WORLD HEALTH ORGANISATION (WHO)
ECONOMIC COMMISSION FOR AFRICA (ECA)
UNITED NATIONS STATISTICAL OFFICE (UNSO)
UNITED NATIONS CHILDREN'S FUND (UNICEF)

WHO/ECA/UNSO/UNICEF·REGIONAL TRAINING WORKSHOP
FOR STATISTICIANS AND HEALTH MANAGERS
IN HEALTH AND NUTRITION SURVEYS

Kadoma, Zimbabwe - 10 to 28 November 1986

DRAFT REPORT

I.____ATTENDANCE,_OBJECTIVES_AND_ORGANISATION_OF_WORK

1.   The WHO/ECA/UNSO/UNICEF   Regional Training Workshop for
Statisticians and Health Managers in Health   and Nutrition
Surveys was held at Kadoma (150 kms from Harare), Zimbabwe from
10 to 28 November 1986.

2.   Eighteen participants attended and represented both national
statistical agencies and ministries of health of the following
African countries: Botswana, Cameroon, Ethiopia, Ghana, Lesotho,
Malawi, Nigeria, Zambia and Zimbabwe.

3.   In addition to the organising agencies, the following
institutions also provided technical inputs to the workshop as
facilitators: International Labour Organisation (ILO); London
School of Hygiene and Tropical Medicine, United Kingdom; Insti-
tute of Tropical Hygiene, University of Heidelberg, Federal
Republic of Germany; Centre for Disease Control, Division of
Nutrition, Atlanta, United States of America; and Department of
Epidemiology and Community Medicine, University of Antwerp,
Belgium.

4.   The final list of participants and facilitators is attached
as Appendix 1.

5.   The Workshop had the following five objectives:

(a)   To provide or increase skills of national statisticians to
      plan and implement health and health-related survey prog-
      rammes in collaboration with national health authorities;

(b)   To sensitise national health managers to the potentials and
      limitations of health and heath-related information avail-
      able from on-going series of national household interview
      surveys, including the role these surveys can fulfill in a
      national health management information system;

(c)   To produce training material and guidelines for use in
      regional training programmes or for direct use in future and
      on-going national survey programmes;

(d)   To consolidate   experiences from   previous or on-going
      national survey programmes and to disseminate these exper-
      iences in a systematic framework in the form of guidelines
      to interested countries; and

(e)   To form a core of experienced national statisticians and
      health managers capable of serving as a resource group at a
      regional or international level to assist other countries in
      the planning and implementation of health surveys and in the
      utilisation of data from these surveys for health manage-
      ment.

6.   The topics covered in the Workshop sessions are shown in
Appendix 2 and are summarised in this report.

7.   A chairperson and rapporteur were nominated for each day of
the Workshop, and summaries of each module were prepared by these
rapporteurs.

II   OPENING SESSION

8.   The Workshop was opened by Dr. G. M. Mandishona (Director of Census and Statistics, Zimbabwe) who drew attention to the importance of data on health and nutrition, especially for countries like Zimbabwe which has adopted a policy of "Health for all by the year 2000". To be most useful, these data need to be part of an integrated set of economic and social data, comprising large components of demographic, social and economic statistics. He also pointed out that the health and nutrition surveys should be related both conceptually and operationally with other components of statistical systems.

9.   Dr Mandishona also called for a coordinated effort between statisticians and health managers to achieve mutual understanding and a proper utilisation of data collected in health and related surveys. He thanked the international agencies which were involved in the Workshop for bringing together experts from various fields and welcomed the participants to the Workshop.

10.   In his introductory remarks, Dr. M. Dlamini (WHO represent- ative in Zimbabwe) also thanked the ECA, UNSO and UNICEF, on behalf of the WHO Regional Director for Africa, for joining WHO in organising the Workshop, and expressed the appreciation of all concerned to the officials and Government of Zimbabwe for hosting the meeting.

11.   Dr Dlamini pointed out that health surveys are an indispens- able complement to administrative-based statistical systems on health and vital registration, especially in Africa where they are either non-existent or rudimentary. Health surveys are likely to provide information on the distribution and accessib- ility of health activities, data on health status and health- related behaviour, and data on information programmes which influence health.

12.   He made a special plea for data at the subnational or district level, and requested that the Workshop consider this issue and make recommendations concerning this vital information need.

