a new approach to cooperative research in the population field

Traduction partielle en français

CICRED 1979

F O R E W O R D

In its endeavour to promote cooperation between research centres in population matters, the CICRED Bureau devised a scheme described in this brochure under the title :

ORGANISATIONAL GUIDELINES FOR INTER-CENTRE COOPERATIVE RESEARCH IN POPULATION MATTERS

It was foreseen that, during the period 1978-1982, four research projects would be launched. The first of these, dealing with "INFANT AND CHILD MORTALITY IN THE THIRD WORLD", has just started and CICRED is pleased to publish herein the report of the initiating meeting. The project's coordinator, Dr. Hugo Behm, prepared a background document which is appended to this brochure.

Jean BOURGEOIS-PICHAT
CICRED Chairman

November 1979

A V A N T - P R O P O S

Le Bureau du CICRED, dans son effort de promotion de la coopération entre les centres de recherche démographique, a dressé un plan exposé dans cette brochure sous le titre :

PRINCIPES DIRECTEURS EN MATIERE DE RECHERCHE COOPERATIVE INTER-CENTRES DANS LE DOMAINE DE LA POPULATION

Il a été prévu que, durant la période 1978-1982, quatre projets de recherche seraient lancés. Le premier, qui porte sur LA MORTALITE INFANTILE ET DE LA PETITE ENFANCE DANS LE TIERS MONDE, vient de commencer. On trouvera publié ci-après le rapport de la réunion de démarrage. Le coordonnateur du projet, le Dr. Hugo Behm, a rédigé un document de base qui est annexé à cette brochure (en anglais seulement).

Jean BOURGEOIS-PICHAT
Président du CICRED

Novembre 1979

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Organisational Guidelines for Inter-centre Cooperative Research in Population Matters

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1. OBJECTIVES

CICRED inter-centre cooperative research projects are aimed at strengthening the collaboration amongst population centres having similar research interests. Such collaboration could improve research productivity by eliminating needless duplication of effort, by speeding up the exchange of experience, by sharing supportive facilities where possible, by providing the environment for a more stimulative and critical intellectual interchange.

Inter-centre cooperative research is not a funding enterprise. It is designed to provide a frame for population centres to pool their own research resources and to mutually assist each other with these resources.

2. THE FOUR INTER-CENTRE COOPERATIVE RESEARCH PROJECTS FOR THE PERIOD 1978-1982

The four projects to be implemented during 1978-1982 are :

(i) Infant and childhood mortality in the Third World : determinants, fertility-related aspects, prospective trends, policy implications

The initiating meeting of this project was held from 2nd to 6th September, 1979, in Chapel Hill, North Carolina (USA) with the Carolina Population Center acting as host centre.

(ii) Current methodological aspects and specific issues of the demography of the family

The initiating meeting of this project will be held from 26th to 29th November, 1979, in Paris (France) with Institut national d'études démographiques (INED) acting as host centre.

(iii) Problems of assessing causes and impacts of international migration upon the Third World development

The initiating meeting of this project will be held in Nedlands (a suburb of Perth in Australia) at the University of Western Australia from 19th to 23rd November, 1980.

(iv) Integration of population variables in the socio-economic planning process

The initiating meeting of this project will, it is hoped, be held in Spring 1980 in Yugoslavia.

3. THE TIMETABLE OF EACH PROJECT

The following timetable is foreseen for implementing each project :

(i) The CICRED Bureau will appoint a Coordinator who will be in charge of preparing, after wide consultations, a research plan;

(ii) A four-day initiating meeting will be convened in order to discuss, amend and approve the research plan and its implementation stages; the initiating meeting will be managed by the Coordinator, assisted by one or two moderators; it will be attended by delegates of participating population centres which have previously agreed to commit to the project during two years a research worker (or the full-time equivalent of a research worker) and the research facilities required;

(iii) After the initiating meeting, each participating centre will carry out its national share of work; twelve months after the initiating meeting, each participating centre will send to the CICRED Secretariat an interim report; twenty months after the initiating meeting, final national reports are to be sent to the CICRED Secretariat;

(iv) On the basis of national reports, the Coordinator will draft a consolidated global report which will be discussed and approved at a conclusive meeting, to be convened approximately two years after the initiating meeting;

(v) Publication will take place after the conclusive meeting.

4. THE PARTICIPATING CENTRES

The participating centres in each collaborative project are all the centres which have agreed to commit to the project during two years a research worker (or his equivalent full-time) whether or not they are able to send a delegate to the initiating meeting. Participating centres which are not able to send a delegate to the initiating meeting are fully involved in the enterprise by :

(i) communicating with the Coordinator and assisting him by mail in the preparation of the research plan before the initiating meeting takes place;

(ii) being regularly informed about the progress of the enterprise by the Coordinator and the CICRED Secretariat.

5. THE INITIATING MEETING

The initiating meeting is attended by participating centres at their own travel expenses. Accommodation, meals and meeting facilities are provided free of charge by the host centre. CICRED takes care of the expenses incurred by simultaneous interpretation (from English to French and vice versa), those of the Coordinator and, if necessary, of the two moderators.

6. THE RESEARCH ITSELF

(i) The research plan of each project is composed of two parts. The Core Part is carried out by all the participating centres in the project. The Free Part has various modules, each of which is carried out by one or several centres at their national convenience.

(ii) In the design and implementation of each research project, emphasis is placed on data analysis and/or data processing, rather than data collection. Nevertheless, each participating centre will decide upon its work in accordance with national research conditions.

(iii) During the research period, close relationships will be maintained between the Coordinator and each participating centre, through the assistance of the CICRED Secretariat. It is firmly hoped that participating centres will mutually assist each other by the exchange of experience and intermediate findings or even by sharing research facilities. It is hoped that, progressively, each research project will generate an efficient network of population centres having similar research interests which will enhance the research work of each one.

CICRED Inter-centre Cooperative Research Programme

INFANT AND CHILD MORTALITY IN THE THIRD WORLD

Proceedings of the Initiating Meeting

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Carolina Population Center
University of North Carolina at Chapel Hill
Chapel Hill, North Carolina 27514
United States of America

September 3rd-6th, 1979

SYNTHESIS REPORT

Introduction and Background

1. The Committee for International Cooperation in National Research in Demography (CICRED) is currently engaged in strengthening the cooperative efforts among population centres having similar research interests. Such cooperation will eliminate duplication of effort, speed up the exchange of experience, share supportive facilities, as well as provide the conditions for more stimulating and intellectual exchange.

In response to an earlier communication from CICRED, a number of demographic centres agreed to participate in cooperative research on infant and child mortality in the Third World. A meeting of the representatives of such centres was convened by CICRED from 3rd to 6th September, 1979, at the Population Centre of the University of North Carolina, Chapel Hill (USA).

Dr. Jack Eblen of the World Health Organization, and Dr. Abdel Omran of the Department of Epidemiology, University of North Carolina, served as moderators for the general plenary sessions. Dr. Hugo Behm, General Coordinator of the Research Project, prepared a basic document for the discussion. The participants divided into three groups according to their specific interests:

Group 1: levels and trends of mortality and differentials in mortality
Group 2: determinants of mortality
Group 3: interactions between fertility and mortality

Objectives

2. The overall purpose of the research programme is to pool together the experience of the various centres aiming to study the following issues:

(a) identify problems and suggest improvements in data collection, methods of estimation, analysis, and in international comparisons of research findings, in the field of infant and child mortality in the Third World;

(b) study and compare on an international basis the levels, trends and main differentials in infant and child mortality in the Third World countries;

(c) investigate the mutual relationships between fertility behaviour and child mortality experience;

(d) attempt to explain the determinants of the infant and child mortality transition in countries of the Third World and derive the policy implications.

Organisation

3. It was agreed that, on the basis of available materials and research interests, the representatives of the centres will form the following working groups:

(1) levels, trends and differentials based on retrospective data (non-longitudinal surveys and census);

(2) levels, trends and differentials using prospective data (vital statistics and longitudinal surveys);

(3) determinants of infant and child mortality using all available material;

(4) inter-relationships between infant and child mortality and fertility;

(5) infant and child mortality studies based on World Fertility Survey data.

In order to avoid exclusions of the WFS in the analysis of other groups, group 5 will keep a close collaboration with them.

4. Each group should discuss problems concerning:

(a) documentation of questionnaire procedure, personnel selection and training, field operations and supervision;

(b) documentation of pitfalls, failures of procedures and bias, as well as appropriate questions and procedures;

(c) evaluation of estimation procedures hopefully using multiple sources and internal consistency checks;

(d) the cost of various procedures and resource constraints in terms of personnel and funds.

5. Each participating centre will determine, on the basis of its available material and its interests, which group(s) it wishes to participate in.

The participating centre will designate an active researcher responsible for carrying out each category of research undertaken.

Each centre will absorb all costs of its research at the local level. The participating centre will not be responsible for any expenses related to technical assistance in the form of consultancy from other participating centres or any other sources approved by CICRED.

6. Each group will have a specific coordinator with the following functions :

-communications

(a) establish schedule

(b) maintain on-going correspondence among centres

(c) ensure that scheduled reports are completed

(d) collection of reports from centres

(e) maintain communication with the other specific coordinators, with the general coordinator and with CICRED.

-technical

(a) suggestions to individual centres regarding variables studied, analysis, etc., other consultations

(b) preparation of final reports to CICRED in collaboration with participating centres.

It is emphasized that each specific coordinator will maintain a reciprocal, on-going relationship with the centres and ensure that communications are maintained between centres.

7. A technical meeting between the participating centres in each group may need to be convened, at some time prior to the 1981 CICRED meeting. The need for such a meeting will be decided after mutual consultations between CICRED, the participating centres, the specific coordinator(s) and the general coordinator. Thus far, there is no funding allocated for such a meeting.

8. The final report will be discussed at a meeting of all participating centres of CICRED in 1981.

9. The following distribution of coordinating centres has been approved :

(1) Levels, trends and differentials based on retrospective surveys and census data	International Population Center, Cornell University, USA
(2) Levels, trends and differentials using vital statistics and prospective surveys	Institut de Formation et de Recherche Démographiques. Yaoundé, Cameroon.
(3) Determinants of infant and child mortality	Centro de Desenvolvimento y Planejamento Regional, Minas Gerais, Brasil
(4) Inter-relations between fertility and infant mortality	Carolina Population Center, Chapel Hill, USA
(5) Infant and child mortality studies based on World Fertility Surveys	Office de la recherche scientifique et technique outre-mer. Paris.

Time schedule

The following general time schedule -to be adapted to the possibilities of each group- was adopted:

October 1979

Circulation of CICRED report to individual centres, with an invitation letter to participate in the programme.

December 1979

Expect replies from centres to CICRED indicating which group they are planning to participate in. CICRED will forward letters to the specific coordinators and inform centres about names and locations of centres.

January 1980

The specific coordinators will communicate with participating centres concerning work programme details and other information (see specific coordinator functions).

July 1980

First progress report from centres to the specific coordinator(s).

January 1981

Second progress report from centres to the specific coordinator(s).

* 1981

Final report from centres to the specific coordinator(s).

July 1981

Final report to CICRED from the specific coordinator(s).

October 1981

Concluding meeting of participating Centres.

1982

Publication by CICRED of Final Report and research results.

(*) Decision based on work plan.

10. As explained in §1, the participants divided into three groups according to their special interests. Each group produced a specific report and it is on the basis of these three specific reports that the SYNTHESIS REPORT, formed by §1 to §10 of this document, has been adopted. It should be considered as a general guide. In fact, each of the three specific groups had special problems requiring special solutions. The remaining part of this document reproduces the three specific reports.

Composition of the three specific groups referred to in §1

Group 1 : Level, trends and differentials in infant and child mortality

- Basilio B. Aromin
- Roger Avery
- Samuel Baum
- Carlos da Costa Carvalho
- Alain Mouchiroud
- Mohanlal Srivastava

Group 2 : Determinants of infant and child mortality

- Hugo Behm
- Magdalena Cabaraban
- Pierre Cantrelle
- Berta Castillo
- Dennis Chao
- Irma Garcia
- Larry Heligman
- Sethuramiah Rao
- Diana Sawyer
- Dominique Tabutin

Group 3 : Interaction of fertility and child mortality

- Abdelmegid Farrag
- Atef Khalifa
- Mr. Krishnamoorthy
- Dong-Woo Lee
- Abdel Omran
- Chirayath Suchindran
- Ingrid Swenson
- Carol Vlassoff

SPECIFIC REPORT OF GROUP N°. 1

"Levels, Trends and Differentials in Infant and Child Mortality"

11. We have two different kinds of recommendations :

(a) recommendations for cooperative activities for participating centres during the first year;

(b) recommendations for activities of constellations of centres during the second year.

These recommendations are classified into two broad categories : (I) Data collection; (II) Differentials.

I. Data Collection

12. Each participating centre, during the first six to nine months, should send a report to a central agency concerning :

(a) documentation of questionnaire, procedure, personnel selection and training, field operation and supervision;

(b) documentation of pitfalls, failures of procedures and bias, as well as appropriate questions and procedures;

(c) evaluation of estimation procedures hopefully using multiple sources and internal consistency checks;

(d) the cost of various procedures or resource constraints in terms of personnel and funds.

The US Bureau of the Census has volunteered to serve as a central agency. Each report would concern only those data sources used by the centres. Each report would be classified according to the procedures used in order to facilitate the distribution among the centres needing this information.

13. (a) During the second year, the participating centres would prepare a joint report outlining commonly observed features and suggesting improvements for data collection and methods of estimation for infant and child mortality;

(b) It may be appropriate that two reports be written : one would concern retrospective methods such as surveys and censuses and the second would concern prospective data collection procedures such as vital statistics and longitudinal surveys.

II. Differentials

14. During the first year, each participating centre would be asked to prepare a small group of common tables of differentials in infant and child mortality. Each centre would provide only those tables available on the basis of existing data. Standard tables are given in annexe.

15. Each participating centre should be willing to communicate with other centres concerning :

(a) variables that are found to have significant differentials in infant and child mortality or those that are found not to be related to infant and child mortality;

(b) definitions of variables used and methods of estimation;

(c) possible bias ;

(d) the list of variables should be more extensive than included in §14 including community variables if possible;

(e) the trends in differentials, if available;

(f) in explaining trends, the status of development activities selected in the various regions of the country should be reported : these factors might be considered - (i) health clinics/public health; (ii) education facilities; (iii) economic development; (iv) public sanitation; (v) communication and transportation.

16. During the second year, two constellations of centres should be formed to study the differentials.

17. One constellation would include only centres having detailed history or prospective surveys. This constellation would deal with age and sex pattern of infant and child mortality with biological, nutrition and cause of death components.

18. Centres having access mainly to censuses and national retrospective surveys should form another constellation. This group would study differentials in child mortality of geographic, social and economic variables.

19. Each constellation should meet during the second year to coordinate further research and prepare reports. During this time, models of the determinants of infant and child mortality could be developed (see the report of Group 2).

20. Leaders for each constellation should be selected during the next six months.

21. Funding for meetings and publication preparations for each constellation should be sought during the first year.

22. Having in hand the report of Group 1, the final plenary session decided to create, from the start, the two constellations of centres initially foreseen only during the second year (see §16). They are designated as Working Groups 1 and 2 in §3.

(1) Working Group on levels, trends and differentials based on retrospective surveys and certain data. Coordinator : Roger Avery.

(2) Working Group on levels, trends and differentials using vital statistics and prospective data. Coordinator : Julien Amegandjin (or his representative, to be designated).

The two working groups will work in close collaboration both on data collection and differentials. The schedule of work is as follows.

I. Data collection

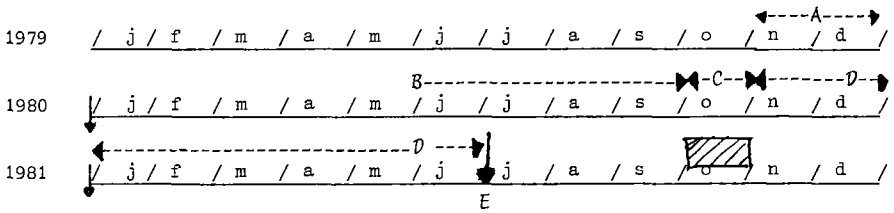
During the first year, all participating centres in both working groups send the documentation referred to in §12 to the US Bureau of the Census (c/o Samuel Baum). The US Bureau of the Census disseminates the documentation to all participating centres.

During the second year, working groups 1 and 2 write the two reports referred to in §13 under the direction of their respective coordinators.

II. Differentials

During the first year, in each working group, participating centres prepare the tables referred to in §14 and §15 and send these tables to their respective coordinators. At the beginning of the fourth trimester of the first year, the two working groups, or at least the two coordinators, concert together (hopefully, through a meeting) to propose further activities on differentials during the second year.

23. The proposed time scheduled for working groups 1 and 2 is as follows.



(A) The participating centres make known their plan to collaborate. They indicate if they want to collaborate with working group 1 and/or 2.

(B) (i) in both working groups 1 and 2, all participating centres send the documentation referred to in §12 to the US Bureau of the Census.

(ii) participating centres prepare the tables referred in §14 and §15 and send these tables to their respective coordinators.

(C) The two working groups (or at least their coordinators) concert together to decide on further activities on differentials.

(D) (i) working groups 1 and 2 write the two reports referred to in §13 under the direction of their respective coordinators.

(ii) working groups 1 and 2 implement the decisions taken in C.

(E) The reports of working groups 1 and 2 are sent to CICRED.

Period in which the concluding meeting will be organised.

Annexe to the report of Group 1

Differentials in Child Mortality : Standard Tables

24. Suggested tables for all centres : when data are available, the Brass techniques should be used. The child survivorship of women aged 20-24, 25-29 and 30-34 should be used. Thus, for each cell in the final tables, there should be three figures, one for women 20-24, one for women 25-29 and one for women 30-34. The use of Brass techniques does not preclude the use of other techniques.

