important insights regarding water contact activities were described which would serve as guidelines in the planning and implementation of a health education programme for schistosomiasis control. Socio-psychological factors play a more important influence on contact behaviour than knowledge.

STATUS

Completed.

OTHER DATA

Grantee : Dr T.V. Tiglao
Institution : Institute of Public Health
             University of the Philippines
             Manila
Country : Philippines
ANIMAL SCHISTOSOMIASIS IN THE PHILIPPINES

OBJECTIVES

1. To determine the prevalence of schistosomiasis in domestic animals in Dagawi, Leyte.

2. To determine the relative transmission index of various animals.

3. To determine the pathologic effect of *Schistosoma japonicum* in domestic animals.

FINDINGS

The prevalence rates obtained were 7.6% (50/652) for dogs; 4.18% (47/1124) for pigs; 0.074% (1/1349) for carabaos and 0% for goats. The hatchability was 56% for dogs and 36% for pigs. The relative transmission index was 65.74% for dogs and 34.26% for pigs.

All *S. japonicum* infected animals appear to be normal, active and with good appetite although underweight. Adult schistosomes were recovered in the portal and mesenteric veins of infected animals. Mixed infections with other helminths are not infrequent.

CONCLUSION

Domestic animals, in particular dog, pigs and carabaos, in order of importance also, act as reservoir hosts of *S. japonicum* and should not be overlooked in planning schistosomiasis control programmes.

STATUS

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GEOGRAPHICAL STRAINS, INDIVIDUAL AND POPULATION
CHARACTERIZATION OF ONCOMELANIA HUPENSIS QUADRASI
THE INTERMEDIATE HOST OF SCHISTOSOMA JAPONICUM
INFECTION IN THE PHILIPPINES

OBJECTIVE

To determine by morphometric and electrophoretic studies whether differences in geographical stains of Oncomelania hupensis quadrasi in the Philippines exist.

FINDINGS

There was an observed variation in the mean length and range of size distribution of snails from different endemic regions.

CONCLUSION

The electrophoretic patterns give enough bands that could be considered characteristic for each regional location, but the great variations between seemingly near endemic areas and similarities between distant endemic areas are not easy to explain.

STATUS

Completed.

OTHER DATA

Grantee : Dr Ruben Umaly
Institution : Department of Zoology
            Colleges of Arts and Sciences
            University of the Philippines
            Manila
Country : Philippines
FIELD TRIAL WITH TUBA (CROTON TIGLIUM) SEEDS AGAINST ONCOMELANIA QUADRASI

OBJECTIVES

1. To assess the efficacy of a plant molluscicide (tuba seeds) against *Oncomelania quadrasi* under field conditions.

2. To determine the efficacy of polynactin (synthetic molluscicide) under the same field conditions.

3. To compare the efficacy of tuba seeds and polynactin with niclosamide as the reference molluscicide.

FINDINGS

The effect of tuba seeds at a dosage of 8 gm/2 liters water/sq.m. is statistically comparable to niclosamide at 1 gm/2 liters/sq.m. Polynactin however, showed poor results when applied at 1 gm/2 liters of water/sq.m.

Preliminary assessment on the effect of tuba seed power on miracidia and cercaria of *Schistosoma japonicum* showed 100% immobilization for both at 8 ppm within 1 hour. Polynactin and Bayluscide were also effective at 2 ppm and 1 ppm respectively.

CONCLUSION

In view of the promising results, it is recommended that further studies and field tests of *Croton tiglium* be made. A practical method of preparing the compound from tuba seeds for field application both as a molluscicide and for cercariacide should be worked out.

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COMMUNITY-WIDE STUDY ON PROVISION OF WATER-SEALED TOILETS AND WATER PUMPS

OBJECTIVES

1. To determine acceptability of water-sealed toilets and jet-matic type of hand pumps.

2. To determine compliance with a standard criteria set for the putting up of the water-sealed toilet and hand-pump in which the recipient will have to give a counterpart.

3. To determine usage of the water-sealed toilets and individual or community maintenance of the hand-pumps.

FINDINGS

In Group A barangays, only 50% of recipients were actively using the toilets.

The population was not sufficiently sensitized or motivated regarding the importance of toilets. The provision of counterpart is also a problem in view of the economic condition prevailing.

In Group B barangays, 81.2% of the population have installed toilet bowls, slabs and housing and 90.8% who have installed the toilets are using them. There was a lack of water receptacles in 91% of the toilets constructed.

People appreciate the use of pumps but maintenance of the pumps may be a problem in the future.

CONCLUSION

The provision of water-sealed toilets and water pumps to a population need to be supplemented by continuous education if it is desired that these facilities should be used and maintained adequately.
PCD/2/79

STATUS

Completed.

OTHER DATA

Grantee : Mr S. Lagria

Institution : Schistosomiasis Control and Research Service
              Ministry of Health
              Manila

Country : Philippines
INVESTIGATION OF THE INFECTION RATE OF EXPOSED EXPERIMENTAL ANIMALS AND ONCOMELANIA HUPENSIS QUADRASI IN RELATION TO MASS TREATMENT OF SCHISTOSOMIASIS CASES

OBJECTIVE

General:
To investigate the infection rate among exposed animals (white mice) and Oncomelania hupensis quadrasi before and after mass treatment of schistosomiasis in an endemic area in Irosin, Sorsogon.

Specific:
1. To determine if the infection rate among exposed animals would remain constant or would increase in relation to non-treatment of schistosomiasis cases.

2. To determine if the infection rate of O. h. quadrasi would remain constant or would increase in relation to non-treatment of schistosomiasis cases.

3. To find out if the infection rate among exposed animals and snails would decrease after mass and continuous treatment of schistosomiasis cases has been introduced.

FINDINGS

The data gathered need to be finally organized and analyzed. Partial results indicate that the infection rate among exposed animals, exposed sentinel snails as well as field sampled snails has been decreasing in the study area of Bolos but remains high in the control area of Buenavista.

CONCLUSION

Treatment with praziquantel appears to have lowered the infection rate among exposed animals, exposed sentinel snails and the field snails in the study area. Further analysis of the data should be done and more observations should be made.
PCD/7/79

STATUS

Completed. A full report is awaited.

OTHER DATA

Grantee : Mr Ricardo Pineda

Institution : Schistosomiasis Control Team

Country : Philippines

Sorsogon
OBJECTIVES

1. To determine the prevalence of schistosomiasis in animals in endemic areas in Leyte.

2. To determine the clinical and pathologic aspects of schistosomiasis in naturally infected animals.

3. To determine, under field conditions the behaviour of animals through which they get schistosomiasis infection.

FINDINGS

1. Domestic animals especially dogs and pigs were the ones frequently exposed to contaminated water by wading, wallowing, drinking and through stream overflow. Carabaos get infected while wallowing or plowing.

2. The mean daily egg output of dogs is 1,298,591 eggs with 68% viability. For pigs, the mean daily egg output is 135,521 with 70% viability. The relative transmission index is 88.03% for dogs and 11.96% for pigs.

The main clinical features observed were paleness of the mucous membrane, well-formed faeces with blood-tinged mucus and emaciation. Gross pathological lesions include gray coloration of the lungs and liver, the presence of white foci in the lungs and liver, haemorrhages and thickening of the intestinal mucosa and the presence of schistosoma adults in the hepatic and mesenteric vessels. Mixed infections were commonly seen.

CONCLUSION

Dogs and pigs served as the main animal reservoirs and play significant roles in the transmission and perpetuation of the trematode. Pig is not as important as the dogs since it is fattened and slaughtered at the backyard level.

Studies on experimentally infected animals is necessary since naturally infected animals generally have mixed infections.
PCD/9/79

STATUS

Completed.