III   WORKSHOP INTRODUCTION

13.   The rationale of organising the Workshop was explained. It was stated that in most developing countries there was a gap in the availability of population-based data in relation to health, since the coverage of health services was far from complete and the existing civil registration and vital statistics systems were seriously deficient. It was indicated that household surveys could be used to provide not only population-based data on health but also data on individuals not usually collected by health services.

14.   In this connection, the National Household Survey Capability Programme (NHSCP), which is a major technical co-operation effort of the entire United Nations family, was presented briefly. It was recalled that the NHSCP was designed to help interested developing countries obtain, through household surveys and in conjunction with data from censuses and administrative records, a continuing flow of integrated statistics for their development plans, policies and programmes and in accordance with their own

priorities. It was reported that the initiative for launching this Programme started in Africa, under the title "African Household Survey Capability Programme", before it was extended to all developing countries of the world through Resolution 2055 (LXII) of 5 May 1977 of the Economic and Social Council of the United Nations.

15. Participants were informed that, during the course of the Workshop, they were to use their experience and the knowledge gained in the Workshop modules, together with their understanding of their country's needs, to design a household-interview health survey. Project teams (in some cases comprising participants from more than one country) were created to carry out this Workshop project.

16. Subsequently, each country delegation gave a brief description of the household surveys which were undertaken or planned to be conducted in their country.

IV LIAISON PROBLEMS BETWEEN STATISTICIANS AND HEALTH MANAGERS (Module No. 1)

17. Liaison problems were identified in the following areas:

- lack of involvement of health managers in the overall planning and coordination of statistical programmes;

- failure of health managers to identify health needs and data;

- lack of collaboration between statisticians and health professionals in the various stages of implementation of health/nutrition surveys (project objectives, planning and organization, training of field staff, questionnaire design, concepts, definitions and classifications, data processing, etc); and

- lack of collaboration between statisticians and users in the interpretation and analysis of health and nutrition data.

18. It was noted that complaints of failure to maintain liaison came both from health managers and statisticians.

19. The meeting felt that the gap between health managers and statisticians cannot be fully bridged through use of formal committees (national statistics committee, technical committee, etc.). It was observed that in many African countries these committees did not seem to be functioning. It was suggested that a regular feedback (to committee) on the state of operations so far undertaken, achievements and failures should make such committees operational. Other approaches could also be used. These include regular workshops and seminars for potential data users to identify data needs, in-service training of data users, and informal discussions between health managers and statisticians.

20. The Workshop was informed that, in Ethiopia, an interdepartmental technical committee has been established. This committee is responsible for organizing and planning surveys, reviewing the

questionnaires, monitoring survey activities, and ensuring that Health and Nutrition Surveys reflect the government's priorities.

21. The meeting considered various issues relating to problems in liaison between users and statisticians. A question was asked on who should identify the felt needs. Is it the Ministry of Health, the Ministry of Finance, the Central Statistics Office or the funding international agency? This was raised because it was found that sometimes it is the Ministry and sometimes the funding international agency that decides on the data to be collected. Some participants indicated that there was a leakage of information from the developing countries that could be of value in helping them implement some of their health programmes. The Workshop was of the view that the tendency of CSO to carry out surveys independently of the Ministry of Health lessens the involvement of the Ministry in health/nutrition surveys. It also considered that the subjects covered by the survey should determine which unit within the Ministry of Health (Epidemiology or MCH Unit, etc) should be primarily involved in the activities. Lack of motivation and excessive workload were also cited among the major constraints in ensuring liaison between statisticians and health managers.

V GENERAL INTRODUCTION TO METHODOLOGICAL ISSUES IN HEALTH SURVEYS (Module No. 2)

22. The following methodological issues were introduced and are discussed more completely below:
- alternatives to interview surveys
- qualitative research
- response errors
- barriers to reporting.

23. The meeting considered the following alternatives for interview surveys:
- observation
- interview (formal and informal)
- records from facilities
- intervention studies.

24. The workshop also discussed the function and role of qualitative research. This should be able to answer the following questions:
(i) Why do people behave and think in the way they do?
(ii) What are the people's priorities?

25. In order to understand people's major problems, the following methods may be used in qualitative research:
(a) Group meetings
(b) Talk to key informants
(c) Use of "soundings".