The tables are as follows.

TABLE 1 :

Urban	Rural	Total	Education of mothers :
x	x	x	None
x	x	x	Primary (1-5)
x	x	x	Primary 6 (completed)
x	x	x	More than primary
x	x	x	Totals

TABLE 2 : Geographic division

1 National capital	x
2 Urban region 1	x
3 Rural region 1	x
4 Urban region 2	x
5 Rural region 2	x

More than two regions may be used if appropriate. The regions should be selected for geographic or economic homogeneity. A cross tabulation by education is a possible extension.

TABLE 3 : Ethnic groups, if available

TABLE 4 : Employment status of mother

1 Not in Labour force - housewife	x
2 Not in Labour force - student	x
3 Professional /Managerial	x
4 Service worker	x
5 Other employed	x

1 and 2 may be combined. If a separate listing for farmers is possible, it should be used.

TABLE 5 : (if the head of household can be linked to the mother)

Occupation of household head :

1. Extractive industry - farming, fishing, lumbering
2. Blue collar worker
3. Professional/managerial occupation
4. Other white collar
5. Service workers
6. Other occupations

TABLE 6 - 8 : (if information on the housing of the mother is available)

TABLE 6 : Status of house and/or condition of house, either :

1. Permanent	X	1. Good	X
2. Semi-permanent	X	2. Fair	X
3. Temporary	X	3. Poor	X

TABLE 7 : Sanitation

1. None	X
2. Latrine	X
3. Sewer/septic tank	X

TABLE 8 : Water supply

1. None piped	X
2. Piped water or well for exclusive use of household	X

Note of caution

For tables 4 and 5, the International Standard Classification of Occupations (ISC), revised edition, 1968 (ILO, Geneva, 1969).

For Table 4, item (3) is designated in ISC as :

- "Professional, technical and related workers" (n°. 0/1 of ISC), "Administrative and managerial workers" (n°. 2), "Clerical and related workers" (n°. 3).

Item (5) is designated in ISC as :

- "Service workers" (n°. 5 of ISC).

For Table 5, item (1) is designated in ISC as :

- "Agricultural, animal husbandry and forestry workers, fishermen and hunters" (n°. 6 of ISC).

Item (2) is designated as "Production and related workers, transport equipment operators and labourers" (n°.s 7/8/9 of ISC). Item (3) is designated as "Professional, technical and related workers" (n°. 0/1 of ISC), "Administrative and managerial workers" (n°. 2 of ISC), "Clerical and related workers" (n°. 3 of ISC). Item (4) is designated as "Sales workers" (n°. 4 of ISC). Item (5) is designated as "Service workers" (n°. 5 of ISC). For more details, see the United Nations Demographic Yearbook, 1972, pages 36-37 (United Nations Publication, sales number E/F.73.XIII.1).

SPECIFIC REPORT OF GROUP N°. 2

"Determinants of Infant and Child Mortality"

25. The general purpose is to explain the mechanisms of the infant and child mortality transition in some countries of the Third World and to derive policy implications.

26. A framework of the determinants should be useful for the development of national studies. (The group has prepared a sketch of what such a framework could be. It is, however, conscious of the deficiencies of its model and insists on its purely illustrative purpose. But this model shows some of the variables which could be included in a study of the determinants of infant and child mortality and may be of some help for the participating centres. This is the reason why it is annexed to this report.)

27. Participating centres may include analysis of only some of the variables and only part of the general framework, for example the role of public health programmes. Variables incorporated into any analysis have different meanings in different social, economic, cultural, political, etc., contexts. This could be true not only among countries, but also within. Centres should include the "context" of each country within their analysis. These contextual variables may be qualitative or quantitative. The participating centres will distribute to the coordinator a list of contextual variables during the early months of the project (see §35 below).

28. There must be flexibility among centres in their studies. The data are of different availability and quality. A country study may have to include specific factors or variables because of a special situation. A country may wish to center on a special variable and its relationship to morbidity and mortality because of its special importance as a mortality determinant in that country.

29. Some centres will make studies on the individual or household level, others on a more aggregate level.

30. For comparative purposes, we suggest that each centre conduct, if possible, a macro-analysis including only a minimum number of variables that will be in common with all centres and, in addition, each centre, to the extent it is possible, will conduct fuller macro-analysis and/or micro-analysis whether it be on the national or small area level. Group 1 has provided a list of variables which may be of interest.

31. A sub-group[1] is created for a special type of data, the World Fertility Survey data, because they constitute a homogeneous, comparable set of surveys. A specific coordinator has been designated at ORSTOM in Paris who will work in close collaboration with the coordinator responsible for the whole group n°.2, mentioned later in the document (§32). In view of the content of the data of this sub-group, particular relations will be established with the other working groups. A test of comparative analysis would be done on three or four countries before extension to others. The time schedule for the activities of this sub-group follows the work plan here attached (see §32 to §39). A special document should be prepared for the World Fertility Conference in London, in July 1980.

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1. designated as the working group 5 in §3

The work plan will develop as follows.

32. As soon as possible, a coordinator will be designated for the group[1]. A consultation group will also be developed early to provide the participating centres with technical assistance and, at the end of the project, to help the coordinator carry out the comparative study. A consultation group should also be formed to study the special methodological problems of "determinants analysis".

33. Within two months, a list of participating centres and their planned levels of analysis and cooperation will be communicated to the coordinator.

34. Within six months, each participating centre should send a report to the other participating centres and to the coordinator. This report will include the subject of the research and design of analysis including variables to be considered (both qualitative and quantitative) and method of data collection and estimation; in addition, if the project is already on-going, a status report and any substantive or methodological reports already completed. Also, the items listed in §24 of the report of Group 1 should be included.

35. Within six months, a list of suggested contextual background information will be provided by the participating centres to the coordinator.

36. Within twelve months, a progress report should be submitted to the coordinator. This report will include not only preliminary substantive results, but also a description of successes, failures, problems, etc., with different methodologies, proceedings and the like.

37. Within eighteen months, a final centre report will be submitted to the coordinator. In addition to the "collected variables", the final report should be enriched by contextual variables to allow the research to be understood in a socio-economic context.

38. In the last six months, the coordinaotr (with help from the consultation groups referred to in §32) will perform a comparative analysis based on the individual centre reports. As some of the centre reports will be household level analysis (micro-analysis) and others regional level analysis (macro-analysis), the coordinator may have to prepare two presentations. The comparative report may include not only comparison between countries at national level, but also comparison of sub-areas of the different studies, as of the rural portions of different individual centre reports.

39. The final comparative report synthesising all the national studies will be examined at the concluding meeting of the project.

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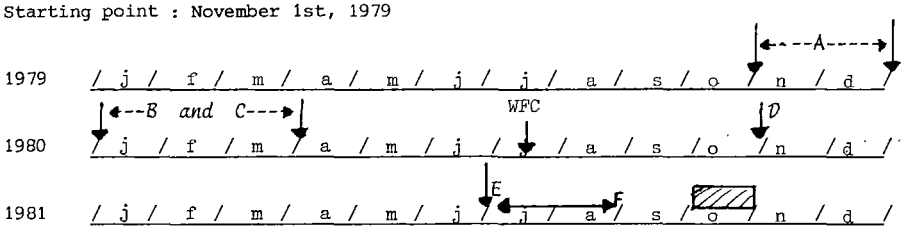
1. The group is designated as working group 3 in §3. The coordinator was appointed in Chapel Hill at the end of the meeting : Mrs. Diana Oya Sawyer.

Annex 1 to the report of Group 2

40. Diagram summarizing the time schedule of Group 2

Starting point : November 1st, 1979



(A) (a) The participating centres make known their plan to collaborate.
(b) A consultation group is formed to provide technical assistance and help the coordinator in phase (F).
(c) A consultation group is formed to deal with special methodological problems.

(B) Information given by the centres on the research going on (more precise information than in (A)(a).)

(C) Contextual background information is sent by the participating centres to the coordinator.

(D) Intermediary progress report from the centres to the coordinator.

(E) Final report from the centres to the coordinator.

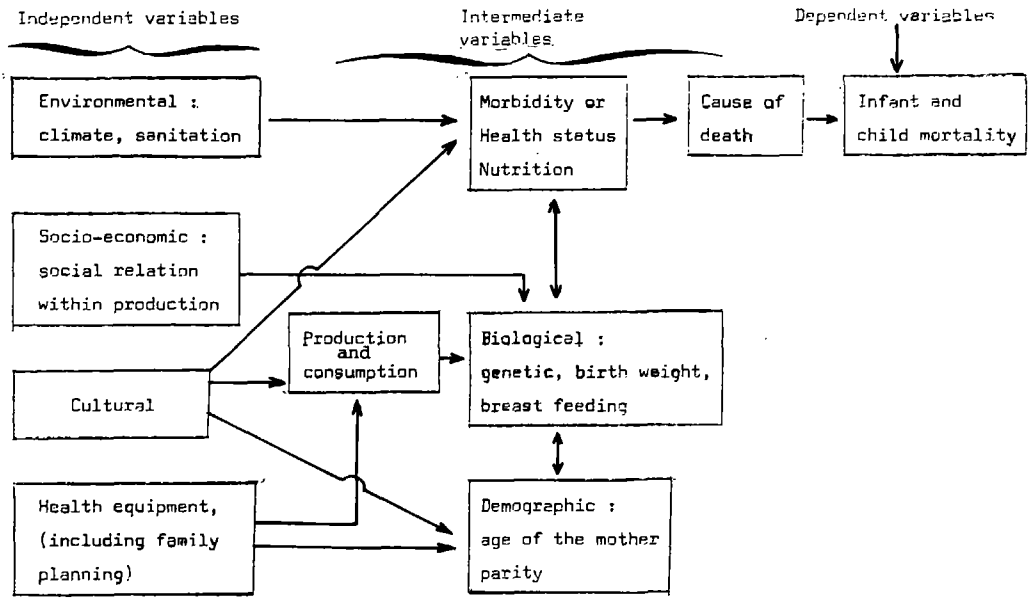
(F) Comparative report prepared by the coordinator.

WFC World Fertility Conference.

Period in which the concluding meeting will be organised.

Annexe 2 to the report of Group 2

41. Tentative sketched presentation of a framework of determinants of infant and child mortality



SPECIFIC REPORT OF GROUP N°. 3

"Interaction of Fertility and Child Mortality"

A. Introduction and background

42. Historically, child loss has been considered responsible for high fertility in many countries. There are three mechanisms to explain the association between child loss and higher fertility.

(a) the biological mechanism : the post-partum period is prolonged due to breastfeeding, and hence child survival delays the subsequent pregnancy.

(b) the compensatory or replacement mechanism : parents who lose a child will try to compensate for that loss by having additional children;

(c) the insurance mechanism : parents who fear, perceive or anticipate the loss of a child may wish to insure a certain family size by having additional children.

B. Scope

43. The unit of analysis is the nuclear family defined as parents and children. Fertility is synonymous with family formation (i.e., birth order, birth interval, maternal age, family size, pregnancy loss).

C. Objectives

44. The overall objective of the proposed studies is to investigate the mutual and reciprocal relationships between fertility behaviour and child mortality experience.

Specifically, the following aims may be developed :

(a) determine the impact of child loss on fertility levels and trends;

(b) determine the impact of fertility behaviour on child mortality and the acceptance of family planning for health benefits.

D. Research tasks

45. A given centre may opt to conduct at least one of the above mentioned research studies. It is, of course, desirable for a single centre to conduct both in order to more clearly establish the reciprocal relationship between child mortality and fertility in a given population.

46. The following variables are suggested as relevant in each of the two studies :

(a) fertility (as an independent variable) affecting child mortality

The birth rate is not a sufficient index of fertility. The following variables are therefore suggested as operationalised variables to measure fertility :

- birth order of the child parity of mother
- maternal age at the birth of child under study
- birth interval
- family size (number of living children by sex)
- history of pregnancies-child losses in the past

(b) mortality (as a dependent variable) may be measured in terms of :

- actual child death
- anticipated or perceived child loss
- family perception of handicapped child as a child loss

(c) child loss (as an independent variable) affecting fertility

The child survival hypothesis will be tested. Child loss may be measured in terms of the following variables :

- age at death
- sex of child
- birth order of deceased child
- accumulated child loss
- perceived probability of child loss

In all cases, the control variables are cultural, demographic and socio-economic characteristics.

(d) fertility (as a dependent variable) may be measured in terms of :

- completed fertility (and/or pregnancy history)
- KAP changes/contraception
- subsequent fertility behaviour as measured by subsequent interval after child loss

E. Data requirements and appropriate methodologies

47. Some data may exist already in some countries to enable the undertaking of the above study(ies). Some may require new sample surveys. The following list may help to identify some data needs and gaps.

List of CORE variables

I. Survey

I.1 Pregnancy history
I.2 Measurement of mortality
I.3 Indicators of child physical and intellectual development
I.4 Birth order of the deceased child
I.5 Completed fertility
I.6 Birth interval after child loss
I.7 Approval and use of contraception by child loss
I.8 Distinction by cultural groups

II. Record linkage

II.1 Birth cohort
II.2 Mortality by cohort
II.3 Causes of death

Birth record information

II.4 Maternal age
II.5 Birth order
II.6 Social class

III. Ecological studies (census use)

Special analysis of census data provided certain questions on fertility are asked in census :

III.1 Marital status
III.2 Number of live births
III.3 Number of living children

F. Plan of action

48. Centres which wish to undertake studies on the reciprocal effects of infant mortality and fertility could express this intent within three months of receiving the report on the outcome of the CICRED meeting. They will form a working group designated as working group 4 in §3.

Centres may choose any of three approaches to such study. These approaches are as follows :

(a) specific surveys especially designed for the purpose
(b) household sample surveys which include fertility and mortality data
(c) census information on fertility and mortality.

49. In order to enable centres to make a conscious commitment to this task, centres will receive a list of variables (see list of CORE variables) relevant to the study. This will enable them to explore the possibilities of obtaining information about these variables under their regular data availability programme (current data collection activities). Otherwise, special surveys, the most appropriate for the purpose, will have to be undertaken, within a certain time span, with reference to a given time period (see tentative time schedule).

A list of these variables will be prepared by the coordinator and attached to the research document which will be addressed to the centres in question.

50. The Carolina Population Center (Dr. Abdel Omran) will serve as a coordinator for the different research projects of the various centres. The coordinator will welcome suggestions of plans of analysis and dummy tables which are of a common nature. In addition, each centre will suggest and present its own specific dummy tables and plans of analyses.

51. A progress report on the survey and/or the analysis of available data will be presented to the coordinator and to CICRED at intervals of six months. A technical meeting may be envisaged to convene some time prior to the meeting of the CICRED Bureau in 1981. The need for such a meeting will have to be decided after mutual consultations between CICRED, the participating centres and the coordinator.

G. Specific functions of project coordinator

The coordinator will serve the following roles :

(a) receive letters of intent from interested centres indicating data available or planned

(b) form a constellation of centres based on their intent and interests demonstrated in letters of intent

(c) definition of CORE variables and suggestions to individual centres regarding variables selected, specific to their centres

(d) receive progress reports

(e) consultation on conduct of study

(f) preparation of final report and communications with CICRED.

For items (c), (e) and (f), it would be very useful to obtain the help of consultants.

52. The tentative time schedule could be as follows :

October 1979	Circulation of CICRED Conference Report to individual centres with a covering letter stating intent of proposed work plan
January 1980	Expect reply from centres indicating if they plan to participate
July 1980	1st progress report from centres to coordinator
January 1981	2nd progress report from centres to coordinator
March 1981	3rd progress report from centres to coordinator. It will be the final report.
April-May 1981	Deadline for the overall final report on projects to be turned in by coordinator to CICRED

H. Recommendations

53. The group recommends that CICRED might wish to :

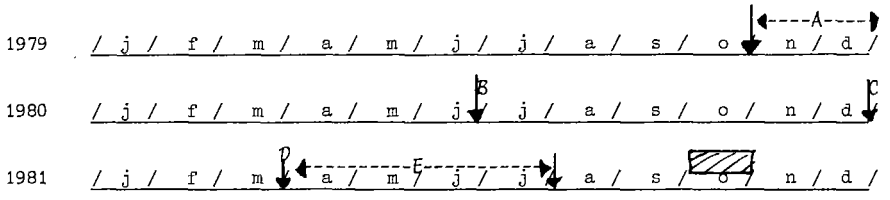
(a) request each member research centre to submit a work plan on that topic (e.g., levels, trends, differentials, interactions, etc.) if the centre is interested;

(b) encourage each centre (financially or otherwise) to explore the possibility of fuller utilisation of data on that subject;

(c) explore with centres that possibility of undertaking Type 1 studies (see §48);

(d) form, independently from the centres, working groups to deal with specific methodological issues and raise the necessary funds for convening these groups at appropriate time intervals. The exact terms of reference for each working group will need to be determined.

54. Diagram summarising the time schedule of Group 3



(A) The centres make known their plan to collaborate

(B) 1st progress report from centres to coordinator

(C) 2nd progress report from centres to coordinator

(D) 3rd and final progress report from centres to coordinator

(E) The coordinator prepares a consolidated report to be considered at the concluding meeting

Period in which the concluding meeting will be organised

55. Names and addresses of coordinators for the working groups referred to in §3 of the report

Overall coordinator : Hugo Behm, Apartado 5249, San José (Costa Rica)

Working Group n°. 1 : Levels, trends and differentials based on retrospective surveys and census data (§3, §22 and §23)

- *Roger Avery, International Population Program, Cornell University, Uris Hall, Ithaca, N.Y. 14753 (USA).*

Working Group n°. 2 : Levels, trends and differentials using vital statistics and prospective data (§3, §22 and §23)

- *Julien Amegandjin, Director, Institut de formation et de recherche démographiques (IFORD), B.P. 1.556, Yaoundé (Cameroon).*

(Mr. Amegandjin will designate one person from the IFORD staff to serve as coordinator.)