OTHER DATA

Grantee : Dr Tomas Fernandez
Institution : Visayan State College of Agriculture, Leyte
Country : Philippines
PHASE III FIELD TRIALS OF PRAZIQUANTEL AGAINST SCHISTOSOMA JAPONICUM INFECTION IN TWO ENDEMIC VILLAGES IN SORSOGON, PHILIPPINES

OBJECTIVES

1. To determine the efficacy and toxicity of praziquantel in the treatment of Schistosoma japonicum infection.

2. To monitor the effects of treatment on transmission among the negative population below 20 years of age through incidence studies.

3. To train local personnel in all aspects of population chemotherapy.

FINDINGS

1. The prevalence of schistosomiasis obtained during the study (42.7%) is practically the same as that obtained during the 1978 survey (43.1%).

2. The adjusted annual incidence rate of schistosomiasis is 16.5% in Bolos and 14.6% in Gumapia.

3. Of those receiving treatment, side effects were observed in 67%; however, 87.7% of the reactions were considered to be mild and consisted mainly of dizziness and abdominal pain. The abdominal pain may be accompanied by defecation - about 2-3 times with the stools containing varying amounts of blood.

4. Amongst those treated, the reduction in intensity of infection as measured by EPG (egg per gm. offers by Kato-Katz technique) and the proportion whose stools remain negative were as follows:

<table>
<thead>
<tr>
<th>Dose</th>
<th>Number treated</th>
<th>% Reduction EPG</th>
<th>% with negative stools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 month</td>
<td>3 months</td>
</tr>
<tr>
<td>2x30 mg</td>
<td>127</td>
<td>99.97%</td>
<td>99.53%</td>
</tr>
<tr>
<td>1x50 mg</td>
<td>165</td>
<td>100.00%</td>
<td>98.86%</td>
</tr>
</tbody>
</table>

- 42 -
CONCLUSION

Praziquantel is effective in diminishing the infection rate among those treated with 1x50 mg/kg body weight and 2x30 mg/kg body weight and in diminishing the intensity of infections after 1 month, 3 months and 6 months follow-up. It also produces less side effects than Fuadin or Ambilhar.

STATUS

Completed.

OTHER DATA

Grantee : Dr A.T. Santos, Jr.
Institution : Schistosomiasis Control and Research Service
Ministry of Health
Manila
Country : Philippines
OBJECTIVES

1. To determine the prevalence and intensity of infection of Schistosoma japonicum by quantitative stool examination in Victoria.

2. To determine the relationship of disease and its severity with the intensity of infection.

3. To compare the sensitivity and specificity of plasma COPT capillary tube method using standardized antigens and techniques with stool examination in determining Schistosoma infection in the population.

4. To carry out treatment and follow-up of schistosomiasis patients.

5. To correlate the above activities with studies on the snail infection rates in selected areas.

FINDINGS

Of the population examined, 37.44% were found to be infected by stool examination using the MIFC and the Kato-Katz techniques. A total of 52.47% had positive COPT reaction.

The highest infection rate of 67.09% occurred in the age group 15-19 years.

The average number of eggs is 159 eggs/gm.

Males pass more eggs than females. The heavy egg passers were recorded in the ages five years and over.

There is a positive correlation between the intensity of infection and liver enlargement. More hepatic and splenic enlargements were recorded among the infected.

The cercarial infection rate in the snails varies with the season with fewer snails found to be infected during March to August compared to September to February.
CONCLUSION

Schistosomiasis is prevalent to barangays Bethel and Canaan in Victoria. The COPT appears to be a more convenient and a more sensitive test for determining Schistosoma infection.

STATUS

Completed.

OTHER DATA

<table>
<thead>
<tr>
<th>Grantee</th>
<th>Professor N. Jueco</th>
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</thead>
<tbody>
<tr>
<td>Institution</td>
<td>Department of Parasitology</td>
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<td></td>
<td>Institute of Public Health</td>
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<td>University of the Philippines</td>
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<td></td>
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<tr>
<td>Country</td>
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</tr>
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</table>
ESTABLISHMENT OF A SERUM BANK COLLECTION AT THE INSTITUTE OF PUBLIC HEALTH, UNIVERSITY OF THE PHILIPPINES

OBJECTIVE

To accumulate sera of adequately documented cases of Schistosoma japonicum which will be farmed out to collaborating research workers and research centres and be used in evaluating immunodiagnostic tests.

FINDINGS

Specimens have been made available to collaborating centre and other workers requesting such sera.

CONCLUSION

The Serum Bank not only serves as a source of valuable material but also provides training in certain aspects of schistosomiasis research.

STATUS

Completed.

OTHER DATA

Grantee : Dr E. Garcia
Institution : Department of Parasitology
           : Institute of Public Health
           : University of the Philippines
           : Manila
Country : Philippines
ULTRASTRUCTURE OF SCHISTOSOMA JAPONICUM AND ONCOMELANIA HUPENSIS QUADRASI

OBJECTIVES

To determine the ultrastructure of the Schistosoma japonicum and Oncomelania hupensis quadrasi with the purpose of pinpointing the aspects of relationships that may be altered or changed in attempts at interrupting or preventing the cycle of the host or the parasite or both.

FINDINGS

Q. hupensis quadrasi. A detailed description of the various parts of the body was made. The result is a compilation of ultrastructural data which it is hoped would provide baseline information for subsequent studies.

S. japonicum. Detailed ultrastructural description of the egg, cercaria and adult schistomes were made.

CONCLUSION

Baseline ultrastructural description of the parasite S. japonicum and the snail intermediate host Q. hupensis quadrasi were made.

STATUS

Completed.

OTHER DATA

Grantee : Dr Gloria L. Enriquez
Institution : Department of Zoology
             College of Arts & Sciences
             University of the Philippines
             Manila
Country : Philippines
CYTOCHEMICAL AND HISTOCHEMICAL CHARACTERISTICS OF 
SCHISTOSOMA JAPONICUM

OBJECTIVES

1. To characterize cytochemically and histochemically the different stages of Schistosoma japonicum.

2. To establish differences and/or similarities among the different stages with particular reference to surface membranes of the parasite and their enzyme systems.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Professor G. Enriquez
Institution : Department of Zoology
            College of Arts & Sciences
            University of the Philippines
            Manila
Country : Philippines
IMMUNODIAGNOSIS AND CHEMOTHERAPY OF PARAGONIMIASIS AND CLONORCHIASIS

OBJECTIVES

1. To develop specific and rapid immunodiagnostic tests for paragonimiasis and clonorchiasis.

2. To assess the efficacy of various chemotherapeutic agents in the treatment of paragonimiasis and clonorchiasis.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Zhong Hui Lan
Institution : Tropical Medicine Research Institute Beijing
Country : People's Republic of China
OBJECTIVES

1. To determine snakebite incidence and its distribution.
2. To determine the distribution and identification of poisonous snakes.
3. To review treatment records and effectiveness.
4. To determine trends and patterns of snake bites.

FINDINGS

The number of snakebites in Malaysia increased to 106.1% in 1978 compared to the 1964 level. Yearly death rates were less than 1% for the total bites; no significant differences were noticed in the average monthly fluctuations. Kedah has the highest number of incidents followed by Pulau Pinang, Perlis and Perak. Majority of bite victims were males and ethnically the Malays were more commonly bitten followed by the Chinese, Indian and other groups. The age group 15-44 years was the most commonly affected. The most common length of hospitalization was between 1-2 days after admission.