26. It was felt that qualitative research should precede a questionnaire design.

27. On the issue of response errors, the meeting considered that these are normally due to:
- use of proxy reporting
- recall loss
- too many items
- sensitivity of issues involved.

28. When discussing the barriers towards reporting, the meeting considered questions which might violate social rules. Bias can be introduced due to:

a) Prestige bias
b) 'Halo' effect
c) Politeness on the part of the respondent
d) Unawareness of social niceties by the interviewer
e) Irrationality of the questions.

29. The module concluded with a discussion on factors which may be affect the measurement of prevalence rates of illness as elicited with or without a list of tracer conditions.

VI SOCIOECONOMIC, DEMOGRAPHIC AND OTHER CHARACTERISTICS OF HOUSEHOLDS (Module No. 3)

30. As part of this module, the workshop considered the following surveillance arc:

Events

Response   Collection
action   of data

Analysis
of data
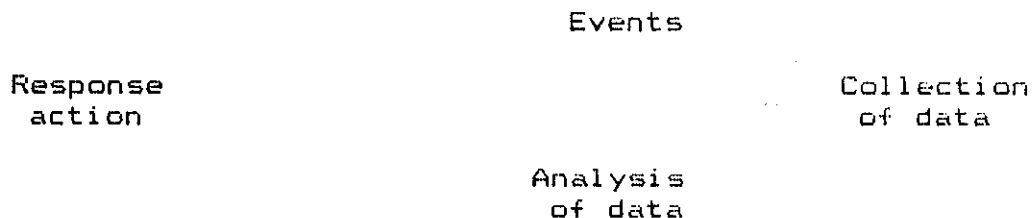
31. The meeting was told that information on household characteristics is collected in order to:
- Link variables to health and nutrition variables
- Set priorities
- Identify target groups
- Evaluate existing programmes

32. The following variables may be used when considering 'Social-Economic' status:

a) age/sex
b) possessions
c) type of shelter
d) fuel source
e) land ownership
f) water source.

33. These measures of social and economic status can also be regarded as a measure of 'risk', for example:
- Specific household characteristics can be associated with specific diseases;
- Refrigerator associated with incidence of diarrhoea;
- New wealthy associated with death due to diarrhoea;
- Total cash income associated with death due to malnutrition;
- Land ownership associated with malnutrition;
- Cash cropping associated with malnutrition.

34. Socioeconomic status may be measured differently in rural areas as compared with urban areas. For example, in rural areas

farm animals might be a surrogate for cash at hand in urban areas. Similarly, land size (rural) might equate with ownership of household equipment and furniture (urban), and ownership of agricultural equipment in rural areas may show the same status as ownership of transportation facilities in urban areas.

35. The meeting was advised that a variable may have different socioeconomic implications in rural and urban settings, and that there is need to check for seasonality for some of those data.

36. In summary, the workshop concluded that collection of data on household characteristics is important for understanding of the relationship(s) between socioeconomic status and health and nutritional status. Such information is needed to clearly identify high risk groups in the society.

VII ASSURING VALIDITY OF SURVEY INSTRUMENTS (Module No. 4)

37. In this module, participants were told that a survey is considered valid if it:
- represents reality
- measures what it is expected to measure.

38. The meeting particularly considered how one can check on the validity of people's health status. This can be done in some cases through examination and lab-tests. Sometimes physicians may obtain better results than lay interviewers if they probe for responses, but physicians are no better if they use the same questionnaire without probing.

39. Checks on consistency by re-interviews may also be useful to estimate the errors in reporting and recording data. Care should be taken when dealing with proxy reporting.

40. In general, physical examination and laboratory, or other diagnostic tests, are used for testing validity; re-interviews are used for testing consistency of survey answers.

41. The meeting was advised that it is important to determine the survey objectives and to test its validity before the survey is undertaken.

42. Indirect validation can be used on age groups in rural and urban areas by, for example, comparing expected and observed trends. Though validation may be expensive it is a necessary exercise and should be taken into account when budgeting for the survey.

VIII QUESTIONNAIRE DESIGN (Module No. 5)

43. In this module, the meeting was told that there are two types of questionnaires: self-administered and interview questionnaires. These can be sub-divided into structured and unstructured questionnaires.

44. When designing a questionnaire, the following steps were recommended:
- State the objectives of the survey
- Define concepts
- Derive valid indicators
- Formulate questions.

45. It is important to note that information on some variables is best obtained through observation (qualitative methodology).