In addition, the participating centres in Working Groups 1 and 2 have to communicate (see §12, §22 and §23) documentation to :

- *Samuel Baum, US Bureau of the Census, Scuderi Building, Washington, D.C. 20233 (USA).*

Working Group n°. 3 : Determinants of infant and child mortality using all available material (§3 and §32)

- *Mrs. Diana Oya Sawyer, CEDEPLAR, Universidad Federal de Minas Gerais, Rua Curitiba 832, Belo Horizonte, MG (Brazil).*

Working Group n°. 4 : Interrelationships between infant and child mortality and fertility (§3 and §48)

- *Abdel Omran, Carolina Population Center, University of North Carolina at Chapel Hill, University Square 300 A, Chapel Hill, North Carolina 27514 (USA).*

Working Group n°. 5 : Infant and child mortality studies based on World Fertility Survey data (§3 and §31); (Working Group n°. 5 is, in fact, a sub-group of Working Group n°. 3)

- *Pierre Cantrelle, Office de la recherche scientifique et technique outre-mer, 24 rue Bayard, 75008 Paris (France).*

LIST OF POPULATION RESEARCH CENTRES HAVING EXPRESSED THEIR WILLINGNESS TO COLLABORATE IN THE RESEARCH PLAN ON INFANT AND CHILD MORTALITY IN THE THIRD WORLD.

AFRICA

* - Institut de formation et de recherche démographiques, B.P. 1.556, Yaoundé (Cameroon).

* - Demographic Research Unit, Institute of Statistical Studies and Research, 5 Tharwat Street, Orman, Giza (Egypt).

* - Demographic Unit, University of Liberia, P.O. Box 274, Monrovia (Liberia).

- Département du plan, Institut national de la statistique, B.P. 20, Kinshasa-Gombé (Zaire).

NORTH AMERICA

* - Carolina Population Center, University of North Carolina at Chapel Hill, University Square 300 A, Chapel Hill, North Carolina 27514 (USA).

* - International Population Program, Cornell University, Uris Hall, Ithaca, N.Y. 14853 (USA).

* - Population Studies Center, University of Pennsylvania, 3718 Locust Walk CR, Pennsylvania, Philadelphia 19174 (USA).

LATIN AMERICA

* - CEDEPLAR, Universidad Federal de Minas Gerais, Rua Curitiba 832, Bélo Horizonte, M.G. (Brazil).

* - Departamento de Salud Publica y Medicina Social, Universidad de Chile, Independencia 1027, Casilla 6537, Correo 4, Santiago (Chile).

- Instituto de Desarrollo de la Salud, Apartado de Correo 9082, Zona 9, La Habana (Cuba).

* - Centro de Estudios Economicos y Demograficos, El Colegio de Mexico, Camino al Ajusco num. 20, Mexico 20, D.F. (Mexico).

ASIA

- Population Centre, India Population Project, Ram Sagar Misra Nagar, Lucknow 226 010 (India).

- Demographic Research Centre, Faculty of Science, M.S. University of Baroda, Lakmanya Tilak Road, Baroda 390 002 (India).

- Demographic Research Unit, Jadavpur University, Calcutta 32 (India).

- Centre for Mathematical Studies, Vazhuthacaud, Trivandrum 695 014 (India).

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* *represented at the initiating meeting held at the Carolina Population Center, University of North Carolina at Chapel Hill, North Carolina (USA); September 3rd-6th, 1979*

List of population research centres having expressed their willingness to collaborate in the research plan on infant and child mortality in the Third World : PAGE 2

ASIA *(contd.)*

- Family Planning Communication Action Research Centre, Department of Sociology, University of Kerala, Kariavattom P.O., Trivandrum 695 581 (India).

- Center for Population and Family Planning, Yonsei University, P.O. Box 71, Seoul (Korea).

- Population and Development Studies Center, College of Social Sciences, Seoul National University, Seoul 151 (Korea).

- Social Sciences Research Centre, University of the Punjab, New Campus, Lahore (Pakistan).

- Mindanao Center for Population Studies, Research Institute for Mindanao Culture, Xavier University, The Ateneo, Cagayan de Oro City (Philippines 4801).

EUROPE

- Département de démographie, Université catholique de Louvain, 1 Place Montesquieu, B-1348 Louvain-la-Neuve (Belgium).

- Office de la recherche scientifique et technique outre-mer, 24 rue Bayard, 75008 Paris (France).

- Centro de Estudos Demograficos, Av. Antonio José de Almeida, 5-8°, P-1078 Lisbon (Portugal).

- Centre for Population Studies, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT (U.K.).

Inter-centre Cooperative Research Meeting on Infant and Childhood Mortality in the Third World

List of Participants

(Carolina Population Center, Chapel Hill, North Carolina, U.S.A.)
(September 3rd-6th, 1979)

Participating Centres	Name of the representative
AFRICA	
Demographic Unit, University of Liberia, P.O. Box 274, Monrovia (Liberia) Director : Mr. M.L. Srivastava	Mr. M. L. SRIVASTAVA
Institut de formation et de recherche démographiques, B.P. 1556, Yaoundé (Cameroon) Director : Mr. Julien Amegandjin	Mr. Alain MOUCHIROUD
Demographic Research Unit, Institute of Statistical Studies and Research, 5 Tharwat Street, Giza (Egypt); Director : Mr. Atef M. Khalifa	Mr. Atef M. KHALIFA
NORTH AMERICA	
International Population Program, Cornell University, Uris Hall, Ithaca, N.Y. 14853 (USA) Director : Mr. J. Mayone Stycos	Mr. Roger AVERY
Population Studies Center, University of Pennsylvania, 3718 Locust Walk CR, Pennsylvania, Philadelphia 19174 (USA); Director : Mr. E. van de Walle	Mr. KRISHNAMOORTHY
LATIN AMERICA	
CEDEPLAR, Universidad Federal de Minas Gerais, Rua Curitiba 832, Belo Horizonte, M.G. (Brazil) Director : Mr. José Magno de Carvalho	Ms. Diana Oya SAWYER
Departamento de Salud Publica y Medicina Social, Universidad de Chile, Independencia 1027, Casilla 6537, Correo 4, Santiago (Chile) Director : Mr. Ernesto Medina Lois	Ms. Berta CASTILLO
Centro de Estudios Economicos y Demograficos, El Colegio de Mexico, Camino al Ajusco num. 20, Mexico 20, D.F. (Mexico) Director : Mr. Luis Unikel	Ms. Irma GARCIA
ASIA	
Center for Population and Family Planning, Yonsei University, P.O. Box 71, Seoul (Korea) Director : Mr. Jae-Mo Yang	Mr. Dong-Woo LEE
Mindanao Center for Population Studies, Research Institute for Mindanao Culture, Xavier University, The Ateneo, Cagayan de Oro City (Philippines 4801) Director : Mr. Francis C. Madigan	Ms Magdalena CABARABAN

List of Participants (contd.)

EUROPE

Département de démographie, Université catholique de Louvain, 1 Place Montesquieu, B-1348 Louvain-la-Neuve (Belgium); Director : Mr. Hubert Gérard	Mr. Dominique TABUTIN
Office de la recherche scientifique et technique outre-mer, 24 rue Bayard, 75008 Paris (France) Director : Mr. G. Camus	Mr. Pierre CANTRELLE
Centro de Estudos Demograficos, Av. Antonio José de Almeida, 5-8°, P-1078 Lisbon (Portugal) Director : Mr. J.J. Pais Morais	Mr. Carlos da Costa CARVALHO

OBSERVERS

U.S. Bureau of the Census, Scuderi Building, Washington D.C. 20233 (USA) Director : Mr. Vincent P. Barabba	Mr. Samuel BAUM
Division of Population and Social Affairs, Economic and Social Commission for Asia and the Pacific, United Nations Building, Rajadamnern Avenue, Bangkok 2 (Thailand) Director : Mr. Basilio B. Aromin	Mr. Basilio B. AROMIN
Population Division, United Nations, New York N.Y. 10017 (USA); Director : Mr. Léon Tabah	Mr. Léon TABAH
International Development Research Centre, 60 rue Queen, Ottawa, Ontario (Canada) Director : Mr. Allan Simmons	Ms. Carol VLASSOFF
United Nations Fund for Population Activities, 485 Lexington Avenue, New York N.Y. 10017 (USA) Director : Mr. Rafael Salas	Mr. Sethuramiah RAO
Mr. John D. Durand, former director of the United Nations Population Division, and Professor at the University of Pennsylvania, Sunrise Ridge Road, Spruce Pine, North Carolina 28777 (USA)	Mr. John D. DURAND

COORDINATOR OF THE RESEARCH PROJECT

Apartado 5249, San José (Costa Rica)	Mr. Hugo BEHM

TWO MODERATORS

World Health Organization, CH-1211 Geneva 27 (Switzerland)	Mr. Jack EBLEN
Carolina Population Center, University of North Carolina at Chapel Hill, University Square 300A, Chapel Hill, North Carolina 27514 (USA)	Mr. Abdel OMRAN

List of Participants (contd.)

PARTICIPANTS OF THE CAROLINA POPULATION CENTER

Director	Mr. J. Richard UDRY
Department of Biostatistics :	Mr. Dennis CHAO Mr. Chirayath SUCHINDRAN Mr. Jeremiah SULLIVAN Mr. Steve WILSON
Department of Family Medicine :	Ms. Betty COGSWELL
Department of Nutrition :	Mr. Barry POPKIN
Department of Maternal and Child Health :	Mr. Earl SIEGEL
Department of Health Administration :	Mr. Moye FREYMANN
School of Nursing :	Ms. Ingrid SWENSON

CICRED STAFF :	Mr. Jean BOURGEOIS-PICHAT (Chairman) Mr. BUI DANG HA DOAN (Consultant) Ms. Elisabeth GARLOT (Secretariat) Mrs. Roberta KHODJA (Secretariat) Mr. Abdelmegid FARRAG (member of the CICRED Bureau)

FOUR INTERPRETERS

Principes directeurs en matière de recherche coopérative inter-centres dans le domaine de la population

1. OBJECTIFS

Les projets de recherche coopérative inter-centres du CICRED visent à renforcer la collaboration entre les centres démographiques dont les intérêts en matière de recherche se rejoignent. Une telle collaboration devrait améliorer la productivité de la recherche en évitant la duplication des efforts, en favorisant la comparaison des expériences, en partageant, quand cela est possible, les outils de la recherche et, plus généralement, en permettant de meilleurs échanges intellectuels et critiques.

La recherche coopérative inter-centres n'est pas une entreprise de financement. Sa vocation est de fournir aux centres démographiques un cadre leur permettant de rassembler les ressources disponibles en matière de recherche et de s'entr'aider.

2. LES QUATRE PROJETS DE RECHERCHE COOPERATIVE INTER-CENTRES POUR LA PERIODE 1978-1982

Les quatre projets à réaliser au cours de la période 1978-1982 sont les suivants :

(i) La mortalité infantile et de la petite enfance dans le Tiers Monde : ses facteurs, ses relations avec la fécondité, ses tendances futures, ses implications politiques.

La réunion de démarrage de ce projet s'est tenue du 2 au 6 septembre 1979 à Chapel Hill, North Carolina (E.U.), le centre hôte étant le "Carolina Population Center".

(ii) les aspects méthodologiques et les perspectives spécifiques de la démographie de la famille

La réunion de démarrage de ce projet se tiendra du 26 au 29 novembre 1979 à Paris (France) et le centre hôte sera l'Institut national d'études démographiques.

(iii) les problèmes relatifs à la détermination des causes des migrations internationales et de leurs conséquences pour le développement du Tiers Monde

La réunion de démarrage de ce projet aura lieu à Nedlands (dans la banlieue de Perth en Australie) à l' "University of Western Australia" du 19 au 23 novembre 1980.

(iv) l'intégration des variables démographiques dans le processus de planification

La réunion de démarrage de ce projet pourrait se tenir en Yougoslavie au printemps 1980.

3. CALENDRIER DE CHAQUE PROJET

Pour la réalisation de chaque projet, le calendrier suivant est prévu :

(i) Le Bureau du CICRED désignera un coordonnateur chargé de mettre au point, après de larges consultations, un plan de recherche.

(ii) Une réunion de démarrage de quatre jours sera organisée pour discuter, amender et approuver le plan de recherche, ainsi que ses diverses phases de réalisation. Cette réunion sera dirigée par le coordonnateur assisté d'un ou deux animateurs de la discussion. Pourront y participer les représentants des divers centres démographiques ayant accepté de désigner un chercheur (ou l'équivalent d'un chercheur à plein temps) qui travaillera, pendant deux ans, sur le projet, et de fournir à ce chercheur l'équipement de recherche nécessaire.

(iii) Après cette réunion de démarrage, chaque centre mènera à bien sa propre part de travail. Douze mois plus tard, il adressera au CICRED un rapport intérimaire, qui sera suivi, huit mois après, des rapports définitifs.

(iv) Sur la base de ces rapports, le coordonnateur rédigera un rapport d'ensemble qui sera discuté et approuvé lors d'une réunion qui se tiendra environ deux ans après la réunion de démarrage.

(v) Le rapport d'ensemble sera publié à l'issue de la deuxième réunion.

4. LES CENTRES PARTICIPANTS

Les centres participant à chaque projet coopératif sont tous des centres ayant accepté d'affecter, pendant deux ans, un chercheur au projet (ou son équivalent à plein temps), qu'ils soient ou non en mesure d'envoyer un participant à la réunion de démarrage. Les centres participants qui ne peuvent envoyer un délégué à la réunion de démarrage sont totalement impliqués dans l'entreprise, de deux manières : (1) en communiquant avec le coordonnateur et en l'aidant à préparer le plan de recherche avant la réunion de démarrage; (2) en étant tenus régulièrement au courant, par le coordonnateur et le Secrétariat du CICRED, de l'état d'avancement des travaux.

5. LA REUNION DE DEMARRAGE

La réunion de démarrage accueillera les centres participants qui financeront les frais de voyage de leur représentant. Le logement, les repas et autres frais liés à la réunion seront à la charge du centre hôte. Le CICRED assurera le financement de l'interprétation simultanée (en anglais et en français), les dépenses de voyage et de séjour du coordonnateur et, éventuellement, des animateurs de la discussion.

6. LA RECHERCHE EN ELLE-MEME

(i) Le plan de recherche de chaque projet comprend deux parties : une partie commune à tous les centres participant au projet et une partie facultative comportant plusieurs possibilités que les centres pourront choisir.

(ii) Lors de la réalisation de chaque projet de recherche, l'accent sera mis sur l'analyse des données et/ou sur leur traitement plutôt que sur leur collecte. Mais chaque centre participant décidera en fonction des critères de recherche qui prévalent dans son pays.

(iii) Au cours de la période des recherches, des relations étroites seront entretenues entre le coordonnateur et chaque centre participant. On espère vivement que les centres participants s'assisteront mutuellement (échange d'expériences et de résultats, et même partage des outils de recherche). On espère aussi que, progressivement, chaque projet de recherche ouvrira la voie à un réseau efficace de centres de recherche démographique qui favorisera la tâche de chacun.

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Programme de recherche coopérative inter-centres

MORTALITE INFANTILE ET DE LA PETITE ENFANCE DANS LE TIERS MONDE

Actes de la réunion de démarrage

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Carolina Population Center
University of North Carolina at Chapel Hill
Chapel Hill, North Carolina 27514
Etats-Unis d'Amérique

3-6 septembre 1979

RAPPORT DE SYNTHESE

Introduction et fondement

1. Le Comité international de coopération dans les recherches nationales en démographie (CICRED) se préoccupe actuellement de soutenir les efforts de coopération entre les centres démographiques qui ont les mêmes intérêts pour la recherche. Une telle coopération permettra d'éviter les doubles emplois dans les actions déployées en vue d'accélérer l'échange d'expérience, de partager les moyens de réalisation et d'améliorer les conditions d'échange intellectuel.

Répondant à un précédent appel du CICRED, un certain nombre de centres acceptèrent de participer à la recherche coopérative sur la mortalité infantile et de la petite enfance dans le Tiers Monde. Une réunion des représentants de ces centres fut organisée par le CICRED du 3 au 6 septembre 1979, au Population Center de Chapel Hill, University of North Carolina (E.U.).

M. Jack Eblen, de l'Organisation mondiale de la santé, et M. Abdel Omran, du Département d'épidémiologie (University of North Carolina) furent les animateurs des séances plénières. M. Hugo Behm, coordonnateur général du projet de recherche, rédigea un document qui servit de base aux discussions. Les participants se divisèrent en trois groupes, en fonction de leurs intérêts spécifiques :

Groupe 1 : niveaux et tendances de la mortalité et mortalité différentielle
Groupe 2 : causes de la mortalité
Groupe 3 : interactions entre fécondité et mortalité

Objectifs

2. L'objectif du programme de recherche est de mettre en commun l'expérience des divers centres dans les domaines suivants :

(a) identification des problèmes et propositions d'amélioration dans la collecte des données, les méthodes d'estimation, l'analyse et les comparaisons internationales des résultats des recherches dans le domaine de la mortalité infantile et de la petite enfance dans le Tiers Monde;

(b) étude et comparaisons, à l'échelon international, des niveaux, des tendances et des principales différences de la mortalité infantile et de la petite enfance dans les pays du Tiers Monde;

(c) examen des interactions entre le comportement en matière de fécondité et l'expérience en matière de mortalité infantile;

(d) essai d'explication des causes de la transition de la mortalité infantile et de la petite enfance dans les pays du Tiers Monde et déduction des implications politiques.