Each state has a distinct occupational pattern of bite victims. In a survey done from 1 August 1974 to 31 July 1975, the Crotalids were responsible for 1217 incidents, the Elapids for 148, sea snakes for 92, non-venomous snakes for 91 and unidentified snakes for 1459. Except for sea snakes, most incidents occurred in the home followed by areas in and around the estates.

Medical attention in most instances were received within six hours after the bite. Antivenin efficiency (survival rate after administration) varied from 100% with the sea snakes and other vipers (except the Malayan pit viper) to a low of 66.3% with the King cobra. The King cobra was the most lethal snake, followed by the cobra, the sea snakes, the Malayan pit viper and other vipers.

The human death rate for the bites of positively identified poisonous snakes was calculated to be 1.03% and for the bites of all snakes 0.5%.

CONCLUSION

Completed.
PCD/34/79

STATUS

Completed.

OTHER DATA

Grantee : Dr J. Mori
Institution : Institute for Medical Research
Kuala Lumpur
Country : Malaysia
OBJECTIVES

1. To determine the prevalence of clonorchiasis along the Nag Dong River.

2. To study the distribution of primary and secondary intermediate hosts and infection rates.

FINDINGS

The prevalence rates of clonorchiasis among inhabitants of three towns in the endemic area was 38.4% among a total of 1384 persons examined. By sex, the male (41.9%) showed relatively higher infection rate than the female (35.3%). By age, increase of rate was observed as increase in age. The highest rate was 80.7% in 50-59 years age group. The intensity of infection was in general light; 89.1% of examined cases were below 10,000 E.P.G.

The metacercarial detection rate from fresh water fish from lower area of Nag Dong River showed 100% in Pseudorasbora parva, 41.4% in Pseudogobio esocius, 37.1% in Hemibarbus labeo and 33.3% in Acheilognathus limbata and 4.5% in Erythroculter erythropterus respectively.

The mean number of metacercariae per gram of fish muscle was 21.2 in P. parva, 15.0 in P. esocius, 11.9 in H. labeo, 3 in A. limbata and 1.6 in E. erythropterus respectively.

STATUS

Completed.

OTHER DATA

Grantee : Dr Soo Bok Song
Institution : College of Medicine
             Busan National University
             Busan City
Country : Republic of Korea
ECOLOGY OF SNAILS WHICH MEDIATE CLONORCHIS SINENSIS IN KOREA

OBJECTIVES

1. To determine the state of clonorchis problem in the area.

2. To determine the influence of geo-environmental changes on the snail population.

3. To explore the relationship of snail ecology with water pollution.

FINDINGS

1. The surface soil of the sampling sites were clayish silt in general.

2. Physical and chemical properties of the water such as ph, hardness, chlorides, NH3-N, SO4, SO3, PO4 showed seasonal variation but were within normal range.

3. Parafossarulus manchouricus remain on the surface of the soil even at temperature of 1-8°C.

4. Redia and cercaria of Clonorchis sinensis were detected in 0.8% (4/917) of the snails examined in January but were negative among 2200 snails collected during spring, summer and autumn.

5. The amount of mercury in the soil was 0.159-0.575 ug/gm but there was far less amounts in water and snails.

6. Waters with lead, mercury, chromium and cadmium showed no appreciable cercarial effect even up to six hours.

CONCLUSION

The existing environmental conditions in the Yeongsan River do not affect the normal ecology of P. manchouricus, the first intermediate host of Clonorchis sinensis.
PCD/29/78

STATUS

Completed.

OTHER DATA

<table>
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<tr>
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<th>Professor Chin Thack Soh</th>
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| Institution | Institute of Tropical Medicine  
              Yonsei University  
              Seoul               |
| Country     | Republic of Korea        |
STUDIES ON THE RELATION OF CLONORCHIS SINENSIS TO THE
ESTABLISHMENT OF CHOLANGIOHEPATOMA

OBJECTIVES

1. To establish epidemiological evidence that a direct relationship exists between Koreans infected with Clonorchis sinensis and primary liver carcinomas through an epidemiological and statistical study on clonorchiasis cases in Korea.

2. To test the hypothesis that C. sinensis is a factor of the oncogenesis of cholangiocellular carcinoma of the liver through studies of histopathological features of the livers from experimentally infected laboratory animals of naturally infected Koreans.

FINDINGS

Study is in progress. Hospital records of primary liver cancer and clonorchiasis cases from endemic and non-endemic areas are being collected and reviewed. In the laboratory, animal studies are in progress. Liver of hepatoma and cholangioma cases combined with clonorchiasis are being studied.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Hong Ki Min
Institution : Institute of Tropical Medicine
Country : Republic of Korea
Yonsei University
Seoul
TO ESTABLISH A MICRO-ELISA KIT FOR THE RAPID IDENTIFICATION OF *AGKISTRODON RHODOSTOMA* AND *NAJA NAJA* BITES BY THE SPECIFIC DETECTION OF VENOM

**OBJECTIVE**

To develop an immunodiagnostic kit that may be useful for the rapid identification of the biting snakes.

**FINDINGS**

Rabbit anti-venom Ig G was bound to the solid phase to enable detection of venom from both the Malayan pit viper (*Agkistrodon rhodostoma*) and the common cobra (*Naja naja*). This assay is read visually and takes 35–45 minutes to perform. It can detect 15.6 µg/ml of viper venom in 75 minutes and 7.8 µg/ml of cobra venom in 55 minutes. Tests on sera of snake bite patients showed detectable levels of snake venom in the screen even though administration of anti-venom was not necessary. Results from the clinical cases were obtained in less than 45 minutes. It was found that the most suitable washing media was saline/Tween. The assay could be performed at room temperature and plates stored for six months showed no loss of activity.

**CONCLUSION**

A micro-ELISA assay method has been established for the rapid identification of certain kinds of snake bites that is simple to perform, is assay specific and has no cross reactivity.

**STATUS**

Completed.

**OTHER DATA**

<table>
<thead>
<tr>
<th>Grantee</th>
<th>Mr J.S. Dhaliwal</th>
</tr>
</thead>
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<tr>
<td>Institution</td>
<td>Division of Serology and Immunology Institute for Medical Research Kuala Lumpur</td>
</tr>
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</table>
FIELD OPERATIONAL RESEARCH ON THE CONTROL OF PARAGONIMIASIS AND CLONORCHIASIS IN KOREA

OBJECTIVES

1. To establish a pilot demonstration area for the control of Paragonimiasis and Clonorchiasis.

2. To coordinate efforts by various Government agencies to control these infections.

3. To utilize the information gathered as a basis for planning the control programme on a national scale.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Professor Chin Thack Soh
Institution : Institute of Tropical Medicine
Yonsei University
Seoul
Country : Republic of Korea
ETIOLOGICAL STRUCTURE OF DIARRHEAL DISEASES WITH SPECIAL REFERENCE TO YOUNG AGE GROUPS

OBJECTIVES

1. To collect epidemiological data on
   1.1 distribution, morbidity and mortality patterns of diarrhoeal diseases in order to identify population at highest risk.
   1.2 identification of environmental, behavioural and nutritional factors contributing to the prevalence of diarrhoeal diseases.

2. To determine the causative pathogens especially amongst the young age group where diarrhoea is most prevalent.

FINDINGS

Preliminary reports indicate that certain background data on population have been collected.

In the sample population studied the overall morbidity from diarrhoeal diseases was 23.1/1000 population. The morbidity rate at age group 0-4 years is 708.3/1000 population.