46. Pretesting was considered essential, and it was recommended that all sections of areas to be sampled are represented in the pretest because of problems in definitions and translation.

47. A pilot survey should be conducted as if it is the main survey in order to test all the survey aspects: feasibility, operational aspects, time required, etc.

48. Then designing the questionnaire, there must always be a separate space for coding the answers. This will minimise errors both in the field and at the data entering stage. Preferably the supervisor or office staff, rather than the interviewer, should do the coding and pre-coded questionnaires should be used as much as possible.

49. Use of hand-held microcomputers in health surveys was to be discussed at a later date.

IX   ORGANIZATIONAL ISSUES OF HEALTH SURVEYS (Module No. 6)

50. Participants identified and discussed organizational problems which could hinder the smooth operation of a health survey.

51. Sometimes agreements reached with international donor agencies are modified and this necessitates an all round re-assessment and consequent delay in starting the survey.

52. At other times, aid recipients want donor agencies to undertake the survey as well. It was pointed out that donor agencies may not be technically competent to undertake the surveys they are funding. It was stressed that these were management functions which required detailed planning and monitoring.

53. The various stages of survey plan were then outlined. It was essential that all interested persons such as health managers should be involved in the initial planning stage. Coding and editing of data should not wait until the end of the survey and excessive 'perfectionism' in cleaning the data should be avoided.

54. The issue of Quality Control or Validation generated quite a lot of interest and was to be taken up at a later date.

55. It was emphasized that the translation of questions into local languages should be done by experts with both urban and rural background. Where the questionnaires are not printed in local languages and interviewers who understand the local languages are used, common terminology for KEY expressions should be identified.

56. A number of health problems with seasonal variations were identified. Since most disease conditions are influenced by the seasons, it is advisable for surveys to cover the whole year to eliminate the influence of the seasons, but the period of high and low frequencies should be identified for purposes of intervention. Where the survey period does not cover the whole

year some form of extrapolation may be done to estimate the
annual rate. If this is done the seasonal effects which may
inflate or deflate the extrapolated annual rate should be
clearly noted in the survey reports. Use of 'weights' in
estimating annual rates was judged to be better than the use of
straight line extrapolation. It was however agreed that what
was more important was the identification of risk groups rather
than the estimation of absolute numbers.

57. All the assumptions used should be clearly stated. Data
'bending' under the pretext of data cleaning should be avoided.

58. Administrative functions of planning and monitoring should
be spelt out in detail as well as the timing of field resources
needed for quality control. ·

X   SAMPLING_IN_HEALTH_SURVEYS_(Module_No._7)

59. The various issues involved in sampling were enumerated in
this module.

60. There was some disagreement on the issue of the appropriate
sampling unit in a health survey as to whether the ultimate
sampling unit should be the household or the individual. It was
however acknowledged that illness could be looked at as a
personal event although the risk may be a household problem.

61. On the question of providing or obtaining an unbiased
estimate, the issue of using ratio estimates where the denom-
inator is not known was raised. This was considered a problem.
The degree of bias would be minor for larger primary sampling
units.

62. If estimates are required with a certain degree of precision
then sample size should be made sufficiently large. Certain
characteristics, it was pointed out, do not have clustering
effect but variables which have such effect would require to have
the clustering effect allowed for. The clustering effect
manifests itself when there is underlying inter-cluster correl-
ation and when sample size is not sufficiently large.

63. Minimum sample sizes for a nutritional assessment survey for
a country, with a fixed number of districts, with a precision of
5% error and 95% confidence interval was demonstrated.

64. The calculation of the design_factor was also demonstrated.
The design factor was defined as the ratio of the standard error
derived from the multistage sample design to the standard error
assuming that a simple random sampling had been used. The
ratio measures the effect of a particular sampling design.

65. Each item in a health survey has a design effect but premium
should be placed on the important items in determining the sample
size to use.

XI   INTERVIEWERS'_SELECTION_AND_TRAINING_(Module_No._8)

66. In training interviewers, it was stressed that the training
of supervisors should be borne in mind. Supervisors should be
trained first and before the pre-test, and should also be

participants or even trainers in the training session for interviewers.