Organisation

3. Il a été convenu que, sur la base des informations disponibles et des intérêts de la recherche, les représentants des centres constitueraient les groupes de travail suivants :

(1) niveaux, tendances et différences, à partir des données rétrospectives (enquêtes transversales et recensements);

(2) niveaux, tendances et différences, à partir des données prospectives (statistiques de l'état civil et enquêtes longitudinales);

(3) causes de la mortalité infantile et de la petite enfance, à partir de toutes les données disponibles;

(4) interactions entre la mortalité infantile et de la petite enfance et la fécondité;

(5) études de la mortalité infantile et de la petite enfance, à partir des données sur l'Enquête mondiale de fécondité.

Afin d'éviter que l'Enquête mondiale de fécondité ne soit exclue des analyses des autres groupes, le Groupe 5 se maintiendra en étroite collaboration avec eux.

4. Chaque groupe devra examiner les problèmes concernant :

(a) la constitution des questionnaires, le choix et la formation du personnel, l'organisation sur le terrain et le contrôle du travail;

(b) les pièges, les échecs dans les méthodes, les erreurs d'interprétation et toutes autres questions se rapportant aux difficultés rencontrées;

(c) l'évaluation des méthodes d'estimation en utilisant, dans la mesure du possible, des sources multiples et des procédés de cohérence logique interne;

(d) le coût des diverses méthodes et les contraintes en matière de financement et de personnel.

5. Chaque centre participant précisera, en fonction de ses moyens et de ses intérêts, le groupe (ou les groupes) auquel il souhaite participer.

Le centre participant désignera un chercheur qui sera responsable de l'exécution de chaque catégorie de recherche entreprise.

Chaque centre supportera tous les coûts de ses recherches au niveau local. Le centre participant ne sera responsable d'aucune dépense d'assistance technique (consultations d'autres centres participants) ou de toute autre nature décidée par le CICRED.

6. Chaque groupe aura un coordonnateur spécifique, dont les fonctions seront les suivantes :

- communications

(a) fixer un calendrier
(b) maintenir le contact entre les centres
(c) s'assurer de l'achèvement des rapports à la date fixée
(d) recueillir les rapports auprès des centres
(e) maintenir le contact avec les autres coordonnateurs, avec le coordonnateur général et avec le CICRED.

- aspect technique

(a) faire des suggestions aux centres sur les variables étudiées, sur l'analyse ; répondre aux demandes de consultation

(b) préparer les rapports finaux pour le CICRED, en collaboration avec les centres participants.

Il est souligné que chaque coordonnateur spécifique restera en relation constante avec les centres et s'assurera de la liaison entre les centres.

7. Il s'avérera peut-être nécessaire de réunir les centres participants de chaque groupe avant la réunion du CICRED prévue en 1981. La décision en sera prise après consultations mutuelles entre le CICRED, les centres participants, le (ou les) coordonnateur spécifique et le coordonnateur général.

8. Le rapport final sera examiné lors d'une réunion de tous les centres participants du CICRED en 1981.

9. La répartition suivante des centres coordonnateurs a été approuvée :

(1) niveaux, tendances et différences, à partir des données rétrospectives (enquêtes transversales et recensements)	International Population Center, Cornell University, E.U.
(2) niveaux, tendances et différences, à partir des données prospectives (statistiques de l'état civil et enquêtes longitudinales)	Institut de formation et de recherche démographiques (IFORD), Yaoundé, Cameroun
(3) causes de la mortalité infantile et de la petite enfance, à partir de toutes les données disponibles	Centro de Desenvolvimento y Planejamento Regional, Minas Gerais, Brésil
(4) interactions entre la mortalité infantile et de la petite enfance et la fécondité	Carolina Population Center, Chapel Hill, North Carolina, E.U.
(5) études de la mortalité infantile et de la petite enfance, à partir des données sur l'Enquête mondiale de fécondité	Office de la recherche scientifique et technique outre-mer (ORSTOM), Paris, France.

Calendrier

Le calendrier général suivant - à adapter en fonction des possibilités de chaque groupe - a été adopté:

octobre 1979

Envoi du rapport du CICRED aux centres, avec une lettre d'invitation à participer au programme.

décembre 1979

Réponses des centres au CICRED précisant le groupe auquel ils projettent de collaborer. Le CICRED fera suivre les lettres aux coordonnateurs spécifiques et

informera chaque centre de la participation des autres centres.

janvier 1980

Les coordonnateurs spécifiques se mettront en relation avec les centres participants au sujet des détails du programme de travail et d'autres informations (voir les fonctions du coordonnateur spécifique).

juillet 1980

Premier rapport des centres au(x) coordonnateur(s) spécifique(s) sur l'état d'avancement.

janvier 1981

Deuxième rapport des centres au(x) coordonnateur(s) spécifique(s)

:: 1981

Rapport final des centres au(x) coordonnateur(s) spécifique(s).

juillet 1981

Rapport final du (des) coordonnateur(s) spécifique(s) au CICRED.

octobre 1981

Deuxième réunion des centres participants.

1982

Publication, par le CICRED, du rapport final et des résultats de la recherche.

10. Comme on l'a expliqué au §1, les participants se sont divisés en trois groupes en fonction de leurs intérêts propres. Chaque groupe a rédigé un rapport spécifique et c'est sur la base de ces trois rapports spécifiques que le RAPPORT DE SYNTHESE que composent les §1 à 10 de ce document a été approuvé. Il devrait être considéré comme un guide. En fait, chacun des trois groupes spécifiques avait des problèmes particuliers nécessitant des solutions appropriées. Le reste du document reproduit les trois rapports spécifiques.

:: date à fixer en fonction du plan de travail

Composition des trois groupes spécifiques mentionnés au §1

Groupe 1 : niveaux et tendances de la mortalité et mortalité différentielle

- Basilio B. Aromin
- Roger Avery
- Samuel Baum
- Carlos da Costa Carvalho
- Alain Mouchiroud
- Mohanlal Srivastava

Groupe 2 : causes de la mortalité

- Hugo Behm
- Magdalena Cabaraban
- Pierre Cantrelle
- Berta Castillo
- Dennis Chao
- Irma Garcia
- Larry Heligman
- Sethuramiah Rao
- Diana Sawyer
- Dominique Tabutin

Groupe 3 : interactions entre fécondité et mortalité

- Abdelmegid Farrag
- Atef Khalifa
- Mr. Krishnamoorthy
- Dong-Woo Lee
- Abdel Omran
- Chirayath Suchindran
- Ingrid Swenson
- Carol Vlassoff

RAPPORT SPECIFIQUE DU GROUPE N°. 1

"Niveaux, tendances et différences"
"de la mortalité infantile et de la petite enfance"

11. Nous avons deux sortes de recommandations à faire :

(a) recommandations pour une activité coopérative des centres participants au cours de la première année;

(b) recommandations pour une activité de constellations de centres au cours de la seconde année.

Ces recommandations sont classées en deux grandes catégories : (I) collecte des données; (II) différences.

I. Collecte des données

12. Chaque centre participant, au cours des six à neuf premiers mois, enverra un rapport à un bureau central concernant :

(a) la constitution des questionnaires, le choix et la formation du personnel, l'organisation sur le terrain, le contrôle du travail;

(b) les pièges, les échecs dans les méthodes, les erreurs d'interprétation et toutes autres questions se rapportant aux difficultés rencontrées;

(c) l'évaluation des méthodes d'estimation en utilisant, dans toute la mesure du possible, diverses sources et des procédés de cohérence logique interne;

(d) le coût des diverses méthodes et les contraintes en matière de financement et de personnel.

Le "US Bureau of the Census" a proposé d'être le bureau central. Chaque rapport ne concernerait que les sources de données utilisées par les centres. Le rapport serait classé selon les méthodes utilisées, de façon à faciliter la distribution auprès des centres qui auraient besoin de l'information recueillie.

13. (a) Pendant la deuxième année, les centres participants prépareraient en commun un rapport où seraient exposés les points saillants communément rencontrés et qui proposerait des améliorations dans la collecte des données et les méthodes d'estimation de la mortalité infantile et de la mortalité de la petite enfance.

(b) Il conviendra sans doute de rédiger deux rapports : l'un traiterait des méthodes rétrospectives comme les enquêtes (non longitudinales) et les recensements; l'autre s'occuperait des méthodes prospectives telles que celles qui font appel aux statistiques de l'état civil et aux enquêtes longitudinales.

II. Mortalité différentielle

14. Pendant la première année, il serait demandé à chaque centre participant de préparer un petit nombre de tableaux, communs à tous les centres, sur les différences de mortalité infantile et de la petite enfance. Chaque centre ne fournirait que les tableaux pouvant être dressés à l'aide des chiffres existants. Des tableaux standards sont donnés en annexe.

15. Chaque centre participant devrait accepter de donner aux autres centres des renseignements concernant :

(a) les variables qui se sont révélées montrer des différences significatives de la mortalité infantile et de la petite enfance et celles qui ne semblent pas liées à cette mortalité;

(b) les définitions des variables et des méthodes d'estimation utilisées;

(c) les erreurs d'interprétation possible

(d) la liste des variables devrait, dans cette phase, être plus étendue que celle correspondant aux tableaux mentionnés dans le §14. Elle devrait, en particulier, comprendre des variables ayant trait à la collectivité;

(e) si cela est possible, l'évolution des différences;

(f) dans l'explication de l'évolution, le stade des activités de développement choisies suivant les diverses régions du pays devrait être indiqué. Cela pourrait concerner: (i) les cliniques (publiques et privées); (ii) les équipements en matière d'enseignement; (iii) le développement économique; (iv) la santé publique; (v) les moyens de communication et de transport.

16. Pendant la deuxième année, deux constellations de centres seraient constituées pour étudier les différences.

17. Une constellation comprendrait uniquement les centres disposant de renseignements détaillés par génération ou des résultats d'enquêtes prospectives. Elle étudierait la mortalité infantile et de la petite enfance selon l'âge et le sexe, en mettant l'accent sur les aspects biologique, matrimonial, et les causes de décès.

18. Les centres qui disposent surtout de données de recensement et d'enquêtes rétrospectives formeraient une autre constellation. Elle étudierait les différences de mortalité selon les variables géographiques, sociales et économiques.

19. Chaque constellation se réunirait pendant la deuxième année pour dresser un plan de recherche coopérative et prévoir la préparation de rapports. Entre temps, des modèles concernant les causes de la mortalité auront peut-être été mis au point (voir le rapport du Groupe 2).

20. Les animateurs de chacune des constellations devraient être choisis dans les six prochains mois.

21. Les ressources financières pour les réunions et la publication des rapports devraient être recherchées pendant la première année.

22. Devant le rapport spécifique du Groupe 1, il a été décidé, lors de la réunion plénière finale, de créer, dès le début, les deux constellations de centres initialement prévues pour la seconde année (see §16). Il s'agit des groupes de travail (1) et (2), mentionnés dans le §3 :

(1) groupe de travail sur les niveaux, tendances et différences, à partir des données rétrospectives (enquêtes transversales et recensements). Coordonnateur spécifique : Roger Avery.

(2) groupe de travail sur les niveaux, tendances et différences, à partir des données prospectives (statistiques de l'état civil et enquêtes longitudinales). Coordonnateur spécifique : Julien Amegandjin (ou le représentant qu'il désignera).

Les deux groupes de travail mèneront leur action en étroite collaboration à la fois dans le domaine de la collecte des données et dans l'étude de la mortalité différentielle. Les activités se dérouleront selon le calendrier suivant :

I. Collecte des données

Pendant la première année, tous les centres participants des deux groupes de travail enverront la documentation indiquée au §12 à l'"US Bureau of the Census" (à l'attention de M. Samuel Baum). L'"US Bureau of the Census" répercutera la documentation sur tous les centres participants.

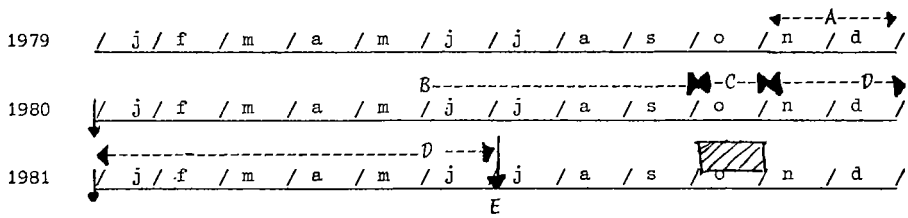
Pendant la seconde année, les groupes de travail (1) et (2) rédigeront les deux rapports mentionnés au §13, sous la direction de leur coordonnateur respectif.

II. Mortalité différentielle

Pendant la première année, dans chaque groupe de travail, les centres participants prépareront les tableaux indiqués aux §14 et §15 et enverront ces tableaux à leur coordonnateur respectif.

Au début du quatrième trimestre de la première année, et sur la base de ces tableaux, les deux groupes de travail, ou tout au moins les deux coordonnateurs, se concerteront (si possible, au cours d'une réunion) pour proposer des recherches additionnelles sur la mortalité différentielle, recherches qui seront exécutées pendant la deuxième année.

23. Le diagramme suivant résume et illustre le calendrier proposé pour les groupes de travail (1) et (2).



(A) Les centres participants font connaître leur intention en matière de coopération. Ils précisent s'ils veulent collaborer dans le cadre du groupe de travail 1 ou 2 ou les deux à la fois.

(B) (i) Dans les deux groupes de travail 1 et 2, tous les centres participants envoient la documentation indiquée au §12 au Bureau du recensement des Etats-Unis.
(ii) Les centres participants préparent les tableaux mentionnés dans les §14 et 15 et envoient ces tableaux à leurs coordonnateurs respectifs.

(C) Les deux groupes de travail (ou au moins les deux coordonnateurs) se concertent pour décider des recherches (sur la mortalité différentielle) à entreprendre dans la deuxième année.

(D) (i) Les groupes de travail 1 et 2 rédigent les deux rapports mentionnés dans le §13 sous la direction de leurs coordonnateurs respectifs.

(ii) Les groupes de travail 1 et 2 mettent en oeuvre les décisions prises en (C).

(E) Les rapports des groupes de travail 1 et 2 sont envoyés au CICRED.

▨ Période au cours de laquelle se tiendra la réunion de clôture.

Annexe au rapport du groupe 1

Différences dans la mortalité infantile et de la petite enfance : tableaux standards

24. Tableaux pour tous les centres : quand les données sont disponibles, utiliser les techniques de Brass. On calculera les taux de survie des enfants en utilisant les femmes âgées de 20-24 ans, 25-29 ans et 30-34 ans. Pour chaque case des tableaux, il y a donc trois chiffres, un pour les femmes de 20-24 ans, un second pour les femmes de 25-29 ans et un troisième pour les femmes de 30-34 ans. L'usage des techniques de Brass n'empêche évidemment pas l'utilisation d'autres techniques.

Tableau 1 :

Urbain	rural	total	Niveau d'instruction des mères
x	x	x	aucune instruction
x	x	x	1 à 5 ans d'instruction primaire
x	x	x	6 ans d'instruction primaire
x	x	x	instruction secondaire et au-delà
x	x	x	Total

Tableau 2 : régions géographiques

1. Capitale du pays	X
2. Zone urbaine n° 1	X
3. Zone rurale n° 1	X
4. Zone urbaine n° 2	X
5. Zone rurale n° 2	X

Il faudra distinguer, dans la mesure du possible, plus de deux régions. Elles devront être choisies pour des raisons d'homogénéité géographique ou économique. Un tableau croisé avec le niveau d'instruction serait souhaitable.

Tableau 3 : groupes ethniques (si possible)

Tableau 4 : travail de la mère

1. Ne travaille pas (ménagère)	X
2. Ne travaille pas (étudiante)	X
3. Profession libérale ou administrative	X
4. Travaille dans les services	X
5. Autre profession	X

Les deux catégories 1 et 2 pourront être réunies. Si cela est possible, il conviendrait de considérer à part les mères ayant une activité agricole.

Tableau 5: (s'il est possible de coupler le chef de ménage avec la mère)

Profession du chef de ménage

1. Agriculteurs, éleveurs, forestiers, pêcheurs et chasseurs
2. Ouvriers et manoeuvres non agricoles et conducteurs d'engins de transport
3. Professions libérales ou administratives
4. Vendeurs
5. Services
6. Autres professions

Tableaux 6 à 8 (si des données sur le logement de la mère sont disponibles) :

Tableau 6 : Statut du logement et/ou sa condition :

1. Permanent	X	1. Bon	X
2. Semi-permanent	X	2. Moyen	X
3. Temporaire	X	3. Mauvais	X

Tableau 7 : Sanitaires

1. Néant	X
2. Latrines	X
3. Tout-à-l'égout ou fosse septique	X

Tableau 8 : Approvisionnement en eau

1. Néant	X
2. Eau courante ou puits exclusivement réservé au ménage	X

Avertissement

Pour les tableaux 4 et 5, il faudra utiliser la classification internationale type des professions (CITP), édition révisée, 1968 (BIT, Genève; 1969).

Pour le tableau 4, la rubrique 3 est désignée comme suit dans la CITP :

- "Personnel des professions scientifiques, techniques, libérales et assimilées" (n°. 0 et 1 de la CITP), Directeurs et cadres administratifs supérieurs (n°. 2 de la CITP), Personnel administratif et travailleurs assimilés (n°. 3 de la CITP)"

La rubrique 5 est désignée comme suit dans la CITP :

- "Travailleurs spécialisés dans les services (n°. 5 de la CITP)"

Pour le tableau 5, la rubrique 1 est désignée comme suit dans la CITP :

- "Agriculteurs, éleveurs, forestiers, pêcheurs et chasseurs (n°. 6 de la CITP)".