Results of bacteriological examinations done on cases in 1981 and the first six months of 1982 were as follows:

<table>
<thead>
<tr>
<th>Ages</th>
<th>All ages</th>
<th>Five years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number examined</td>
<td>1 978</td>
<td>1 491</td>
</tr>
<tr>
<td>Number positive</td>
<td>201</td>
<td>155</td>
</tr>
<tr>
<td>Salmonella</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Shigella</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>E.P.E.C.</td>
<td>165</td>
<td>127</td>
</tr>
<tr>
<td>E.T.E.C.</td>
<td>16</td>
<td>11</td>
</tr>
</tbody>
</table>

CONCLUSION

In progress.
CODD/4/81

STATUS

In progress.

OTHER DATA

Grantee : Professor Dang Duc Trach
Institution : National Institute of Hygiene and Epidemiology
Country : Socialist Republic of Viet Nam
BACTERIOLOGICAL STUDY ON INFANTILE DIARRHOEA

OBJECTIVE

To obtain better understanding of the cause of diarrhoeal diseases due to infections of Campylobacter jejuni, Yersina enterocolitica and pathogenic E. coli in a study area in Shanghai.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Huilan Sima
Institution : Shanghai Hygienic and Anti-Epidemic Centre
             Shanghai
Country : People's Republic of China
A STUDY OF THE EPIDEMIOLOGY OF DIARRHOEAL DISEASES

OBJECTIVES

1. To determine the morbidity and mortality of diarrhoeal diseases in children under five years of age.

2. To identify specific bacteria and viral etiologic agents responsible for diarrhoeal diseases.

3. To provide basic epidemiological data useful for implementing strategies of the national diarrhoeal diseases control programme.

FINDINGS

Preliminary reports indicate that baseline data regarding the population under five years of age, nutritional status, house types, feeding practices, water supply, toilet facilities and other related variables are being gathered. The morbidity surveillance is in progress.

In addition to the results noted in her earlier report of 13 May 1983 the principal investigator indicated (a) in addition to low socioeconomic status and age 6-11 months, the male sex and the use of tubewell as source of water were now additional independent risk factors; (b) a revised incidence of seven episodes per 100 children-months or 0.8 episodes/child/year; (c) a persistently low pathogen isolation rate (40%) in diarrhoeal cases; (d) little seasonal variation among reported pathogens (except rotavirus); (e) low isolation of ETEC and C. jejuni in cases of higher socioeconomic status; and (f) rare isolation of rotavirus stools of those over two years of age.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr M.S. Claudio Saniel
Institution : Research Institute of Tropical Medicine
Country : Philippines

- 62 -
STUDY ON PATHOGENS OF ACUTE DIARRHOEA AND ITS
ANTIBIOTIC SUSCEPTIBILITY

OBJECTIVES

1. To study the epidemiologic pattern of enteric pathogens including Shigella, Salmonella, Yersinia, Campylobacter, Vibrio parahemolyticus, Rotavirus and enterotoxigenic E. coli in acute diarrhoeal patients.

2. To establish a diarrhoeal disease laboratory centre.

FINDINGS

A progress report indicates some staff have been trained in the examination of Rotavirus. Results of blood cultures for Salmonella and of stool examination for Salmonella. Shigella, Campylobacter and Rotavirus were also given. Antibiotic susceptibility testing were also done in collaboration with five other institutes.

CONCLUSION

1. Campylobacter jejuni was isolated mostly from the age group under six months.

2. Pathogens were identified from 37% of specimens; lack of E. coli testing (specifically, for ETEC) may account for this low percentage, as well as the possibility of prior antibiotic treatment of study patients.

3. Isolates of Salmonella from the study population were also small. Antibiotics might have played a role.

In summary, a follow-up study of Campylobacter transmission in young infants may be particularly interesting.

STATUS

Completed.

OTHER DATA

Grantee : Professor Seung Hahm Park
Institution : Department of Clinical Pathology
             College of Medicine
             Hanyang University, Seoul
Country : Republic of Korea
EPIDEMIOLOGICAL STUDY ON INFANTILE DIARRHOEA AND GASTROENTERITIS IN NEW CALEDONIA

OBJECTIVES

To study the etiology and epidemiology of diarrhoea and gastroenteritis in children less than five years of age in New Caledonia which would serve as a basis for planning the strategy of prevention and control.

FINDINGS

In progress.

From the progress report, it appears that the Principal Investigator and his colleagues have undertaken a comprehensive study and have exhaustively analyzed their data. Of particular interest are the difference in diarrhoea rates by ethnic group and in the occurrence of dehydration by sex. Also, the association between the occurrence of diarrhoea and the type of housing conditions was interesting although not surprising. In general, there were some innovative associations evaluated, reflecting a comprehensive epidemiological background of the investigator.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr G. Le Gonidec/Dr Jean Joseph Floch
Institution : Department of Virology and Department of Bacteriology Institut Pasteur de Noumea Noumea
Country : New Caledonia
STUDY OF BACTERIAL PATHOGENS ASSOCIATED WITH ACUTE DIARRHOEA IN INFANCY AND CHILDHOOD IN BEIJING

OBJECTIVE

To find out the causative agents of diarrhoea of bacterial origin in a paediatric population in Beijing so as to provide a scientific basis for prevention and treatment of diarrhoeal diseases.

FINDINGS

In progress.

Seventy-two strains of enteropathogens were isolated from the 122 specimens, with an isolation rate of 59.02%. Shigella was the most frequently identified pathogen for patients of all ages (18.9%). Campylobacter jejuni and ETEC were isolated from 13.1% and 13.9% of patients respectively. Salmonella was obtained in 4.1%. The first three pathogens are main bacterial agents causing acute diarrhoea of children in Beijing.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Xu Zhao-Yu
Institution : Department of Basic Research
Beijing Children's Hospital
Beijing
Country : People's Republic of China
EVALUATION OF ORAL REHYDRATION PROGRAMME FOR THE TREATMENT OF DIARRHOEA IN SOUTHERN ISLAND PROVINCE PAPUA NEW GUINEA

OBJECTIVES

1. To determine the mortality rate from diarrhoea in children and whether oral rehydration therapy (ORT) has contributed to a fall in mortality of diarrhoea in children.

2. To assess the extent of morbidity from diarrhoea in children.

3. To assess the health worker's skill in the treatment of diarrhoea.

4. To determine the availability of necessary equipment for ORT at different levels of health care.

5. To determine community KPA in relation to diarrhoeal diseases.

FINDINGS

In progress. (It is expected to complete writing up the whole study by the end of 1984.)

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr D. Lehmann
Institution : Tari Research Unit
            Southern Highlands Development Project
            Southern Highlands Province
Country : Papua New Guinea
OBJECTIVES

Main objective:

To elucidate, define and describe the epidemiology of Rotavirus diarrhoea in Tonga.

Sub-objectives:

1. To determine the role of Rotavirus as etiologic agents of diarrhoeal diseases (DD) in infants and young children.

2. To determine the prevalence, distribution and relative importance of the two known Rotavirus sero types.

3. To elucidate the epidemiologic characteristics and important clinical features of Rotavirus diarrhoea.

4. To determine the pattern and extent to which cross transmission of human and pig Rotavirus occurs under natural conditions.

5. To evaluate the role of domesticated pigs as possible reservoirs of Rotavirus infection in humans.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Sonatane Tupou
Institution : Vaiola Hospital
             Tonga, Ministry of Health
             Havelu Tongatapu
Country : Tonga
OBJECTIVES

1. To define the incidence of etiology of enteric infections among children in a South Pacific village community by a longitudinal study.

2. To relate infection rates and the time of infection to individual and household attributes.

FINDINGS

In progress.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr Ian Gust/Dr R.J. Taylor/
Dr F. Spooner

Institution : Fairfield Hospital, Melbourne, Australia
South Pacific Commission, Noumea
New Caledonia
Ministry of Health, Vanuatu

Country : Vanuatu
SALMONELLOSIS IN GUAM

OBJECTIVE

To determine the mode of spread of Salmonellosis with special emphasis on S. waycross in Guam.