67. Participants then gave their countries' experiences. Most countries maintain permanent field staff, and there were recognized supervisors who must first be trained and sent to zonal centres to train interviewers in those centres. However, for large surveys or censuses such as the population census, the practice is generally to train all recruits and to appoint able ones from the interviewers as supervisors. It was nevertheless conceded that different approaches may be adopted depending on the circumstances of each country.

68. The background of the interviewers was considered important. There are those that cannot be changed - at least at the point of recruitment but there are usually enabling factors which should guide selection such as ability to know the local populations and to adapt themselves to their habits, to listen and write at the same time and to follow instructions.

69. When training interviewers, it is important to give them information about the survey, and particularly why it is being undertaken. They should also be told how much they will be paid. On the question of incentives, it was clear that such was an exception rather than the rule.

70. The importance of supervision was acknowledged. Regular meetings during the survey period should be organized to exchange views and discuss common problems. Every effort should be made to locate non-respondents due to non-contact as such a group may be special sub-group.

71. Discussion on the training of interviewers was continued in an evening session with the examination of case studies. The use of male or female interviewers should be selective depending on the culture of the population to be studies. Students, particularly medical students ought not to be used for such studies.

72. Participants were also reminded that there are alternatives to national health surveys, particularly at the district level as an important executive unit has perhaps the most information needs.

XII THE MEASUREMENT OF MORBIDITY (Module No. 9)

73. The topic was introduced with a role play of a patient presenting his illness to a doctor who then took further history and examined the patient; a diagnosis was then made, thus providing a professional definition of the illness. It was mentioned that what the patient then reports back to his family can be the illness defined in professional terms.

74. It was suggested that illness is perceived by the individual and disease is professionally defined.

75. A doctor, utilizing a cluster of symptoms, comes up with a diagnosis, giving due consideration to mediating and/or facilitating factors.

76.   In contrast, traditional healers and lay persons focus on the agent/cause of illness.   This, in combination with the definition of illness that is community orientated, forms the core of a folk diagnosis.

77.   Sources of misunderstanding between professionals and patients were classified into two major groups - conceptual and linguistic.   Thus, in the conduct of a survey, one would need to consider:
- (a)   The description of an illness by the commun...
- (b)   The use of easily identifiable terms y. symptoms.   tracer
- (c)   The use of locally acceptable terminology in question-ionnaire.
- (d)   The difference between perceived illness and spec... disease categories.   c
- (e)   The level of precision of a diagnosis.

78.   For each episode of illness, the symptoms are spread over a period of time and according to levels of severity, resulting in a three-dimensional picture for each episode.

79.   The following were noted to be important in a survey:
- (a)   choice of appropriate words;
- (b)   avoidance of double questions to minimize confusion as to what the response given applies to;
- (c)   clear definition of the recall period. This will vary according to restrictions imposed by the particular disease of interest;
- (d)   disease/illness severity is usually measured in terms of days in bed and/or restriction of usual activity;
- (e)   tracer symptoms are helpful when there is a specific disease sought;
- (f)   stress put to a question will vary according to interest e.g. general morbidity; specific morbidity; health care consumption.
- (g)   clear definition of the purpose of the survey.

80.   The classification/reporting of disease was also discussed at the workshop.   The prevalence/incidence of disease can be measured in various ways e.g. period prevalence, spells of illness per period of time, symptoms per 100 persons.

81.   When defining severity of illness, the following may be used: number of symptoms per illness, subjective feeling, prognosis, restricted activity and confinement to bed (as a proxy).   There is a high correlation between perceived severity and restricted activity.   The perception of severity is influenced by various factors which include social class, sex, age, chronicity of disease, and availability of service, and in addition, there are urban-rural as well as cultural differences.

82.   The validity of data may be improved by:
- (a)   Using short recall periods;
- (b)   Avoiding proxy reporting as much as possible;
- (c)   Tracer symptoms are helpful in reaching a diagnosis;
- (d)   Avoiding delicate/sensitive questions.

XIII SPECIFIC DISEASES, CONDITIONS AND SYMPTOMS (Module No. 10)

83. The topics of Specific Diseases, Conditions and Symptoms was a continuation of the previous topic on measurement of morbidity.

84. Designing model questions that can be applied in a real survey situation for specific diseases such as diarrhoea, malaria, acute respiratory tract infection and pulmonary tuberculosis in adults, was discussed.

85. Participants were asked to formulate 4 or 5 questions on the prevalence, duration and severity of diarrhoea, malaria, acute respiratory tract infection and pulmonary tuberculosis.