- La rubrique 2 est désignée comme suit dans la CITP : "Ouvriers et manoeuvres non agricoles et conducteurs d'engins de transport (7/8/9 de la CITP)"

- La rubrique 3 est désignée comme suit dans la CITP : "Personnel des professions scientifiques, techniques, libérales et assimilées (n°. 0 et 1 de la CITP), directeurs et cadres administratifs supérieurs (n°. 2 de la CITP), personnel administratif et travailleurs assimilés (n°. 3 de la CITP)"

- La rubrique 4 est désignée comme suit dans la CITP : "Personnel commercial et vendeurs (n°. 4 de la CITP)"

- La rubrique 5 est désignée comme suit dans la CITP : "Travailleurs spécialisés dans les services (n°. 5 de la CITP)".

Pour plus de détails, voir l'Annuaire démographique des Nations Unies, 1972, page 95 (Publication des Nations Unies, numéro de vente E/F.73.XIII.1).

RAPPORT SPECIFIQUE DU GROUPE N°. 2

"Les déterminants de la mortalité infantile et de la petite enfance"

25. Le but principal est d'expliquer les mécanismes de la transition, en ce qui concerne la mortalité infantile et de la petite enfance, qui se produit dans certains pays du Tiers Monde et d'en tirer les implications politiques.

26. Un modèle général montrant comment se relient les déterminants pourrait s'avérer utile pour la conduite des études nationales.(Le groupe a esquissé une présentation graphique d'un tel modèle . Il est néanmoins conscient des déficiences de ce modèle et met l'accent sur son objet purement illustratif. Cependant, ce modèle montre quelques-unes des variables qui pourraient être incluses dans une étude des déterminants de la mortalité infantile et de la petite enfance et être de quelque utilité pour les centres participants. Ceci explique pourquoi il est annexé à ce rapport.)

27. Les centres participants peuvent inclure dans leur recherche l'analyse de quelques variables ou une partie seulement de l'esquisse générale, par exemple le rôle des programmes de santé publique. Les variables incorporées dans l'analyse peuvent avoir diverses significations dans différents contextes social, économique, culturel, politique, etc. Ceci peut s'appliquer aussi bien à une situation internationale qu'à une situation intra-nationale. Les centres devraient inclure le contexte de chaque pays dans leur analyse. Les variables se rapportant au contexte peuvent être quantitatives ou qualitatives. Les centres participants adresseront au coordonnateur une liste des variables de contexte durant les premiers mois du projet (voir §35 ci-dessous).

28. Il faut respecter une certaine souplesse dans le travail des centres. La disponibilité et la qualité des données atteignent des niveaux divers selon le centre. Une étude nationale peut être amenée à inclure des facteurs ou variables spécifiques du fait d'une situation particulière. Un pays peut souhaiter axer son étude sur une variable spéciale et les relations qu'a cette variable avec la mortalité et la morbidité, parce que cette variable revêt une importance particulière en tant que déterminant de la mortalité dans ce pays.

29. Certains centres conduiront leur étude au niveau des individus ou des ménages, d'autres centres à celui d'agrégats plus importants.

30. Aux fins de comparaison, nous suggérons que chaque centre conduise, si possible, une macro-analyse impliquant un nombre minimal de variables communes au travail de tous les centres. De plus, chaque centre, dans la mesure du possible, conduira une macro-analyse et/ou une micro-analyse plus approfondies, recouvrant, ou non, tout le territoire national. Le groupe 1 a donné une liste de variables qui peut être intéressante à ce propos.

31. Il est créé un sous-groupe[1] pour les données de l'Enquête mondiale de fécondité qui constituent un type spécial d'informations. Elles proviennent en effet d'une série d'enquêtes homogènes et comparables. Un coordonnateur spécial est désigné à l'ORSTOM (Paris) pour ce sous-groupe : il travaillera en étroite collaboration avec le coordonnateur responsable de tout ce groupe, ainsi qu'il en sera fait mention plus loin (voir §32). Le contenu des données utilisées par ce

1. désigné sous le vocable de groupe de travail n° 5 au §3

sous-groupe le conduira à établir des relations particulières avec les autres groupes de travail. Il serait souhaitable de procéder à un test de comparaison entre trois ou quatre pays avant d'étendre l'analyse aux autres. Le calendrier des activités de ce sous-groupe suivra le plan de travail ci-joint (voir de §32 à §39). Un document spécial sera préparé pour la Conférence mondiale de fécondité qui se tiendra à Londres en juillet 1980.

Le plan de travail suivra les étapes suivantes:

32. Dès que possible, un coordonnateur sera désigné pour tout le groupe (1). Un groupe de consultation sera institué pour apporter l'assistance technique aux centres participants et aider le coordonnateur à entreprendre l'étude comparative à la fin du projet. Un autre groupe de consultation sera aussi formé pour étudier les problèmes méthodologiques particuliers à l'"analyse des déterminants".

33. Au bout de deux mois, la liste des centres participants et le niveau qu'ils prévoient pour leur analyse et leur coopération seront communiqués au coordonnateur.

34. Au bout de six mois, chaque centre participant devra envoyer un rapport aux autres centres participants et au coordonnateur. Ce rapport comportera le sujet de la recherche, le cadre de l'analyse y compris les variables prises en considération (qualitatives et quantitatives), et la méthode de collecte ou d'estimation des données. De plus, si la recherche est déjà engagée, le rapport précisera son état d'avancement et apportera toute précision concernant les résultats obtenus et les méthodes utilisées. Par ailleurs, les facteurs énumérés dans le §24 du rapport du groupe 1 devront être inclus dans le rapport.

35. Au bout de six mois, les centres participants envoient au coordonnateur une liste contenant des informations qu'ils suggèrent pour appréhender le contexte.

36. Au bout de douze mois, un état d'avancement des travaux devra être soumis au coordonnateur. Ce document comportera non seulement les résultats préliminaires les plus probants, mais aussi une description des succès, échecs, difficultés, etc., relatifs aux divers procédés, méthodes, techniques, etc.

37. Au bout de 18 mois, un rapport final sera soumis au coordonnateur. En plus des "variables collectées", ce rapport final devra s'enrichir des variables de contexte afin de situer la signification des résultats de la recherche dans leur cadre socio-économique propre.

38. Dans les six derniers mois, le coordonnateur (avec l'aide du groupe de consultation cité en §32) fera une analyse comparative à partir des rapports de chaque centre. Comme certains centres travailleront au niveau des ménages (micro-analyse) alors que d'autres se situeront au niveau régional (macro-analyse), le coordonnateur pourra être appelé à recourir à deux présentations. Le rapport comparatif peut inclure non seulement des comparaisons de divers pays avec chacun pris comme unité de base, mais aussi des comparaisons de diverses régions situées chacune dans un pays différent, par exemple le secteur rural décrit dans les divers rapports nationaux.

39. Le rapport comparatif final fera la synthèse de toutes les études nationales et sera examiné à la réunion finale du projet.

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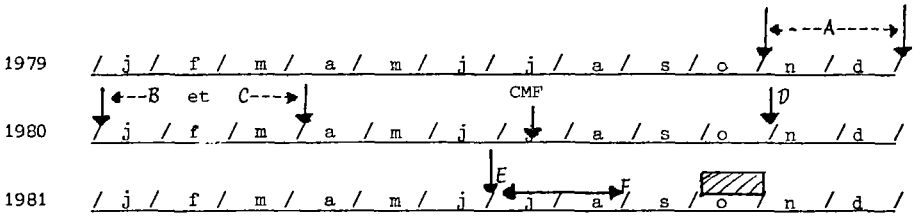
1. Le groupe est désigné comme le groupe de travail n°. 3. Son coordonnateur a été désigné à la fin de la réunion de Chapel Hill, en la personne de Mme Diana Oya Sawyer.

Annexe 1 au rapport spécifique du groupe n°. 2

40. Diagramme résumant le calendrier du groupe n°. 2

Point de départ : le 1er novembre 1979



(A) (a) Les centres participants font connaître leur plan pour collaborer.
(b) Un groupe de consultation est formé pour fournir l'assistance technique et aider le coordonnateur à la phase (F).
(c) Un groupe de consultation est formé pour traiter des problèmes méthodologiques spécifiques.

(B) Les centres donnent l'information sur leur recherche de manière plus précise qu'en A(a).

(C) Les centres donnent des informations sur le contexte au coordonnateur.

(D) Les centres envoient au coordonnateur un état d'avancement des travaux.

(E) Les centres envoient leur rapport final au coordonnateur.

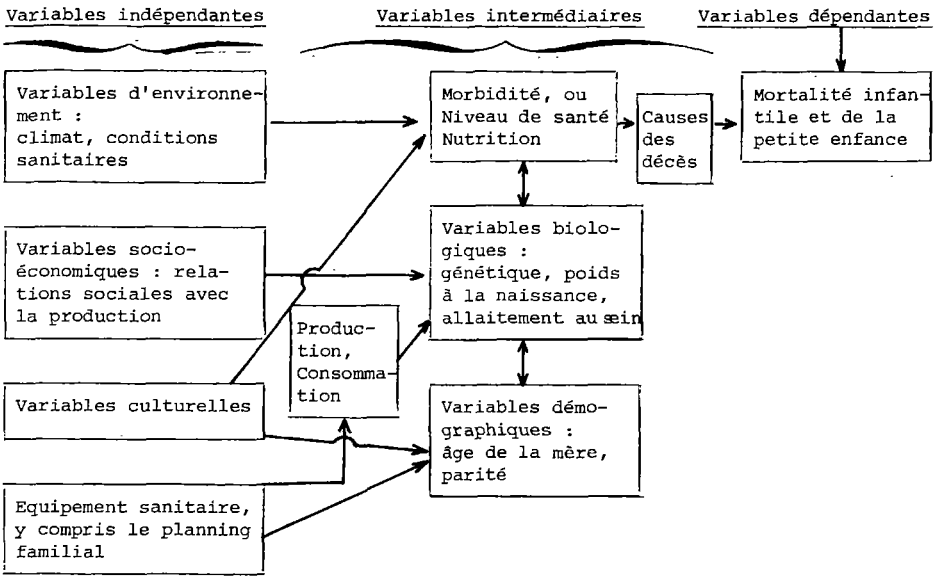
(F) Le coordonnateur prépare le rapport de comparaison.

CMF : Conférence mondiale de fécondité.

▨ Période où se tient la réunion finale de tout le projet.

Annexe 2 du rapport spécifique du groupe 2

Essai de présentation graphique des déterminants de la mortalité infantile et de la petite enfance



RAPPORT SPECIFIQUE DU GROUPE N°. 3

"Interaction de la fécondité et de la mortalité de la petite enfance"

A. Introduction et informations de base

42. Historiquement, le décès d'un enfant en bas âge est considéré comme responsable de la forte fécondité dans de nombreux pays. Il y a trois explications possibles.

(a) Par un mécanisme biologique : la période d'aménhorrée post-partum est prolongée par l'allaitement au sein; par conséquent, la survie d'un enfant en bas âge alimenté au sein augmente le délai de conception de l'enfant suivant.

(b) Par un mécanisme de compensation ou de remplacement : des parents qui perdent un enfant en bas âge ont tendance à compenser cette perte en ayant aussitôt un autre enfant.

(c) Par un mécanisme d'assurance : des parents qui craignent ou se rendent compte du risque de perdre un enfant ou anticipent une telle perte s'assurent une certaine taille de leur famille en ayant beaucoup d'enfants.

B. Champ de recherche

43. L'unité d'analyse est la famille nucléaire définie comme constituée par les parents et leurs enfants. La fécondité englobe tous les aspects de la formation de la famille (ordre de naissance, intervalle entre les naissances successives, âge à la maternité, dimension de la famille, pertes foetales au cours de la grossesse).

C. Objectifs

44. L'objectif des études proposées est de rechercher les interactions entre le comportement procréateur et l'expérience vécue de la mortalité des enfants en bas âge. Plus précisément, les deux directions suivantes de recherches seront suivies :

(a) déterminer l'impact de la perte d'enfants sur le niveau et la tendance de la fécondité;

(b) déterminer l'impact du comportement procréateur sur la mortalité infantile et de la petite enfance et sur l'acceptation du planning familial pour des buts sanitaires.

D. La recherche

45. Un centre donné peut choisir de mener des recherches dans une des deux directions qui viennent d'être mentionnées. Mais il serait très désirable que chaque centre conduise des recherches dans les deux directions de façon à établir clairement les interactions entre la mortalité infantile et de la petite enfance et la fécondité.

46. Le tableau suivant indique les variables qui pourraient être retenues dans ces recherches :

(a) effet de la fécondité (en tant que variable indépendante) sur la mortalité de l'enfance

Le taux brut de natalité n'est pas un indice suffisant; il doit être remplacé par les variables suivantes :

- nombre d'enfants déjà nés de la même mère
- âge de la mère
- intervalle avec la naissance précédente
- nombre d'enfants survivants selon le sexe
- historique des pertes d'enfants ou d'embryons au cours des grossesses précédentes.

(b) la mortalité (en tant que variable dépendante) peut être mesurée à trois niveaux :

- décès de l'enfant actuel
- perception du risque de perdre un enfant ou anticipation d'une telle perte
- perception par la famille d'un enfant handicapé comme une perte d'enfant.

(c) l'effet de la perte d'un enfant (en tant que variable indépendante) sur la fécondité

L'hypothèse de la survie de l'enfant sera vérifiée. La perte d'un enfant peut être étudiée suivant les variables suivantes :

- âge au décès
- sexe de l'enfant
- rang de naissance de l'enfant
- cumul des enfants perdus
- perception du risque de perte d'enfants.

Dans tous les cas, on tiendra compte des variables culturelles, démographiques et des caractéristiques socio-économiques.

(d) la fécondité (en tant que variable dépendante) peut être mesurée à trois niveaux:

- descendance complète et (ou) histoire génésique
- enquête CAP mesurant les modifications dans la pratique de la contraception
- comportement procréateur après la perte d'enfants, mesuré par l'intervalle avec la naissance suivante.

E. Données nécessaires et méthodologie

47. Des données existent déjà dans quelques pays, lesquelles permettent d'entreprendre les études précédemment citées. Certaines de ces études peuvent nécessiter de nouvelles enquêtes par sondage. La liste suivante aidera à découvrir les besoins et les lacunes.

Liste des variables de base

I. Enquête

I.1 Histoire génésique
I.2 Mesure de la mortalité
I.3 Développement physique et intellectuel de l'enfant
I.4 Rang de naissance de l'enfant décédé
I.5 Descendance complète
I.6 Intervalle entre les naissances après la perte d'un enfant
I.7 Approbation et utilisation de la contraception après la perte d'un enfant
I.8 Différence entre les divers groupes culturels.

II. Couplage des données

II.1 Couplage par génération
II.2 Mortalité par génération
II.3 Causes de décès
II.4 Age de la mère } renseignements pris sur le
II.5 Rang de naissance } bulletin de naissance
II.6 Classe sociale }

III. Etudes écologiques (à l'aide des recensements)

Analyse spéciale des données des recensements à condition que certaines questions sur la fécondité aient été posées à la mère au recensement.

III.1 L'état matrimonial
III.2 Le nombre d'enfants nés vivants
III.3 Le nombre d'enfants survivants

F. Plan d'action

48. Les centres désirant entreprendre des études sur l'interaction de la mortalité infantile et de la fécondité pourraient le faire savoir dans les trois mois suivant la réception du rapport sur les résultats de la réunion du CICRED.

Les centres auraient le choix entre les trois types d'études suivantes :

(a) enquêtes spécifiques spécialement montées pour le projet
(b) enquêtes de ménages par sondage comprenant des questions sur la mortalité et la fécondité
(c) renseignements fournis par le recensement sur la fécondité et la mortalité.

49. Afin de permettre aux centres de se décider en toute connaissance de cause, ces derniers recevront une liste de variables (voir la liste des variables de base) à considérer dans de telles études. Ils pourront ainsi examiner les possibilités d'obtenir des données sur ces variables dans leur programme normal de collecte de données. Sinon, des enquêtes spéciales aussi appropriées que possible devront être lancées sur une période définie s'inscrivant dans un calendrier donné (voir l'essai de calendrier proposé plus loin).

Le coordonnateur préparera une liste de variables qui sera annexée au document sur la recherche envoyé aux centres.

50. Le Carolina Population Center (Dr. Omran) sera le coordonnateur des divers projets de recherche des centres. Le coordonnateur serait très heureux de recevoir des suggestions sur les plans d'analyse et sur les tableaux communs à préparer. De plus, chaque centre devra donner des indications sur ses propres plans d'analyse et les tableaux qu'il prévoit.

51. Un état d'avancement de l'enquête et (ou) une analyse des données disponibles seront envoyés au coordonnateur et au CICRED tous les six mois. Une réunion technique pourrait être envisagée quelque temps avant la réunion du Bureau du CICRED en 1981. L'utilité d'une telle réunion sera examinée par des consultations entre le CICRED, les centres participants et le coordonnateur.

G. Fonctions spécifiques du coordonnateur

Le coordonnateur remplira les fonctions suivantes :

(a) recevoir la correspondance des centres faisant part de leurs intentions et donnant des renseignements sur les données disponibles ou attendues;

(b) former une constellation de centres sur la base des intentions et des intérêts des centres exprimés dans leur lettre d'intention;

(c) définir les variables de base et faire des suggestions aux centres concernant les variables qu'ils ont choisies;

(d) recevoir les rapports des centres selon le calendrier adopté;

(e) tenir le rôle de consultant sur la conduite de l'étude;

(f) préparer le rapport final et rester en liaison avec le CICRED.

52. Le calendrier suivant est proposé :

octobre 1979	- envoi du rapport de la réunion du CICRED aux centres, accompagné d'une lettre leur demandant de faire connaître leurs intentions concernant leur plan de travail
janvier 1980	- date limite de réception des réponses des centres
juillet 1980	- état d'avancement de la recherche : le premier rapport est envoyé au coordonnateur
janvier 1981	- état d'avancement de la recherche (deuxième rapport)
mars 1981	- état d'avancement de la recherche (troisième rapport). Ce troisième rapport sera le rapport final.
avril-mai 1981	- rapport d'ensemble envoyé par le coordonnateur au CICRED.