FINDINGS

In progress.

The initial results of soil surveys revealed that although the numbers of samples were small, they suggested that contamination of the environment on Guam with salmonella bacteria might not be any different in villages with a high incidence of the disease than in those with a low incidence of the disease. This suggested that perhaps personal (or family) hygiene might be an important factor in getting who gets this infection - hence the principal investigator requested for support in developing a questionnaire that would be appropriate for testing knowledge, attitude and practice with regard to sanitation.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr R. Haddock
Institution : Department of Public Health and Social Services
Country : Guam
COMMUNICABLE DISEASES

OCD/1/77

DENGUE HAEMORRHAGIC FEVER IN THE PHILIPPINES

OBJECTIVE

To study the clinical, entomological, virological and epidemiological aspects of Dengue Haemorrhagic Fever (DHF) in the Philippines.

FINDINGS

Clinical aspects: Of 629 suspected DHF cases, 278 (44.2%) were serologically confirmed by HI test. Hepatomegaly was observed in only 55% of the cases. Platelet counts and hematocrit were helpful indices in treatment but not as diagnostic criteria. The management of Grade II DHF cases consisted mainly of intravenous (IV) fluids, while Grades III and IV patients were given a combination of IV fluids plus plasma expanders and/or steroids.

Entomology: Various indices used as the indoor resting density, Breteau index, container index, etc. varied significantly among stations and/or districts and by month and/or season. About 99.5% of larvae recovered were *Aedes aegypti*. Efforts to isolate dengue virus were not fruitful.

Epidemiology: The prevalence of infection as determined by serology in children 1-15 years increases with age. About 71% of new dengue infections exhibited primary type antibody response and 29% the secondary type. Cases were reported throughout the year with seasonal fluctuations.

Virology: Thin layer immunoassay (TIA) appears to be a rapid and simple test for DHF. Its application as a diagnostic test in peripheral laboratories should be looked into.

Fluorescent antibody test (FAT) on peripheral blood mononuclear cells also shows promise as a diagnostic test for DHF in a central laboratory.

Difficulties in isolation of dengue virus remain as a stumbling block in the attempt to associate a dengue virus serotype to severe forms of DHF/DSS.

CONCLUSION

Certain clinical, entomological, epidemiological and virological aspects of DHF in the Philippines have been elucidated. Virus isolations were not successful. Further attempts to isolate dengue viruses need to be done.
STATUS

Completed.

OTHER DATA

Grantee : Dr V.F. Chan
Institution : Institute of Public Health
University of the Philippines
Manila
Country : Philippines
ASSESSMENT OF EFFICACY OF IMMUNIZATION AGAINST PIG-BEL

OBJECTIVES

1. To continue field observation of children immunized against pig-bel in 1979 compared with a control group of children injected with tetanus toxoid.

2. To follow up the serum levels of antibody to the B toxin of _C. welchii_ type C in the immunized group over a period of time and to assess the effect of three injections on the serum levels reached and persistence of immunity in a sub-sample of the immunized and control groups.

FINDINGS

Morbidity and mortality due to pig-bel in 24 months after vaccination

<table>
<thead>
<tr>
<th></th>
<th>C. welchii</th>
<th>Tetanus Toxoid</th>
<th>Unvaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 doses</td>
<td>1 dose</td>
<td>2 doses</td>
</tr>
<tr>
<td>Total cases</td>
<td>2</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>Deaths</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Population</td>
<td>2 538</td>
<td>756</td>
<td>2 532</td>
</tr>
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</table>

The incidence is over 2 500 immune children within 24 months was less than 1/8 of that of the control group.

Two cases of pig-bel developed in the immunized group 8-9 months after investigation and there were none since then. During the same period seven cases developed among the controls indicating that some protection persists. Forty six of 57 children given two doses had B antitoxin levels 70.5 units/ml. Two weeks after being given a third dose after one year, only one out of 57 children was without detectable circulating antitoxin. The geometric mean antitoxin level was 13.2.
CONCLUSION

Pig-bel is now a preventable disease. A primary course of three doses seems wise. Since the disease occurs mostly in children, administration at the same time as triple antigen vaccine and with subsequent booster doses in children seems logical.

STATUS

Completed.

OTHER DATA

Grantee : Dr Gregor Lawrence
Institution : Institute of Medical Research
Country : Papua New Guinea
STUDY OF IMMUNOLOGICAL ASPECTS OF CIQUATERA POISONING

OBJECTIVES

1. To study humoral and cell-mediated immunity in patients.

2. To study the radioimmunological detection of toxin in tissues of affected fish.

FINDINGS

Preliminary results indicate that ciguatoxin do not exhibit immunogenic properties in human or animals. Other immunization methods will have to be investigated using fish extracts. Unfortunately, the extraction of ciguatoxin is very expensive; hence, this is a problem.

CONCLUSION

Further basic studies are necessary.

STATUS

Completed.

OTHER DATA

Grantee : Dr R. Bagnis

Institution : Medical Biology Unit
             Institut de Recherches
             Medicales "Louis Malarde"

Country : French Polynesia
IMMUNOLOGICAL STUDY OF TYPHOID FEVER AND
THE TYPHOID FEVER CARRIER STATE

OBJECTIVES

1. To find out whether antiprotein antibodies are produced during typhoid infection in man.

2. To compare antibody response against these protein antigens and that against LPs antigens and with the use of these proteins as antigen.

3. To find immunological parameters suitable for rapid diagnosis of typhoid fever or for the large scale screening of typhoid carriers.

4. To find immunologic parameters associated with protection against typhoid infection.

FINDINGS

1. Antigenic analysis by immunoelectrophoresis of protein antigens extracted from *S. typhi* showed that these antigens contain at least 11 immunogenic components.

2. Rabbits immunized with acetone-fixed *S. typhi* cells produced more varieties of antibodies to these protein antigens than those immunized with heat-treated *S. typhi* cells.

3. Rabbits immunized with Barber's protein extracted from *S. typhi* produced as many varieties of antibodies as those immunized with acetone-fixed *S. typhi* cells.

4. Antibodies against these proteins could be detected in sera of both the typhoid patients and typhoid carriers. However, patients and carriers reacted to different antigenic components contained in these protein antigens.

5. Detection of anti-protein antibodies by CIE was found to be better than Widal test for serologic diagnosis of typhoid fever.

6. Analysis of the anti-protein antibodies contained in patients' sera by radioimmunoassay (RIA) showed that these antibodies were present in all three major immunoglobulin classes, IgG, IgA and IgM.

7. Typhoid carriers by contrast, produced anti-protein antibodies of only the IgG and IgA classes.

8. Barber's protein antigens extracted from *S. typhi* were found to contain V antigen present in the form of a Vi-protein complex.
9. Anti-protein antibodies were also detectable in the jejunal fluid or typhoid patients and carriers. These antibodies were mainly of the IgA and IgM types in patients and of the IgA type in carriers.

CONCLUSION

Antigens which react with typhoid carrier sera are distinctive from those that react with typhoid patients' sera. Further efforts to fractionate and purify these antigens are needed with a view to using them with the screening of typhoid carriers by CIE, in the measurement of humoral immune response by RIA and the study of CMI status of typhoid carriers and patients during and after typhoid infection.

STATUS

Completed.

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HEPATITIS B VIRUS MATERNAL AND CHILD TRANSMISSION AMONG FILIPINOS

OBJECTIVES

To assess frequency and mechanics of HBV transmission from HBV infected Filipino mothers to their children.

Specifically:

1. To determine the frequency and age of HBV infection of Filipino children to HBs Ag positive mothers compared to HBs Ag negative mothers.