86. A recall period of 2 weeks for diarrhoea, acute respiratory tract infection and pulmonary tuberculosis in adults was recommended. For malaria, a 6 months recall period was to be used, while the question for TB could refer to the day of interview. In addition, the participants were asked to indicate how best one could test the validity of the answers given by respondents.

87. During the discussions of the exercises, there were some observations that related to the designing of specific questions on diarrhoea. The main observation was on the cut-off point for number of watery stools that warranted a child to have diarrhoea. Some participants felt that if a child had experienced 2 or 3 watery stools in a day then the child had diarrhoea. Others felt that one could rely on the mother's definition.

88. It was pointed out that different studies in various countries had used different cut-off points of the number of watery stools per day, (ranging from one to five) as a definition of diarrhoea.

89. According to WHO, 2 or 3 watery stools are the recommended cut-off points for a child to be classified as suffering from diarrhoea.

90. The problems of consistency and validity tests arose when discussing the questions on malaria. Consistency tests refer to the situation where two different groups of enumerators applied the same interview questionnaire to the same group of respondents. In validity tests, a reference test, for example, laboratory tests on blood slides, are done so as to verify the answers from respondents.

91. It was agreed, in the end, that validity tests are not to be recommended for National Household Surveys because of constraints being faced by many countries in Africa. Consistency tests, however, should be done while in the field.

XIV LONG-TERM DISABILITY (Module No. 11)

92. It was felt that due to problems with surveys on disability, the international classification of conditions should be employed. Generally, the topic was very difficult in the sense of having properly defined terminologies of impairments, disability and handicap.

93. The following definitions were recommended:
Impairments — missing or defective body part, paralysis, diabetes, mental retardation, etc.
Disability — Difficulty in seeing, speaking, hearing, writing, walking, conceptualizing or any other function within the range considered normal for human beings
Handicap — A disability which has interfered with the development of a person's capability to do what is normally expected at a certain age

94. During the exercises for this module, the participants were asked to give reasons for collecting information on impairments, disability and handicap. The following reasons were given:
- for collecting data on Impairments:
   (a) to link impairments to risk factors;
   (b) to estimate demand for corrective interventions;
   (c) as an indicator of future disability (that is, to get a magnitude of the problem in order to focus the government's attention);
   (d) to prevent the escalation of the problem of impairments e.g. road accidents causing impairments, etc.
- for collecting data on Disability:
   (a) to take curative action, e.g. replacing lost limbs by artificial limbs;
   (b) to take into consideration rehabilitation programme needs;
   (c) to prevent disabilities becoming handicaps.
- for collecting data on Handicapped Persons:
   (a) to take into consideration rehabilitation programmes;
   (b) to compare with labour force reservoir.

95. It was generally felt that the international definitions were very confusing because it was very difficult to have properly defined distinctions of impairments, disability and handicap. Other surveys conducted in countries were often only interested in functional limitations in doing certain activities. Thus, disability and handicap issues were more emphasized than impairments.

96. It was decided that using proxy respondents does not yield good results in such surveys. Thus it is better to use self reporting and for the interviewers to 'test' the disability (e.g. asking a person to walk some steps etc.).

XV   NUTRITION   (Module No. 12)

97. The following topics were covered in this module:

   —   Nutrition data collection in health surveys, including the definitions and components of nutritional inform-ation usually covered by household surveys, and the needs for data on nutrition and setting of priorities.

   —   Interpretation of the data for "individuals" and for "groups". Common techniques such as the Gomez, Wellcome Trust and McLaren scores, were discussed. The advantages and disadvantages of using the nutrit-ional indices of: weight-for-age, weight-for-height and height-for-age were discussed.

98. Problems in collecting the vitamin A deficiency were discussed, with special reference to the Ethiopia experience. It was eventually agreed that where countries have specific alternative names, such as "night-blindness" disease, such names should be used.

99. At the end of this module, the participants discussed the following exercises:
  (a) Listing of Government's responsibility in national nutrition;
  (b) Listing questions on breast-feeding practices; and
  (c) Simple questionnaire design in nutritional status measurements and practices.

XVI   QUALITY CONTROL (Module No. 13)

100. The discussion in this module covered the following areas of concern in quality control:

  (a) Definition of Quality Control (in surveys and the need for it);
  (b) Sources of errors by type;
  (c) Measures of control; and
  (d) Reporting quality of data.