H. Recommandations

53. Le groupe propose que le CICRED :

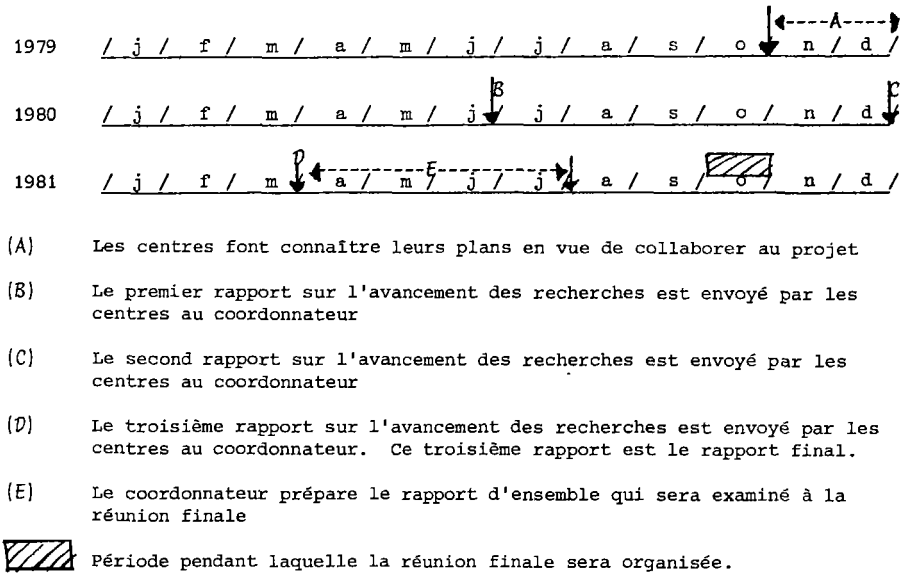
(a) demande à chaque centre de recherche intéressé de présenter un plan de travail sur le sujet considéré (le plan devrait porter sur les niveaux, les tendances, les différences, les interactions, etc.);

(b) encourage chaque centre (financièrement ou d'une autre façon) à examiner la possibilité d'une plus grande utilisation des données sur le sujet;

(c) examine avec les centres les possibilité d'entreprendre des études du premier type (voir §48);

(d) organise, indépendamment des centres, des groupes de travail pour étudier certains points de méthode, et s'efforce de trouver les moyens financiers permettant à ces groupes de se réunir à des intervalles appropriés. Les responsabilités précises de chaque groupe devront être déterminées.

54. Diagramme résumant le calendrier proposé par le groupe 3



(A) Les centres font connaître leurs plans en vue de collaborer au projet

(B) Le premier rapport sur l'avancement des recherches est envoyé par les centres au coordonnateur

(C) Le second rapport sur l'avancement des recherches est envoyé par les centres au coordonnateur

(D) Le troisième rapport sur l'avancement des recherches est envoyé par les centres au coordonnateur. Ce troisième rapport est le rapport final.

(E) Le coordonnateur prépare le rapport d'ensemble qui sera examiné à la réunion finale

Période pendant laquelle la réunion finale sera organisée.

55. Noms et adresses des coordonnateurs des groupes de travail mentionnés dans le rapport (voir §3)

Coordonnateur général : Hugo Behm, Apartado 5249, San José (Costa Rica)

Groupe de travail n°. 1 : niveaux, tendances et différences, à partir des données rétrospectives (enquêtes transversales et recensements) (§3, §22 et §23)

- *Roger Avery, International Population Program, Cornell University, Uris Hall, Ithaca, N.Y. 14753 (EU).*

Groupe de travail n°. 2 : niveaux, tendances et différences, à partir des données prospectives (statistiques de l'état civil et enquêtes longitudinales) (§3, §22 et §23)

- *Julien Amegandjin, Institut de formation et de recherche démographiques (IFORD), B.P. 1.556, Yaoundé (Cameroun).*

(M. Amegandjin désignera un membre du personnel de l'IFORD qui assumera le rôle de coordonnateur.)

De plus, les centres participants aux groupes de travail 1 et 2 doivent envoyer de la documentation (voir §12, §22 et §23) à :

- *Samuel Baum, US Bureau of the Census, Scuderi Building, Washington, D.C. 20233 (EU).*

Groupe de travail n°. 3 : causes de la mortalité infantile et de la petite enfance, à partir de toutes les données disponibles (§3 and §32)

- *Diana Oya Sawyer, CEDEPLAR, Universidad Federal de Minas Gerais, Rua Curitiba 832, Belo Horizonte, M.G. (Brésil).*

Groupe de travail n°. 4 : interactions entre la mortalité infantile et de la petite enfance et la fécondité (§3 et §48)

- *Abdel Omran, Carolina Population Center, University of North Carolina at Chapel Hill, University Square 300 A, Chapel Hill, North Carolina 27514 (EU).*

Groupe de travail n°. 5 : études de la mortalité infantile et de la petite enfance, à partir des données sur l'Enquête mondiale de la fécondité (§3 et §31); (le groupe de travail n°. 5 est, en fait, un sous-groupe du groupe de travail n°. 3)

- *Pierre Cantrelle, Office de la recherche scientifique et technique outre-mer (ORSTOM), 24 rue Bayard, 75008 Paris (France).*

LISTE DES CENTRES DE RECHERCHE DEMOGRAPHIQUE AYANT EXPRIME LEUR DESIR DE COLLABORER AU PLAN DE RECHERCHES SUR LA MORTALITE INFANTILE ET DE LA PETITE ENFANCE DANS LE TIERS MONDE

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:: - Institut de formation et de recherche démographiques, B.P. 1.556, Yaoundé (Cameroun).

:: - Demographic Research Unit, Institute of Statistical Studies and Research, 5 Tharwat Street, Orman, Giza (Egypte).

:: - Demographic Unit, University of Liberia, P.O. Box 274, Monrovia (Liberia).

- Département du plan, Institut national de la statistique, B.P. 20, Kinshasa-Gombé (Zaïre).

AMERIQUE DU NORD

:: - Carolina Population Center, University of North Carolina at Chapel Hill, University Square 300 A, Chapel Hill, North Carolina 27514 (EU).

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:: - Population Studies Center, University of Pennsylvania, 3718 Locust Walk CR, Pennsylvania, Philadelphia 19174 (EU).

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:: - Departamento de Salud Publica y Medicina Social, Universidad de Chile, Independencia 1027, Casilla 6537, Correo 4, Santiago (Chili).

- Instituto de Desarrollo de la Salud, Apartado de Correo 9082, Zona 9, La Habana (Cuba).

:: - Centro de Estudios Economicos y Demograficos, El Colegio de Mexico, Camino al Ajusco num. 20, Mexico 20, D.F. (Mexique).

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LISTE DES CENTRES DE RECHERCHE DEMOGRAPHIQUE AYANT EXPRIME LEUR DESIR DE COLLABORER AU PLAN DE RECHERCHES SUR LA MORTALITE INFANTILE ET DE LA PETITE ENFANCE DANS LE TIERS MONDE : *page 2*

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- Social Sciences Research Centre, University of the Punjab, New Campus, Lahore (Pakistan).

- Mindanao Center for Population Studies, Research Institute for Mindanao Culture, Xavier University, The Ateneo, Cagayan de Oro City (Philippines 4801).

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- Département de démographie, Université catholique de Louvain, 1 Place Montesquieu, B-1348 Louvain-la-Neuve. (Belgique).

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- Centro de Estudos Demograficos, Av. Antonio José de Almeida, 5-8°, P-1078 Lisbon (Portugal).

- Centre for Population Studies, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT (RU).

Recherche coopérative inter-centres sur la mortalité infantile et de la petite enfance dans le Tiers Monde

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QUATRE INTERPRETES

INFANT AND CHILD MORTALITY IN THE THIRD WORLD: BACKGROUND INFORMATION AND PROPOSALS FOR COOPERATIVE STUDIES AMONG DEMOGRAPHIC CENTERS

Hugo Behm*
Coordinator

1. The Committee for International Cooperation in National Research in Demography (CICRED) approved, in 1977, several inter-center cooperative research projects aiming at "strengthening the collaboration amongst population centers having similar research interests. Such collaboration could improve research productivity by eliminating needless duplication of effort, by speeding up the exchange of experience, by sharing supportive facilities where possible, by providing the environment for a more stimulative and critical intellectual interchange".

2. "Infant and Child Mortality in the Third World" was selected as one of the subjects for cooperative research. This document, prepared by the Coordinator of the project, summarizes background information and suggests areas of study, for the discussion at a meeting of the participant Centers at Chapel Hill, North Carolina, U.S.A., on September 3-6, 1979.

3. The organization of the document is as follows:

   I. Sources of data and methods of estimation.
   II. Main characteristics and problems for research.
   III. The explanatory studies.
   IV. Consequences of the infant mortality decline in fertility.
   V. Some proposals for the inter-center cooperative program.

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I. SOURCES OF DATA AND METHODS OF ESTIMATION

Sources of data

4. The traditional sources of data for the study of infant and child mortality are civil registration of births and deaths, which are in extreme deficiency or even non-existent in the Third World. When available, its completeness is usually lower in rural populations, so the analysis of geographic constrasts is unreliable. In general, the countries or regions where these registers are more complete are also more advanced in the transition of mortality and in socio-economic development, and they do not represent the conditions prevailing in this region. The availability of these data are generally better in Latin America and certain Asian countries.

5. Vital statistics have the advantage of their national coverage and continuity, of providing information on causes of death, and permitting the study of mortality by age, geographic regions and trends. It is a source of data that should not be discarded, but used to the maximum of its possibilities. Even an incomplete register can inform on trends, if the omission has been more or less constant, and approximate rates for certain cities can be estimated. In some countries where civil registration is acceptable, its use has made important contributions to the knowledge of infant and child mortality, using socio-economic variables and the causes of death (Taucher, 1978).

6. Given these conditions, surveys have had a great development as an alternative source of data, which in many countries is almost the only one existing. They comprise multiple purpose demographic surveys, mortality surveys and fertility surveys including information on mortality. The retrospective studies (surveys or censuses) investigate deaths occurred in a reference period and/or the total number of children ever had and the surviving children; in fertility surveys, usually a full maternal history is available. In multiple round surveys, the occurrence of mortality for a period of time is observed in a population sample or in a cohort of births.

7. Surveys have the advantage that variables under study can be selected (in contrast with vital statistics and censuses), referring to the child, the mother, the family and the housing conditions. However, the analysis is limited by the size of the sample; the information of certain surveys is many times restricted to a given population within a country.

8. Experience shows that surveys are subject to errors which may be important, mainly due to omission in the declaration of deaths or errors in the time location of the death when a retrospective period of reference is used. These errors are less frequent in multiple-round surveys, which, on the other hand, are more complex and costly. It has been shown that the omission of deaths can be differential by sex of the child and by region of residence, factors which distort mortality differentials. In some cultures, especially in Africa and in Asia, beliefs on death may generate a purposive concealment of child deaths (Madigan, 1975), producing serious underestimation of mortality. The use of the randomized response technique has been found to increase the reliability of mortality declaration in certain trials (Krotki, 1977). Some procedures have been described in order to correct retrospective information on deaths occurred in the last 12 months (Traore, quoted by Tabutin, 1979).

9. Dual-record system apparently provides more complete and accurate information on births and deaths, but its application until now has been restricted to limited areas of certain countries.

10. Sources of information are particularly poor in reference to an important variable, the causes of death. To the limitations of mortality registration, it has to be added the fact that usually only a part of registered deaths have a medical certification. Without dismissing the possibility of making the most possible use of vital statistics, in some countries it has been attempted to obtain information from the family by means of a trained non-medical interviewer (Cantrelle, 1979). This procedure has allowed to get precise diagnosis (accidents, childbirths), probable ones (measles, smallpox) or indicative symptoms (diarrhoea, cough, fever) in a relatively important proportion of child deaths. The hospital records on deaths and diseases are also useful; although usually not representative of the whole population, they have the advantage of a better quality of the diagnosis.

Methods of estimation

11. The main developments in this field are the indirect methods of estimation of child mortality, principally elaborated by Brass (with variants by Sullivan and Trussell). The method derives estimation of $_xq_0$ from the proportion of dead children of women classified by quinquenial groups of age. It has the advantage of its simplicity, of using available information on population censuses and surveys, and of permitting the study of mortality differentials by various characteristics of the mother and the head of the family. The method has obvious limitations. It does not provide estimations by year of age, a variable that is important to analyze in child mortality. The assumptions of constant mortality and fertility are rarely fulfilled; Brass has elaborated a correction for the case of declining mortality. It has been pointed out that the mortality models used in the method do not have the same age-structure that has been observed in some countries. Estimations are affected by the defects in the declaration of children ever born and surviving children. In so far as these factors are not constant in the various groups analysed, the study of differential mortality may be distorted. Some evaluation of Brass estimates has been published with other sources of information, sometimes with similar results and sometimes with important disparities. According to the CELADE experience, in the study of 12 Latinamerican countries, the method showed a tendency to underestimate mortality, but generally, differential mortality estimations were highly consistent (Behm, 1976-1978).

12. Recently, Brass has critically reviewed several methodological problems in the application of his method to the study of mortality differentials. Brass concludes that "those reserves are of marginal consequence compared with the basic simplicity, robustness and flexibility of the technique, and that serious biases in differentials are unlikely because similar patterns in the sub-groups can be expected to produce similar errors in estimate of levels" (Brass, 1979).

13. Preston & Palloni have elaborated a new method of estimation based on the age structure of surviving children. The method has the advantage of not making assumptions on mortality and fertility trends, and allowing a free

grouping of women by age, which is important when working with small samples. It requires, nevertheless, information on the age of surviving children. Haines and Avery have applied this method in association to the own-children method in Central America (Haines & Avery, 1978). Feeney has developed a method to estimate the trends of the infant mortality rate on the basis of the proportion of dead children by quinquenial age-groups of women.

14. The previous summary shows that improving methods to get basic data and methods of estimation is an important subject for research in the study of infant and child mortality in the Third World. It is obvious that, at present, no source of data and no method of estimation is completely satisfactory. For a long time ahead, the knowledge of that mortality will continue to depend on the best possible use of all sources of data and methods of estimation. In this sense, the study of this methodological problem is important.

15. In this subject, some of the questions that might be considered in the inter-center cooperative program are the following:

a) To the benefit of future and in-process research, is it possible to interchange the experience of the Centers (or to develop new research) on the frequency, magnitude, distribution and sources of survey errors, as well on the techniques to reduce or to correct them? Can a greater experience be obtained in the use of the randomized response technique or other procedures to control errors?

b) In spite of their limitations, indirect methods will continue to have wide use. There does not seem to be a consensus on their limitations. Is it possible to program a systematic evaluation of indirect methods in order to know the possibilities and restrictions in different populations, particularly in the study of differential mortality?

c) Could the new methods available be subjected to evaluation and eventually new estimation techniques be developed?

II. MAIN FEATURES OF INFANT AND CHILD MORTALITY IN THE THIRD WORLD

16. The breach of the mortality between the Third World and the advanced countries is enormous under 5 years of age. Towards 1970, it is estimated that infant mortality rate by regions ranged from 64 to 200 per 1000 births in the former, and between 12 and 31 per 1000 in the latter (Vallin, 1976). Although at lower levels, the difference is proportionally higher in early child mortality (1-4 years of age): estimates vary between 4 and 40 per 1000 in the first group and between 0.8 and 1.0 per 1000 in the second one (Dyson, 1977).

17. This contrast is even more significant if the size of populations exposed are considered. It is estimated that 72 per cent of world population lived in developing regions and that 84 per cent of world births occurred there by 1975.

18. The decline of this mortality will have a great impact in the improvement of life expectancy at birth. In some Asian countries, it has been observed that the decline of mortality under five years of age has contributed with as much as 30-50 percent of that improvement.

19. Although a high mortality usually prevails, the situation is very heterogenous among regions of the Third World. In general, mortality is lower in Latin America and higher in Africa, with an intermediate situation of Asian countries. There is also a great range of variation amongst countries. For example, in a group of 22 selected Asian countries, in the early 70's, only two have a rate lower than 40 per 1000, where less than 0.5 per cent of total births takes place. On the other hand, there are 8 countries having a rate higher than 120 per 1000, where 78 per cent of total births and 86 per cent of infant births are estimated to occur (UN/WHO, 1979).

20. Knowledge about mortality trends is very imperfect. The countries in which it has been possible to detect a significant decline are usually

those with better vital statistics and also more developed, and so are not representative of the Third World. In general, it is estimated that infant and child mortality have declined in several countries, but that gains are not significant enough to substantially modify the mortality situation in a reasonable period of time (see Montoya, 1975, for example). There is evidence that the rate of decline of general mortality has tended to diminish in the 60's in the underdeveloped regions (Gwatkin, 1978).

21. The wide range of infant and child mortality in the Third World makes difficult a global study. On the other hand, the heterogeneity of existing situations provides an exceptional opportunity to the inter-center cooperative program to study the mortality transition that is occurring in the Third World by comparing populations that are in different stages of the transition process.

Sex differentials of mortality

22. In some countries, particularly in Asia, a female surmortality has been observed in the age 1-4 years, while infant mortality shows the usual male excess (1).

23. As commented further on, the study of this differential provides information on the cultural determinants of early child mortality.

Age-structure of mortality

24. In general, the risk of dying is higher inmediately after birth and declines progressively in childhood. When infant mortality is high, the greatest excess regarding developed countries is found in post-neonatal mortality, largely produced by exogenous causes (2). Study of mortality in this age should have priority because its decline will greatly contribute to the reduction of the excessive mortality under 5 years of age.