2. To determine the relative roles of maternal HBs Ag, anti-HBc and Hbc positives in the predisposition to child infection and the importance of maternal anti-HBs and anti-HBc in the prevention of child infection.

FINDINGS

In progress.

About 1414 sera from mothers delivered at the Fabella Memorial Hospital have been collected and testing of the sera is in progress. Great difficulty is being encountered in the follow-up of the mothers since a large proportion could not be traced. It is now planned to shift the venue of the study to the rural areas where the population is less mobile.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Dr A. Lingao
Institution : Philippine General Hospital Medical Center
             University of the Philippines
             Manila
Country : Philippines
COMPARISON OF TREATMENT SCHEDULES FOR UNCOMPLICATED GONOCOCCAL INFECTION

OBJECTIVES

1. To select the most suitable drug regimen for the treatment of gonococcal infections in Korea.

2. To identify β-lactamase producing Neisseria gonorrhoeae among isolates and estimate their prevalence.

3. To enable in collaboration with the N.I.H. to determine the antimicrobial sensitivity of N. gonorrhoeae currently in circulation in Seoul.

FINDINGS

Preliminary results were as follows:

<table>
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<tr>
<th>Drug</th>
<th>PPNG Treated</th>
<th>PPNG Cured</th>
<th>% cure</th>
<th>Non PPNG Treated</th>
<th>Non PPNG Cured</th>
<th>% cure</th>
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<tbody>
<tr>
<td>1. Kanamycin</td>
<td>75</td>
<td>56</td>
<td>74.7</td>
<td>136</td>
<td>111</td>
<td>81.6</td>
</tr>
<tr>
<td>2. Combicillin + Probenecid</td>
<td>56</td>
<td>0</td>
<td>0</td>
<td>165</td>
<td>146</td>
<td>88.5</td>
</tr>
<tr>
<td>3. Chloramphenicol</td>
<td>33</td>
<td>5</td>
<td>15.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. Tetracycline HCL</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>41</td>
<td>9</td>
<td>21.9</td>
</tr>
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Above results have not been compared to a standard regimen for treating PPNG. Only Kanamycin emerges as treatment which could be acceptable in the national V.D. control programme. A new treatment trial using a congener of Chloramphenicol (Thiamphenicol) is being planned with Spectinomycin (Trobicin) with an expected cure rate of 98% serving as standard.

CONCLUSION

It is suggested that for non-PPNG derived male uncomplicated urethritis, fortified Penicillin G, 6 mega unit, i.m. and Kanamycin 2.0 gm, i.m. are still the drugs which could be used.

For PPNG infections, cetotaxime and cetoperasone are the drugs to be recommended. Kanamycin can also be recommended for PPNG infections. Chloramphenicol cannot be recommended for PPNG infections.
**STATUS**

Completed.

**OTHER DATA**

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- 80 -
ACUTE RESPIRATORY INFECTION

OBJECTIVES

Main objective:
To establish a pilot respiratory sentinel unit.

Sub-objectives:
1. To study the magnitude of the Acute Respiratory Infection (ARI) problem in a community.
2. To ascertain factors that may relate to the incidence of ARI.
3. To identify areas where intervention may be applied in order to decrease the mortality and morbidity of ARI.

FINDINGS (Preliminary)

Attack rates for acute lower respiratory infection (ALRI) was highest in the age group 1-4 years followed by infants under one year. This is somewhat different from those reported in similar underprivileged communities among Navajo Indians in U.S.A. and in Papua New Guinea where infants under one year were noted to be at greater risk instead.

Risk factors in the occurrence of ARI were analyzed in children under five years of age. Low socioeconomic state, crowding, and lack of DPT vaccine were significant risk factors in this population. Malnutrition did not appear to post as a risk factor for ARI morbidity.

No deaths occurred in children who had normal nutrition as compared to 5.5% case fatality rate (CFR) for the malnourished children (p 0.05).

Haemophilus influenzae and Streptococcus pneumonia were the predominant organisms isolated and they were present alone or in combination in approximately 78.7% of the patients.

The mortality due to acute respiratory infections (ARI) particularly in children under five years of age is exceedingly high in developing countries as compared to developed countries. The ARI mortality rate in infants under one year is 1562.2 in the Philippines compared to 66.5 per 100 000 population in Australia; it is 72.7 times higher for children 1-4 years of age in the Philippines at a rate of 290.8 compared to 4.1 per 100 000 in Australia. This unacceptably high mortality rate in developing countries has been attributed primarily to a bacterial etiology in the majority of cases in contrast to a viral etiology in developed countries.
CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee: Dr T. Tupasi Ramos

Institution: Department of Medicine
University of the Philippines
Philippine General Hospital
Medical Center
Manila

Country: Philippines
STUDY ON THE ETIOLOGY AND INCIDENCE OF ACUTE RESPIRATORY INFECTIONS IN CHILDHOOD

OBJECTIVES

1. To determine the epidemiological pattern of acute respiratory infections.

2. To study the rapid diagnosis of acute viral respiratory diseases by the use of immunofluorescent technique.

3. To achieve better therapeutic efficacy by combined treatment with traditional Chinese and Western medicine.

FINDINGS

Preliminary results indicate that 496 children under 12 years of age are visited weekly and all ARI episodes encountered have been diagnosed, treated and recorded. An average of 2.5 ARI episodes per child has been reported. The incidence rate is highest in infants and children 1-2 years of age. Common cold was the most common episode recorded. Pneumonia and bronchiolitis accounted for only 2% of the episodes. Of 162 samples examined, 53 (32.7%) were of bacterial origin with Streptococcus pneumonia, Staphylococcus aureus and Haemophilus influenzae being isolated. Virus was isolated in 23 out of 190 examined. Specimens from healthy children gave only slightly lower rates of isolates.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Professor Zhang Zi-jing

Institution : Department of Paediatrics
Institute of Paediatrics
Chinese Academy Medical Science
Beijing

Country : People's Republic of China
RAPID DIAGNOSIS OF DENGUE INFECTIONS

OBJECTIVES

1. To provide rapid diagnosis of dengue infections without resorting to virus isolation.

2. To compare the sensitivity of diagnostic methods currently available for isolation of dengue in an attempt to arrive at definite answer.

3. To provide better surveillance and thus a speedier control programme.

FINDINGS

Preliminary reports indicate:

1. That positive laboratory diagnosis of dengue infections can be obtained in many instances under one week as compared with conventional methods which may take several weeks by means of isolation of viruses using mosquito cell culture such as A6-61 and C6/36 on lab-tek slides or plastic vessels or the use of immunofluorescent staining on head squashes of Toxorhynchites splendens mosquitoes following intrathoracic inoculation.

2. The successful production of monoclonal antibodies against Dengue type 4 virus. It is hoped to produce good clones against all four Dengue types.

3. As an offshoot, the immunopathogenesis of dengue infections specifically cell mediated immune responses in mice infected with dengue viruses is being explored. Antigenic characterization of dengue viruses using detailed analysis of nucleic acid sequencing by polyacrilamide gel electrophoresis is also being initiated.

4. So far, 40 strains of dengue virus either in mosquito or mosquito cell cultures have been isolated and these strains are being kept for analysis.

CONCLUSION

In progress.
**STATUS**

In progress.

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<td>Institution</td>
<td>Department of Medical Microbiology University of Malaya Kuala Lumpur</td>
</tr>
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OBJECTIVES

To establish a unit for research on Pneumonia and Acute Respiratory Infection in a defined population which will establish a rational basis for health interventions and for WHO's regional and global programme on Acute Respiratory Infections.