25. In the group 1-4 years of age, the second year has the highest mortality, although generally lower than infant mortality. Nevertheless, in some

countries, mainly in Tropical Africa, a different distribution has been described, where the high mortality of the second semester of the first year is extended to the second year and even to the third one.

26. The study of the frequence of this distribution in the Third World is important, because it affects indirect estimations based in model life tables, especially when infant mortality estimates are so derived. It is also important to find out the causes of this particular age distribution of early child mortality. Indirect methods are not suitable for this purpose since they do not allow to estimate mortality by year of age.

Geographical differences of mortality

27. While in developed countries the urban/rural contrasts tend to disappear, in the Third World rural mortality is usually higher than urban. Differentials are variable but of an important magnitude. Mortality has been found inversely proportional to the degree of urbanization, with lower rates in the capital city.

28. Rural high mortality is particularly significant because the majority of the developing countries are mostly rural.

29. Only by exception the place of residence explains by itself these mortality contrasts, such as is the case of malaria endemic areas. They are mainly related to the different social, economic and cultural context existing in different regions, as commented further on. Nevertheless, the geographic distribution of mortality is an important variable of study providing information for the explanation of the mortality situation in a given country. On the other hand, it helps to identify populations exposed to higher risks (target population), useful for formulating programs to control mortality. Furthermore, the place of residence is an ever existing basic data.

30. In the study of geographic differentials must be taken into consideration the error originated in a differential rate of omission among different populations.

Mortality differentials by mother's education

31. In several studies, it has been found that infant and child mortality are closely and inversely correlated with the educational attainment of the mother. It is so an important determinant of the high mortality in the Third World, where population with none or very low level of education are the majority.

32. Differentials by education of infant and child mortality are greater in developing countries than in developed countries. In countries where this mortality is high, the risk in the illiterate population reaches unsually high levels, observed in the advanced world almost a century ago.

33. It has been observed that the higher rural mortality is explained in great measure by the lower levels of education existing in the rural population. The mortality of children of illiterate women shows a relatively small urban/rural differential, both being extremely high.

34. Geographic and educational variables are available in many of the researches on infant and child mortality carried on by the Centers. This provides a good opportunity to study the epidemiology of this mortality in the different socio-economic and cultural contexts existing in the Third World.

Other mortality differentials

35. In some investigations, it has been possible to analyse mortality contrasts in the first years of life by other social, economic and cultural variables: ethnic groups, religious groups, occupational characteristic of the head of the family, education of the father, etc. It is usually observed that groups that have a higher socio-economic level in a society show lower mortality.

36. Even in advanced countries with low infant mortality, socio-economic contrasts of early mortality do exist. What is characteristic of the mortality situation of the Third World -and makes it even worse- is that socio-economic mortality differentials are bigger and that populations in the lower strata are a majority (3).

37. The effect of socio-economic and cultural variables on mortality has important interactions, which makes difficult its analysis. These differentials are important for the explanatory study of the mortality. As indicated further on, it is important to integrate these and other variables in a global frame of analysis, if one wants to explain - and not merely to describe - these mortality differentials.

38. A variable which is only considered by exception and that has much analytical significance, is the social class (4). In fertility and mortality studies carried on in CELADE (Latinamerican Demographic Center) it has been found that social class is associated to important differentials (5).

Causes of death

39. The cause of death is an important intermediate variable in the chain of events leading to the death of the child. Unfortunately, as already mentioned, reliable information on causes of death is rarely available in the Third World. As usual, the countries with acceptable information are in a more advanced stage of mortality transition and development.

40. Nevertheless, there is evidence that excess infant and child mortality is mostly determined by three group of causes: infective and parasitic diseases (mainly diarrhoeal diseases), malnutrition and acute respiratory infections. This explains that post-neonatal mortality is usually the highest. In the neonatal mortality prevails prematury and causes of death linked with deficient or absence of health care during pregnancy, childbirth and to the newborn. A high, early and prolonged fertility exposes the newborn to conditions of higher risk: high order of birth, shorter intergenesic spacing, fertility in extreme ages of the women, etc. Some studies have analyzed the relationship of these and other factors with causes of death (Puffer, 1973; Taucher, 1978).

41. For several of the main causes of death in infancy and childhood, we have today efficient techniques of prevention and treatment. This links

the problem of mortality with the existent health services in the population, problem which is considered further on.

42. In this respect, the study of mortality should be extended to the study of diseases generating the mortality. Nevertheless, morbidity studies are much more complex and the available information in the Third World is even more incomplete than on deaths.

43. In the absence of information on causes of death, an estimation of mortality by endogenous and exogenous causes can be made using the Bourgeois-Pichat method. Some reserves on its use have been pointed out in African countries, where the age distribution in the first year of life is unusual (Tabutin, 1979).

44. The seasonal distribution of infant deaths has been described as additional information on causes, since ~~it~~ is usually related with seasonal variations in the incidence of certain diseases.

45. The description of levels, trends and differentials of mortality is a useful step in the analysis of the problem. But the next important step is to explain them in the context of a global interpretation of the mortality (6,7). This point is discussed in the following chapter.

6

III. THE EXPLANATORY ANALYSIS OF INFANT AND CHILD MORTALITY IN THE THIRD WORLD

46. The analysis of mortality differentials may have two purposes: (a) to identify populations exposed to different levels of risk, and (b) to explain the situation of mortality as a function of factors considered as determinants.

47. The practical importance of mortality differentials depend upon the size of the populations exposed to different risks of death. The identification and quantification of these populations is basic to define policies and programs aiming to reduce mortality (target populations). Concerning infant and child mortality, this means to estimate the number of births in the various groups identified as having significant differential risks. This is an objective not usually taken into consideration in mortality studies.

48. To explain the level, trends and other characteristics of the mortality in a population is an even more important objective. The advantages of having a general theory to explain the transition of mortality are evident. From the demographic point of view, better criteria could be obtained for predicting future trends. As concerns policies to control mortality, a consistent general explanation would provide information on the crucial factors to be controlled in order to bring substantial reduction of mortality.

49. There is extensive evidence that infant and child mortality is associated with the degree of socio-economic development (8). But the nature of this relationship is not well known nor the way in which each of the components of development affects the mortality.

50. Although at individual level, disease and death are essentially biological phenomena, at the collective level these biological factors are strongly determinated by the social and economic context, which

generates ways and levels of living conditions influencing, in their turn, the child survival. This context also works through the dynamic and internal structure of the family, as shown by studies at this level of analysis. The disease and the death of a child, as a social fact, should therefore be analysed in the context of a social theory, theory that has not been yet elaborated. It does not seem to be an easy task. The long road covered in the study of fertility, since the initial KAP studies until the recent formulation of general theories of fertility, is a significant example of the work ahead in the analysis of mortality.

51. For the sake of the present discussion, the determinant factors of infant and child mortality are grouped in three categories: (a) the historic stage of socio-economic development, (b) the social policies, and (c) the cultural determinants.

The historic stage of socio-economic development

52. Socio-economic development is usually considered a process of modernization, industrialization or westernization of a society. In the agrarian sector, is the transition from a primitive, subsistence, non-monetary, low-productive, kin-based agricultural production, to a modern, technified, high-productive, managerial production. In the non-agrarian sector, it means the transformation of the artisan production and a restrictive market distribution to a mass-production, highly industrialized and productive, with giant national and international markets. Both activities are based on a salaried labour force. This process is expressed in substantial raises in income, production and consumption; in important changes in consumption and social aspiration patterns and improvement in the usual social indicators (education, health, social security, housing, etc.). The process is not linear and has many intermediate stages.

53. Experience has shown that this transition is associated to significant declines of both infant and early childhood mortality. These rates have reached the lowest historical levels in advanced industrial countries and show a steady decline at present (9).

54. Other interpretation of this process is to consider it as a transition of modes of production, from a pre-capitalist economy to an advanced capitalist system. This is the frame that Caldwell has used in his most recent formulation of a general theory on fertility (Caldwell, 1978).

55. Whatever general frame of reference is adopted, it is evident that the interpretation of the trends and differentials of mortality in the Third World should be considered in the context of this historic process of change. In footnote 10, a United Nations report on the social conditions existing in Latinamerican agriculture population is summarized, as an example of the realm where high rural infant and child mortality is occurring.

The role of social policies

56. Usually, national governments implement policies aiming to reduce inequality in the distribution of social and economic benefits among the different social groups, policies needed as well to reproduce the required labour force for the production process. Such are policies on social security, education, health, housing, agrarian reforms, etc. This is a new factor to be considered in the analysis of mortality. It has been shown that mortality is lower, at the same level of national income, if its distribution is more equalitarian (Battacharyya, 1975). In some countries, the observed decline of mortality has been more marked than expected according to the economic indicators, a fact that has been explained by the implementation of more efficient and equalitarian social policies (Preston, 1976).

57. In the set of these social policies, the especific activities developed by the health sector aiming to reduce morbidity and mortality, are of especial relevance, along with programs to improve environmental sanitary conditions. Health interventions are developed mainly in the public sector, thus making it feasible, at least in theory, to organize them according to a national policy.

58. For a time, controversy on the causes of the decline of mortality in the developing countries was centered upon the discussion of whether it was due to the improvement of living conditions derived from socio-economic development, or to the extension of health programs making use of modern technology. There is now consensus in considering that these are not alternative options, that health policies are a part of social policies, and that the individual and collective health depend on the progress in all and each of the social and economic sectors in a society.

59. The problem consists in determining the scope of especific health interventions in the different historic socio-economic contexts which exist in the Third World. To find out, in those conditions, what degree of reduction in mortality, in what period of time, and to what cost may be achieved with different forms of organization of the health programs. There exist at present techniques of prevention and treatment of diseases which are important causes of death. Some of them are highly effective, of low cost and they can be applied at a mass scale. None of them were available in the past in advanced countries, when they experienced the high mortality prevailing at present in the Third World; this opens meaningful perspectives to deal with the problem in developing countries.

60. It has been hypothesized that, in conditions of high mortality, the effect of medical interventions require a certain economic "take off". When it so happens, mortality would decrease with a certain intensity, mainly as effect of medical activities. When mortality reaches a certain level, the decline would tend to decrease again, and further improvement of socio-economic conditions would be necessary. In a certain way, the structure of causes of death supports that interpretation. It is likely that certain causes of death in a situation of high mortality be reducible with health techniques of high efficiency and low cost: infectious diseases preventable by vaccination (measles, for example), or parasitic diseases controllable by environmental interventions (malaria) or diseases where case fatality can be reduced by early treatment (diarrheal diseases). Once mortality

due these causes has declined to a certain level, further progress depends on more complex action to improve environmental conditions, and health programs requiring a more complex implementation (for example, neonatal mortality needs to improve the care of pregnant women, childbirth and newborn).

61. It is important to emphasize that this is not exclusively a problem of knowledge, but it mainly concerns with the capacity to organize its use in such a way that its benefits reach all the population, especially the groups exposed to greater risk. In this sense, the health sector is subjected to the same constraints of the social system which it belongs to. The fact is that, in many countries of the Third World, the coverage on health services is quite incomplete; it covers mainly the urban populations, neglecting the main problem of rural population; it gives priority to a curative, hospital-centered medicine, which is less effective and of greater cost, with lesser development of preventive actions. What is more important, its services are discriminated by social groups, so the people in more need of care, receive less services, if any (11). The World Health Organization has emphasized the need to extend and improve primary health care in the Third World.

The cultural determinants of mortality

62. The set of beliefs, values and behaviours in each culture may influence the child's survival and must be considered in the analysis of infant and child mortality in the Third World.

63. Cultural patterns affect the selection and interpretation of variables in the research design. It has been pointed out that the peasant family in many places of Africa and Asia is extended, patrilineal, patrilocal and patriarchal, and completely different to the occidental nuclear family. The different types of families are associated to different social behaviours influencing demographic variables. It has been emphasized the risk of approaching demographic studies in certain countries of the Third World using a frame of analysis corresponding to the western, industrialized world.

64. Beliefs on the life and the death of the child may also affect the quality of basic data. In some cultures, the dead child is supposed to be forgotten and his or her name should not even be pronounced. This may be the explanation of the purposive concealment of deaths found in some surveys.

65. The level of education, as mentioned before, has been shown closely and negatively associated with infant mortality in all studies, comprising a great variety of socio-economic conditions. Furthermore, it was found that once other socio-economic variables are controlled, education shows an effect "per se" in mortality, and greater than father's education. Caldwell has stressed that education is an important force in its own right, beyond its correlation with socio-economic improvement. There is little information to explain the nature of the education/mortality association. Education increases knowledge and skills, as well the ability to deal with new ideas. Educated mother breaks with tradition, becomes less "fatalistic" about illness and care of the child; she is more likely to look for proper health assistance. Caldwell emphasizes that the main factor is apparently that education changes the traditional balance of familial relationship and has more weight in the familial decision-making process related to the care of their children (Caldwell, 1979).

66. In many populations of the Third World, traditional medicine is still the only one accessible to the population. In order to study the mortality prevailing in these areas and to be able to extend the use of modern medicine, it is necessary to investigate beliefs and attitudes concerning (a) the care of the child (especially, feeding), (b) the perception of diseases and the beliefs on its causes and treatment, and (c) to whom they turn when sickness has occurred.

67. The value assigned to the life and the death of the child is another relevant factor. In certain cultures, these considerations of value mean material advantages for the people and for males within the extended family. This seems to explain the higher female mortality in early childhood and a different omission by sex in the declaration of deaths.

68. The breast-feeding practice has also an important cultural background and is associated to the risk of death of the infant as well as the distribution of deaths during the two first years of life. Furthermore, the fertility, affected by numerous cultural characteristics, influences also early mortality.

69. It is important to remember that cultural determinants should be considered in the historic socio-economic context already mentioned. Although the scope of individual and family decisions is undoubtedly important, it is certainly influenced by conditions generated in that general context.

70. The way to include cultural factors in the explanatory study of mortality is a subject that should be discussed. They are contextual variables, of qualitative nature, and certainly changing from a community to another. It is another example of the multidisciplinary nature of the mortality analysis. At the meeting of Chaire Quetelet, 1979, attention was called upon difficulties in the team-work of demographers and anthropologist. Anthropological research has a local character, with a deep study of local communities, in contrast with the more general purpose and the use of rather big populations in demographic research.

In summary

71. In the preceding text, it was attemped to systematize the large number of factors influencing child mortality in order to find an approach to the study of infant and child mortality in the Third World. For these purposes, they have been grouped in three categories: the historical socio-economic context, the governmental social policies (with special consideration of health) and the cultural determinants. By all means, this categorization is subject to discussion and improvement. As all analytical classification of a complex problem, it has to be understood that these categories are not independent and that they have numerous interactions. It is also clear that the process of change is very dynamic, and it shows a number of variations in the realm of the Third World. The experience that the participant Centers have in different regions, provides in this sense a favourable condition for cooperative studies.

Methods of analysis

72. Different research designs have been used in the explanatory study of mortality (Preston, 1978).

73. The most usual design is the cross-sectional analysis using "found" data sets. In different analytical units (countries, geographical units within countries, families), mortality is estimated and indices of factors considered determinants of mortality are selected. By means of several types of multivariate analysis, it is estimated the independent effect of each variable on mortality. This type of research has provided meaningful contributions to the causal interpretation of mortality. Nevertheless, it has important practical limitations. Independent variables are usually restricted and indices used are only a rough measuring of the explanatory variable, and bound to errors in basic data. Very often, no information is available on some of the most significant factors determining the mortality. On the other hand, multivariate analysis show associations between variables which are not necessarily causal ones. It is also known the difficulty of giving a prospective interpretarion to cross-sectional analysis (12).

74. The follow-up observation of a given population, registering the occurrence of deaths and the factors that may influence its incidence, at community, family and individual level, provides a richer material of analysis. Basic data are more reliable and explanatory or intervening variables may be better selected. The Cholera Research Lab research in Bangladesh, the WHO mortality surveys, the INCAP nutritional studies in Central America, among others, are examples of this type of research. Certainly, these are more costly research and of more specific value.

75. There are a few studies where the effect of health intervention on mortality has been evaluated, comparing populations similar in other determinant factors, but differing in the health care provided (Caldwell, 1975, for example).

76. It seems important to discuss several aspects of the design and interpretation of explanatory studies of infant and child mortality, such as: criteria to select and operationalize the variables, analysis at micro and macro level, use of different types of multivariate analysis, procedures to incorporate contextual variable to the analysis, etc.

IV. CONSEQUENCES OF THE INFANT MORTALITY DECLINE ON FERTILITY

77. The effect of levels and trends of child mortality on fertility has been a subject of much research, because population growth implications of mortality decline depend on the extent to which they induce corresponding reductions in fertility. The CICRED Seminar on "Infant Mortality in Relation to the Level of Fertility" (Bangkok, 1975) examined the following main questions: How much do fertility rates change when mortality changes? What conditions affect the responsive How rapid a response can be expected? The general conclusion was that mortality decline is likely in all societies to increase rates of population growth, since some compensating fertility declines will rarely be sufficient to completely offset the growth effects of mortality change.

78. Child mortality (1-9 years) affects fertility through four main mechanisms:

a) The compensatory response of fertility to changes in infant mortality resulting from the ovulatory-supressant effect of breast-feeding resulting in longer average intervals to the next birth if the previous child survives the breast-feeding period than if it dies therein.

b) The volitional replacement effect if parents aim to have a certain number of surviving children at the end of the childbearing period, which is assumed to be known, and if they could control fertility. Then, each dying child would be replaced by a live birth.

c) The insurance effect, a reaction to future child deaths if parents aim at having a certain number of children at some point past the end of their reproductive period.

d) Societal responses, that is, social reorganizations induced by mortality decline that operate on fertility by changing the reproductive context faced by individual couples.