Specifically:

1. To coordinate multi-disciplinary research into the natural history of acute respiratory infections (ARI) and into methods of management and control.

2. To foster the development of national programmes of management and control of ARI through existing services.

3. To serve as a model for the development of similar studies in the Western Pacific Region.

FINDINGS

1. Study of ARI in the define population is well established.

2. Bacterial and viral laboratories have been established.

3. A handbook on methodology for ARI units has been drafted.

4. A draft manual for ARI bacteriology has been developed.

5. Training manual for Aid Post Orderlies on management of ARI is being developed.

6. Health services strategies relating to improvement in technology of primary health care, improvements in housing and effects of health education, field testing of vaccines, clinical trials with antibiotics, use of oxygen, improvement in management of cases, operational research, etc. are being developed.

CONCLUSION

Various studies are in progress.
The ARI unit can provide sound basis for further applied and basic research into problems of ARI. It has also served as a model for the establishment of similar units in other countries in the region.

STATUS

In progress.

OTHER DATA

Grantee : Dr. M. Alpers
Institution : Institute for Medical Research
Country : Papua New Guinea

Goroka
VECTOR BIOLOGY AND CONTROL

PCD/2/78

BIOLOGICAL CONTROL OF MOSQUITOS IN THE REPUBLIC OF KOREA BY NATIVE PREDATORS

OBJECTIVES

To investigate the feasibility and practicability of using native predators such as planaria, hydra and mosquito-eating fish in the biological control of mosquito vectors of malaria, Japanese encephalitis and filariasis in the Republic of Korea.

FINDINGS

A total of 32 species of mosquito larvae and their associated predators including mosquitoes belonging to 27 families of 17 orders were identified in the areas surveyed. The common minnow Zacco platypus was the predator most commonly found in the central and south eastern areas of the Korean peninsula but not in the south western area where breeding of Culex tritaeniorhyncus is high in July and August to constitute a serious problem. Results of experiments in fiberglass aquarium and in simulated rice paddies strongly suggest that Z. platypus is a potential fish predator and large scale field trials in genuine mosquito problem areas need be carried out to determine their practical value in mosquito control.

The study also demonstrated that a critical and detrimental factor affecting either Z. platypus or the mosquito population in rice fields was herbicide application. Future research should consider toxicological evaluation of various pesticides and herbicides commonly used in rice plantations.

Fresh water planaria Dugesia japonica were present in rather low densities in rice paddies at Changgok-Ni. Although exact control data was not obtained, it appears that the species seemed to contribute to the reduction of larvae in weedy habitat with heavy algae on the surface.

Hydra species were found in two areas; however, they were scarce and irregular in appearance during different times of the year.

Laccophilus species belonging to the family Dytiscidae were commonly found in great numbers during the year but their population peaked two months before the mosquito breeding months. Hence, they may have little role due to poor synchronization with the hosts.
Synpetrum species belonging to the family libellulidae nymphs were sporadically found in rice paddies in two areas. As with Laccophilus nymphs, their high density occurs in May and June and their role is probably insignificant. Zacco also reduces chironomid larvae through direct predation and it apparently has no effect on beneficial aquatic naiads such as Bytiscidae, Libellulidae, Hydrophilidae, Corixidae and Baetidae.

CONCLUSION

Zacco platyphus is a potential fish predator of mosquitos and there is need to carry out further studies to determine precise ecological habitat tolerance, the rate of mass production and fecundity and their compatibility with the integrated use of selective insecticides.

STATUS

Completed.

OTHER DATA

Grantee : Dr Hyo-Sok Yu
Institution : Division of Medical Entomology
National Institute of Health
Seoul
Country : Republic of Korea
SUSCEPTIBILITY SPECTRA AND RESISTANCE SURVEILLANCE
OF COMMONLY ENCOUNTERED MOSQUITOS TO ROUTINE
INSECTICIDES IN Metro Manila

OBJECTIVES

1. To determine the susceptibility profile of Aedes aegypti and
Ae. poicillius to organophosphorous compounds.

2. To determine differences in susceptibility of Ae. aegypti in
different locations of Metropolitan Manila.

FINDINGS

Preliminary analysis indicate that larvae of Culex fatigus and
Ae. albopictus collected from all localities are resistant to HCH/dieldin.

Ae. albopictus larvae collected from Malate, Pandacan, Malabon,
Bulacan, Parañaque and Paco are also resistant to DDT.

Adult male and female Ae. albopictus collected from Guadalupe, Paco
and Malate indicate resistance to DDT.

CONCLUSION

Further statistical analysis to permit interpretation of the data
collected need be done.

STATUS

Completed.

OTHER DATA

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<th>Grantee</th>
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STUDIES ON COMPETENCE OF AEDES SPP. IN FIJI AS VECTORS OF DENGUE VIRUSES

OBJECTIVES

1. To obtain information on the relative efficiency as dengue vectors of *Aedes aegypti*, *Ae. polynesiensis* and *Ae. pseudoscutellaris* with representative strains of all dengue types.

2. To study variations in vector competence of mosquitoes of 1 species from different parts of Fiji Is. with a single virus strain.

3. To attempt to decide whether *Ae. vigilax* is capable of transmitting dengue.

FINDINGS

1. *Ae. aegypti*, *Ae. polynesiensis* and *Ae. pseudoscutellaris* were able to transfer types 1 and 2 virus by feeding on infected blood between 9-21 after feeding.

2. All 3 types of Fiji stegomyias are capable of transmitting dengue 1, 2 and 4 but *Ae. aegypti* has proved most efficient of all.

3. *Ae. polynesiensis* can transmit type 3 virus but with so low transmission rate that no weight can be put on the negative results with other species. Types 1 and 3 virus are more difficult than types 2 and 4 to transmit.

CONCLUSION

*Ae. aegypti* is the most efficient and *Ae. polynesiensis* and *Ae. pseudoscutellaris* are potential vectors of dengue viruses in the South Pacific.

STATUS

Completed.

OTHER DATA

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<td>Wellcome Virus Laboratory Tamavua Hospital Suva</td>
</tr>
<tr>
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A STUDY OF THE EFFECTIVENESS OF COMMUNITY-BASED HEALTH EDUCATION PROGRAMME IN Aedes Aegypti Larval Control

OBJECTIVES

1. To determine the effectiveness of a community-based health education programme in creating awareness and in motivating people to participate in controlling the mosquito vectors of Dengue Haemorrhagic Fever (DHF).

1.1 Assess people's perceptions, attitudes, beliefs and practices with regard to DHF.

1.2 Compare mosquito population in communities with and without any health education programme.

1.3 Identify the socio-psychological as well as cultural factors which determine the acceptance of recommended health measures.

1.4 Determine whether the families who have experienced DHF cases are likely to adopt the recommended health measures than those who have not.

FINDINGS

Many areas of misunderstanding and misconceptions, regarding the cause, transmission, mosquito habitats, seriousness of DHF communication media and leadership patterns in the country were revealed. Lack of consciousness that they are members of the community who interact and directly influence each other's way of life and health and that their interest are limited to their own families when health or other problems are concerned were not uncommon.

Based on the above findings, a health education intervention programme which include the utilization of existing barangay organizations, organization of local committees, the preparation and utilization of posters, slides, flip charts, pamphlets and other teaching aids, the use of mass media, - radio, television, the press, posters and related literature, etc. was developed and implemented. Concentration was given on simple procedures as changing water in flower vases and large water containers twice a week, cover tightly water storage drums and jars, scrub sides of water containers twice a week, discard empty cans, bottles, old tins weekly.
CONCLUSION

An evaluation of the intervention programme indicates that more people have become aware of DHF and the simple steps they can take to reduce the risk of contracting the disease.