79. It was recognized that existing methodologies are inadequate for the study of responses of fertility to changing mortality at the aggregate level, since they are not sensitive to the many social available options for responding to population pressures, considering social and cultural influences on the option adopted. The emphasis for future research was on the study at the level of intermediate variables of family system, and on the interrelations among levels of health mortality, socio-economic development and contraceptive availability as determinants of fertility levels.

80. Some of the main suggested areas of future research are the following:

a) The relation of lactation, nutrition and ovulation, to understand why the difference in birth intervals associated with a surviving child, as opposed to a dying child, varies so much among populations.

b) Research on other possible sources of shortened birth intervals following child births in natural fertility populations.

c) Estimation of the size of the replacement effect in populations with a wide range of socio-economic, cultural, familial and contraceptive technological circumstances, aiming to determine at what stage of the fertility transition the effect starts to operate and how it changes as the transition proceeds. It should be informed by theoretical considerations that place child mortality-fertility relations in a broad socio-economic context.

d) Ideal data for study are prospective information considering variables such as fecundability, nutritional and health levels of women, child health practices of the family, urban-rural residence, social class, educational attainment, breast-feeding practices following each birth, history of contraceptive use, and family size preferences. The multivariate analysis should examine interactive effects, emphasizing the possibility of different responses by different groups in the same society.

e) In order to predict the size of the insurance effect, it is necessary to have some indication of how parents value different numbers

of children and not simply to obtain information on "the" desired family size. It is also desirable to have some indication of the age span of parents to which survival of children is most salient.

f) Empirical estimation of the size of insurance effects requires information on parent's perceptions of child-risks. Community level of mortality may serve as a proxy for these perceptions. If used in this fashion, the number of communities represented should be large and other community-level variables controlled.

g) It deserves investigation the hypothesis that, when mortality declines, the number of surviving children demanded rises because the utility of additional children increases and their cost decreases.

h) Emphasis in future research should be placed on the interrelations among levels of health and mortality, socio-economic development and contraceptive availability as determinants of fertility levels.

i) Methodology, data and theory all need development, if work on the subject is to advance much beyond the level reported at this Seminar. The continued development of indirect and relatively inexpensive measures of mortality and fertility is particularly to be encouraged.

81. It is worth to stress that several general recommendations done in the discussion of the influence of child mortality on fertility are equally pertinent to the design and interpretation of the studies of the determinants of that mortality. It is also clear that many investigations could aim with profit to study both problems. Some of the most important points are the following:

a) The need to develop a theoretical frame of analysis.

b) The importance of considering the socio-economic and cultural context in the design and interpretation of studies.

c) The wide range of variation of this context among countries and among regions within countries of the Third World, and the need and advantage of studying the problem in the varying and changing conditions where it is occurring.

d) The limitations of the analysis at the aggregate level and the problems of interpretation of multivariate, cross-sectional analysis.

e) The advantages of the micronalaysis at the family level, where important intermediate variables and mechanisms are operating, and the importance of longitudinal studies.

f) The need of a continued improvement in data collection and indirect methods of estimation and analysis.

V. SUGGESTIONS FOR THE CICRED INTER-CENTER COOPERATIVE RESEARCH PROGRAM

82. In the preceeding chapters, it has been pointed out several research areas in the study of infant and child mortality in the Third World.

83. Considering time and resources available, the contribution of the inter-center cooperative research program to the study of the problem has some restrictions. It seems that it should consist mainly in the full use of the experience of the Centers, taking advantage of the numerous in-process, future and finished researches. A list of these researches, as reported by the Centers, has been compiled.

84. Some suggestions of specific projects for the program are described in the following text.

A comparative mortality study in selected populations

85. Factors that determined the mortality transition occurred in the past in industrial advanced countries have not been completely clarified and are a controversial subject. That is why it is an exciting matter of study the transition of mortality occurring in the Third World, in order to find out the factors fostering or hindering a decline of mortality and how do these factors operate, in order to promote the former and to control the latter ones. The very fact that the process of transition is found in different phases and that probably has different patterns of development among populations of the Third World, opens stimulating perspectives for a comparative study in this context.

86. Surely, the process of mortality change occurs under very different conditions in the Europe of the past and in the Third World of today. The possibilities of controlling the natural environment and the technological progress in production, as well as the availability of means for the prevention of death, are giant today as compared to the past (13).

87. The study of infant and child mortality using all the available information in the Third World has provided important findings, but it is of limited explanatory scope, as shown by the recent report of United Nations (Population Division) and World Health Organization, due to the lack of information in many populations and the variable quality and coverage of the information.

88. That is why it is suggested instead a comparative but limited study of selected number of populations (mainly countries) having the following characteristics:

a) Populations with different levels of infant and child mortality, representative of the different stages of the transition from a high to a middle level mortality. In addition to the level, some other features of mortality may be considered, such as trends.
b) Populations experiencing different stages of the process of socio-economic modernization.
c) Populations where a minimum of basic data is available for the study. It should be avoided, however, the exclusive selection of populations where the information system is better, condition usually associated to lower mortality and less under development.
d) Populations representative of the several conditions existing in the Third World with respect to infant and child mortality.

89. Within this frame of reference, it is possible to consider also contrast of particular importance. In the Chaire Quetelet meeting, it was mentioned that Sierra Leone has less poverty than Bangladesh, but a higher infant mortality. Blacker mentioned the interest of comparing Kenya and Gambia, where information is available and infant mortality is quite different.

90. In the selected populations, all the available information would be examined (and evaluated) on levels, trends, differentials of mortality, using all the independent variables existing for analysis (14).

91. According to the ideas summarized in Chapter III, the information on those populations would be completed with reference to (a) the historic stage of socio-economic development, (b) the existence of social policies affecting mortality (health, in particular), (c) the relevant cultural characteristics. In this way, the explanatory analysis will be enriched with a broader set of variables than usually considered in this type of research.

92. As far as possible, the study should consider both the macro and micro level of analysis.

93. Because of the wide range of mortality situations considered in the project, as well as the broader number of explanatory variables collected, it is to be expected that this comparative analysis will provide a more comprehensive approach to the study of infant and child mortality in the Third World. The central idea is that the joint examination of a set of well selected researches should provide more information than the single consideration of each of them.

94. The main difficulty of this project is the comparison of mortality estimations and other variables obtained from a variety of sources and with different methods. The restriction of these conditions should be carefully evaluated in the comparative study. Perhaps it would be convenient to do some of the comparisons between researches based in similar sources and methods, in order to reduce this disparity factor.

Evaluation of indirect methods

95. The Brass-type methods have been extensively used, but evaluations of its results are much more limited. Although the method provides mortality estimations less reliable and with less detail than the multiple-round surveys, it remains as a practical option as long as civil registration does not improve substantially. The population censuses of the next decade will provide a wide field of application to these methods. It is urgent, therefore, to have more complete evidence about its scope and limitations in the study of child mortality in the Third World.

96. The evaluation may have the following purposes:

a) To measure the error of estimations when the mortality structure is different from the model life tables used and to find alternative models that might be used. Simulation and empirical research is needed for this purposes.
b) The frequency and distribution of the errors in the declaration of children ever had and surviving children, its causes, and its effect in the mortality estimations.
c) The reliability of indirect methods in the analysis of mortality differentials.
d) In general, the robustness of indirect methods in the conditions of application required for studying child mortality in the Third World.

97. The evaluation requires the comparison with information provided by multiple-round surveys or reliable vital statistics.

98. It has been mentioned the availability of new methods of indirect estimation of mortality. The empirical evaluation of these new methods may be also considered, as well as more theoretical work to improve this field.

Particular age-structure of mortality

99. In some tropical countries, it has been described a special age-pattern of mortality, where high mortality in the second semester of the first year of life is extended to the second year, mainly. Cantrelle has emphasized the need to investigate its frequence and origin, its relation to causes of death, duration of breast-feeding, cultural patterns, etc.

100. The study of this problem requires data from multiple round surveys. The mortality surveys developed by World Health Organization in several countries and the mortality surveys conducted by I.F O.R.D. are increasing basic data for this purpose. A collaborative study of this and other sources may provide a significant contribution to this problem.

The causes of death

101. As already mentioned, the study of the causes of death in infancy and early childhood is important to explain the characteristics and differentials in that mortality as well as for determining the scope of maternal and child health program. Few of the Centers' research deals with this subject.

102. It might be considered that the inter-center program promotes and participates in a collaborative study of the restricted sources of information already available. Some of these sources are the following:

a) Countries or regions within countries - where the civil registration is acceptable completed.

b) Chile has a reliable vital statistics system that has permitted to study the causes of infant mortality in relation to parents education, father's education, birth order, age at death, etc., in the cohort of 1972 births (Taucher, 1978).

c) World Health Organization mortality surveys are aiming to investigate causes of death.

d) In three Central American countries, there exists a system of surveyance of infant malnutrition, with the collaboration of the INCAP (Institute of Nutrition for Central America and Panama). INCAP has several studies where demographic variables are considered in the study of prevalence and mortality by malnutrition. INCAP has informally expressed its interest in collaborative studies with demograhic centers.

103. Some of the subjects that may be considered in relation to the structure of causes of death are age, place of residence (urban, rural), availability and utilization of health services, education and other socio-economic and cultural contextual variables.

Effect of health programs on mortality

104. The evaluation of the effect of health programs on infant and child mortality is not simple. The effect of health interventions has to be separated from other components of socio-economic development, with which health care is frequently associated. On the other hand, there is a great variety of situations concerning the epidemiological transition of early life mortality and the development of health care among the populations of the Third World. In countries where mortality is high, socio-economic conditions are very unfavourable and health services are very limited, the main question is how much improvement in health and in mortality could be achieved with an organized primary health care covering the majority of the population, developed with limited professional personnel and health resources, and mainly carried with non-professional aid and the full participation of the community.

105. Multivariate analysis using rough indicators of health (such as doctors per population) cannot give a proper answer to this question. The research required must be developed with the participation of health experts and apparently goes beyond the possibilities of the inter-center cooperative program.

106. Perhaps it might be feasible to collaborate with cooperative studies aiming to evaluate the programs carried on in certain countries, in the above mentioned conditions.

The experience on mortality surveys

107. Multiple-purpose demographic surveys and mortality surveys will continue to be an important source of information on mortality in many regions of the Third World. Several methodological aspects of these surveys, especially in the important subjects of sources of errors and techniques to reduce them, have been published. Perhaps it is convenient to discuss whether further work should be done in this field.

108. There are other aspects of demographic surveys that have apparently received less attention, being important factors in the quality of the collected data. Perhaps the experience of the Centers may be analysed in relation to (a) selection and operationalization of variables, (b) formulation of questions, (c) selection and training of interviewers, (d) control procedures, etc.

August, 1979

FOOTNOTES

(1) It has been reported in Sri Lanka that the female surmortality covering ages up to 44 years in 1945-1947 is no longer observed in 1971, but it remains at ages 1-9 years (UN/WHO, Levels and Trends in Mortality since 1950, January 1979, Chapter on Asia).

(2) However, in some Asian countries, it has been observed that neonatal mortality includes more than half of the deaths under one year of age (UN/WHO, Levels and Trends in Mortality since 1950, January 1979, Chapter on Asia).

(3) *In a study covering 12 Latinamerican countries, it was found that 3 per* cent of national births occurred in women with higher education belonging to urban population, mostly residing in the national capital. These children were exposed to a risk of dying less than 40 per 1000 births and generated only 1 per cent of total deaths under 2 years of age. On the opposite, 50 per cent of births occurred in women of very low education or illiterate, the majority living in rural regions. The mortality in this group was as high as 120-200 per 1000 births and produced 67 per cent of total deaths under two years.

(4) "Since mortality is inversely related to socio-economic status, it stands to reason that the most effective way to reduce mortality is to reduce the socio-economic differences within population. However, it is not clear that the differentials have been getting smaller as general levels of mortality have declined. There is some evidence that the nutritional problems in parts of Asia are far from resolved and that the proportion of populations living below the "poverty line" is increasing. It also appears likely that mortality differentials between population sub-groups will get larger despite the successful implementation of public health programmes and programmes to control some of the major endemic and epidemic diseases. Increasingly, high mortality is manifestly a class problem -a problem of poverty, poor nutrition and ignorance" (UN/WHO. Levels and Trends of Mortality since 1950, January 1979, Chapter on Asia).

(5) A system to identify social class has been elaborated by Campanario and applied to a fertility survey in Costa Rica (González, G. et.al., Estrategia de desarrollo y transición demográfica: el caso de Costa Rica. CELADE, Noviembre 1978). Behm has tried an approximation to social classes using the population census information on occupation and occupational category (Behm, H. y Guzmán, J.M., Diferencias socio-económicas en el descenso de la fecundidad en Costa Rica, 1960-1970, CELADE, Serie A No. 1040, 1979). A discussion of methodological problems of social class classification for demographic use may be found in Torrado, S., Clases sociales, familia y comportamiento demográfico: orientaciones metodológicas. Demografía y Economía (México), Vol. XII, No. 3, 1978.

(6) "The demographer must have above all endeavor to explain a demographic phenomenon as a social fact, explain population events within their social and institutional contexts". (Tabah, L., quoted by Concepción, M., CICRED Meeting of Directors of Demographic Centers, Mexico, 1977).

(7) Amegandjin and Fargues have pointed out that the extensive use of surveys and adjustment techniques in Africa have a negative aspect: it has postponed a deep analysis of demographic phenomena and its relationships with socio-economic organization in Africa. (CICRED, Meeting of Directors of Demographic Centers, Mexico, 1977).

(8) "Widespread poverty, the lack of education, and poor nutritional, sanitary and health conditions interact in such a way as to make mortality reductions inordinately difficult. Whether or not all of these problems can be overcome in the absence of economic development is debatable. However, it would seem to be clear enough that the involvement of the people themselves is essential and that an adequate administrative infrastructure and determination on the part of the government to use its power to bring about fundamental social change are equally important. Some social reorganization and redistribution of wealth would seem to be required if the poor are to escape poverty, to be made literate and to be assured of an adequate diet - three prime requisites to reducing mortality to low levels". (UN/WHO. Levels and Trends of Mortality since 1950, January 1979, Chapter on Asia).

(9) It is interest to remark that the historic experience of today's advanced countries shows that infant mortality was one of the age groups most resistant to the decline. Significant declines were observed only at the end of XIX century or on early XX century. In a similar way, in Latin America, early child mortality has achieved greater and more continuous decline than infant mortality.

(10) The socio-economic condition in the agricultural sector of Latin America has been recently examined by the Economic Commission for Latin America (ECLA) and it is probably valid to a certain degree for other regions. The ECLA report points out that the problems of food, employment, income and living conditions have not been solved and, sometimes, they become worse. This situation does not depend on an insufficient expansion of production nor of the permanency of traditional agrarian structures, but they depend on the way in which the capitalist transformation of the sectorial productive system takes place: development of a sub-sector of modern agriculture, formed by a small number of medium and big entreprises, which concentrate the technological progress and the ownership of the land; and are connected by commercial, agro-industrial and financial mechanisms with the national and international market. As a result of this, the small producer has joined the salary earner to conform the majority of the rural workers of low income. The development of an agro-exporting sector has relegated the production of food for internal consumption to the more traditional sector, so generating the need to import food and creating a new dependency on the international market. Agrarian reforms have been limited and the farmers have not been able to organize themselves in order to defend their right to the land.

(11) "The majority of African countries are still operating health programmes based on the "outmoded" institutions left behind by the colonialists; institutions which cater for the needs of a small number of people to the detriment of a large chunk of the population. It appears therefore that economic growth is not benefiting the needy and with the size of the marginalized groups increasing, the poverty gap is being widened and inequality and dehumanization are on the increase; the poor are finding it more and more difficult each day to have access to basic necessities of life including health facilities. Thus, policies aimed at correcting this urban-rural structural imbalance as regards provision of health services will contribute a great deal to the formulation of a better health programme that aims at satisfying the health needs of a large section of the population" ... "The future trends in mortality in tropical Africa may depend more than they have in the recent past on economic and social development, and a concerted effort should be made to extend preventive medicine and public health services to reach the majority of the population, especially the rural folks. For the meantime, however, the traditional medicine will continue to permeate the lives of many Africans far beyond the year 2000", (Gaisie, S.K., 1979).

(12) Gerard has raised an interesting criticism to the logic usually applied in these studies. Independent variables are considered automatically as explanatory variables. Variables are selected on the basis of common sense and the hypothesis do not always consider differences among populations. If the expected relationship and sign is found, the hypothesis is considered validated. If not, the author is usually inclined to try to explain why the expected results were not found. (Gerard, 1979).

(13) On the other hand, while socio-economic development in Europe was favoured by the contribution of extended colonial dominions and the control of international markets, development in the Third World is essentially dependent on central economics. "Insofar as economic and social policies are concerned, it is clear that the internal policies of individual governments are often shaped by external forces. In particular, the attitudes and policies of the major world powers can profoundly affect domestic policies. Aside from ideological considerations, perhaps the most important outside influences relate to trade and finance, and the question of the relationship between these and the health status of the population deserves careful study. Major lending institutions are notorious for attaching conditions to essential loans to less developed countries which effectively hamstring the recipients" ... "It is clear that such external influences could easily account for the failure of many less developed countries to accomplish more in reducing widespread malnutrition and the numerous preventable diseases during the past decade or more. In this way, they undoubtedly form part of the explanation for the apparent and real slowdown or halt in the improvement in life expectancy indicated in the discussion above". (UN/WHO, Levels and Trends of Mortality since 1950, January 1979, Chapter on Asia).

(14) It has been said that, in several countries, there are sources of data which have not been fully exploited or researches that have not been published. Unpublished research of students in some Centers are other possible source of information. These and other possibilities may increase substantially the inventory of researches mentioned by the Centers.

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