STATUS

Completed.

OTHER DATA

Grantee : Ms Lina Guadiz
Institute : Institute of Public Health
           University of the Philippines
           Manila
Country : Philippines
COMPETENCE OF ROSS RIVER VECTORS IN THE SOUTH PACIFIC

OBJECTIVES

1. To study the competence of different vectors in the South Pacific in the transmission of Ross River virus (RR).

2. To draw up a control strategy in case of an epidemic.

FINDINGS

Progress reports indicate

1. *Aedes vigilax*. From preliminary evidence, transovarian transmission may be a survival method available for RR virus. If this is confirmed by further oral studies, it will be the first Alpha virus known to be so transmitted.

2. *Aedes (Halaedes) australis*. Data collected suggest that Tasmanian *Ae. australis* are not vectors.

3. Tongan mosquitos. In general, Tongan culicides were poorly susceptible to the two different RR pools used.

4. Western Samoan mosquitos. From October-November 1982, RR was fed orally to *Ae. polynesiensis, Ae. samoanus, Ae. aegypti, Cx. sitiens* and a few *oceanius* and *Cx. quinquefasciatus*. Transmission was determined from *Cx. sitiens* and *Ae. aegypti*. Data will be compared with that of other localities.

CONCLUSION

In progress.

STATUS

In progress.

OTHER DATA

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OBJECTIVES

1. To determine the species, composition, occurrence and distribution of medically important mosquitoes and rat fleas in ports and airports.

2. To survey the *Aedes aegypti* index within the 400-meter radius flight line of airports and with the environs of seaports.

FINDINGS

In progress.

STATUS

In progress.

OTHER DATA

Grantee : Ms. Celia Realon

Institution : Bureau of Quarantine
               Ministry of Health
               Port Area, Manila

Country : Philippines
LABORATORY REARING OF *TOXORHYNCHITES SPLENDENS*
FOR DETECTING DENGUE VIRUSES

OBJECTIVES

1. To maintain the *Toxorhynchites splendens* colony and to supply other laboratories in the Region with living specimens in order to establish colonies for dengue virus isolations.

2. To establish other species of *Toxorhynchites* mosquitos for comparison in regard to dengue virus sensitivity.

FINDINGS

1. Eggs of *T. splendens* have been supplied to six countries at their request.

2. The use of *T. splendens* for detecting dengue virus is still being perfected, especially its survival rate after inoculation with suspected human sera and their susceptibility to the four dengue viruses. The survival rate has improved tremendously but the question of susceptibility is still being investigated since some specimens inoculated with known infection produce negative fluorescent antibody test.

3. *T. splendens* from Bangkok, Burma and Dr Rosen are being colonized for comparative studies.

4. Other *Toxorhynchites* such as *T. metallicus* and *T. funestus* are being collected within the country.

5. Isozyme studies being carried out indicate presence of multiple phosphoglucomutase alleles. The most frequent allele is that controlling a phenotype with an intermediate electrophoretic mobility.

6. The use of genus *T. splendens* in the maintenance of human and non-human filarial worms is being carried out. Microinoculation of *T. splendens* could be useful for production of infective larvae and culture of *Brugia malayi* and *B. pahangi*.

7. A new technique developed by Cheong is using ovitraps for field collection has proven to be very successful.
CONCLUSION

The rearing of Toxorhynchites has been a useful training tool for numerous WHO fellows and students. The Toxorhynchites has also been used for several investigations including the detection of dengue viruses, genetics and the production of infective filaria larvae.

STATUS

Completed.

OTHER DATA

Grantee   :  Mr Cheong Weng Hooi
Institution:  Division of Medical Entomology
             Institute for Medical Research
             Kuala Lumpur
Country    :  Malaysia
COLONIZATION AND LABORATORY ECONOMICS
OF MALAYSIAN SPECIES OF MANSONIA

OBJECTIVES

1. To breed and colonize Mansonia uniformis, M. bonneaeldives, M. annulata, M. indiana and Coquillettidia crassipens in the laboratory.

2. To provide a continuous source of material for transmission studies.

3. To test aspects of their bionomics in the laboratory.

FINDINGS/CONCLUSION

Better all around yields are being obtained in the outdoor insectary. This is mainly because of the shorter life cycle at near outdoor climatic conditions decreasing the mortality of the immature stages. Better all around yields are also obtained in cultures with paper as attachment hosts for the larvae as compared with aquatic plants. The best yields of adults have been for Ma. uniformis. Fifty-one point two per cent pupation and 34.1% emergence were obtained in guinea-pig dung medium/paper cultures in the outdoor insectary. The liver yeast medium/paper cultures produced 27.2% emergence. The indoor insectary cultures of liver yeast medium/paper also produced a satisfactory 28.9% emergence. The new strain of Ma. uniformis is now in the 14th generation. The best yields of Ma. bonneae, 23% emergence, was also in guinea-pig dung infusion/paper cultures in the outdoor insectary. However, rigorous tests with this species in the indoor insectary with liver yeast infusion/paper combination produced an average yield of 21.4%. Ma. bonneae is colonized for the first time and is now in the 9th generation. Tests with Ma. dives have been few. The main difficulty has been mating of adults under laboratory conditions. It appears that Ma. dives is eurygamic. The yields of this species have been lower than for Ma. bonneae. Mating trials of this species are being carried out. Colonization of Ma. indiana has proved more difficult with lower yields. The best results so far have been with guinea-pig dung medium/paper cultures in outdoor insectary producing 21.6% emergence. This species is now in the 9th generation. Coquillettidia crassipens has been successfully cultured only recently and is now only in its F2 generation. Here again guinea-pig dung/paper cultures in outdoor insectary yielded the best emergence of 40.9%. Coq. crassipens is also eurygamic. However, successful mating in this species have been achieved by the use of a cage 60 cm x 60 cm x 240 cm.

STATUS

In progress.
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ENVIRONMENTAL HEALTH

OCD/18/79

BIOLOGY AND PRIMARY PRODUCTIVITY OF THE POND FED WITH EFFlUENT FROM BIOGAS DIGESTER

OBJECTIVES

To determine:

1. the existing physical and chemical factors in ponds.

2. the primary productivity of the pond through algae biomass measurement.

3. the plankton community present in the pond.

4. the food habits and nutritional value of Tilapia grown in fishpond fed with the effluent from the biogas digester.

FINDINGS

1. Liquid effluent from biogas digester with mean influent COD of 4800.8 mg/l can have a 96% COD removal in fishponds acting as oxidation ponds with a detention time of 11 days.

2. The mean phytoplankton count is 1.8 cells/ml with predominance of green algae. The mean algae biomass is 442.5 mgC/m³.

3. The mean zooplankton count is 0.66 organism/ml. with predominance of protozoans and rotatorians. Correlation of zooplankton count with physiochemical parameters showed a significant relationship with dissolved oxygen.

4. Tilapia feeds preferentially on phytoplankton and occupies the primary consumer level of the food chain.

5. At a stocking density of 5 fish/m², a productivity of 52.6 kg/ha/day was achieved.

CONCLUSIONS

1. Fishpond fed with effluent from biogas digester can result in a system that is more biologically balanced providing an effluent low in COD and nutrients.
2. Phytoplankton is directly affected by dissolved oxygen. *Tilapia* grown in fishpond and fed with effluent from biogas digester is a good source of protein. The nutritive quality of the *Tilapia* used in this experiment is comparable with that of *Tilapia* obtained from ordinary ponds. The growth observed was similar to the control *Tilapia*.

**STATUS**

Completed.

**OTHER DATA**

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<tr>
<th>Grantee</th>
<th>Mrs E.C. Morales</th>
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<tr>
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