101. The various types of sampling and non-sampling errors were discussed pointing out that quality control is aimed at minimizing non-sampling errors. Various possible sources of errors, and definite measures which could be taken to avoid them, were identified.

102. The meeting considered that:
  (a) Under non-response as a source of error, it was agreed that refusals should not be replaced, only absentees could be replaced, but still not indiscriminately. Re-visits/call-backs should be enforced. A randomly selected reserve of households should be organized to replace the absentees.

  (b) Long discussions were made regarding translation and back-translation. The Ethiopian experience was discussed, where translations were made only for the benefit of expatriate consultants.

103. It was proposed that translations and back-translations be made by different persons to check the accuracy of the translations, and thorough field-tests be done in such cases.

104. During the exercises, participants were asked to state what Quality Control is, and to make a plan for Quality Control in their respective country groups.

XVII WATER AND SANITATION (Module No. 14)

105. In this module, participants were informed as to the relationships between on the one hand socio-economic status and disease risk and on the other a family's access to water and its sanitation practices.

106. Participants were informed that water is essential for maintaining life both directly (through the prevention of

dehydration) and indirectly (through its roles in crop product-
ion, cooking and washing).

107. Problems of restricted access to adequate water can be
reflected in a number of ways in data describing family charact-
eristics. In general, poorer families have less access to safe
drinking water which in turn, may result in greater disease or
malnutrition among family members. Most of the two billion
people living in rural areas of poorer countries do not have
access to safe drinking water and are thus at increased risk of
water-related diseases.

108. Bacteria and viruses associated with water_contamination
diseases are transmitted in water contaminated by human urine or
feces. These include amoebic dysentery, shigella, cholera,
other bacterial and viral diarrhoeas, typhoid and hepatitis A.
Water_hygiene_diseases are those whose occurrence or severity can
be reduced by increasing water quantity for personal hygiene and
many of these are the same diseases listed above. Others are
skin or eye disease (scabies, lice, trachoma). Finally, several
water_contact_diseases such as schistosomiasis are of public
health importance.

109. Similarly, inadequate personal hygiene (for example: hand-
washing) and excreta disposal practices are responsible for a
large part of the excess disease burden borne by families of
lower socio-economic status. Excreta_disposal_diseases are those
whose transmission can be interrupted by sanitary disposal of
human feces and urine. In addition to the water disease describ-
ed above, these include ascariasis, hook worm, strongyloides,
whipworm and others.

110. The meeting came to appreciate that a clear understanding of
the current water and sanitation situation within a population is
essential to rationally plan improvements in these areas.

XVIII MORTALITY (Module No. 15)

111. During this module, participants considered the need for
mortality data, sources of that data, and so on.

112. Participants felt that countries wish to collect mortality
data using national health surveys because they need:
- to determine mortality levels;
- to identify risk groups;
- data in the absence of alternative sources or where
  available data are inadequate;
- to provide cause specific data;
- to provide up-to-date estimates;
- data collected is an indicator of the nation's health
  status;
- to provide health related information relevant to
  mortality;
- investigation of risk factors;
- baseline or pre/post interventions;
- trend assessment;
- to provide community-based estimates;
- to provide data for donor aid agencies.

113. In terms of alternative sources of mortality data, the following were suggested:
- vital registration: Out of the nine countries repres-ented at the workshop, only three (Ghana, Zambia and Zimbabwe) published data from vital registration, annually. None of the countries had coverage exceed-ing 40 percent.
- population censuses: All countries had conducted a population census, with latest census years ranging from 1963 (Nigeria) to 1986 (Lesotho).
- health facilities: All countries, except Malawi, had health facilities data available at subnational level with the data published at least annually.
- other sample surveys: Other sample surveys had been conducted in all the represented countries.
- small scale/intensive surveys: Small scale/intensive surveys had been conducted in only four countries - Botswana, Cameroon, Ethiopia and Ghana. The surveys were mainly for childhood diarrhoeal diseases.

114. The workshop considered various aspects of mortality data which countries might like to cover in a household survey.

115. Botswana, Cameroon, Ethiopia, Malawi, Nigeria and Zimbabwe were not intending to conduct a survey in the near future (most of these countries had just undertaken their health surveys). Surveys to be undertaken by the other three countries (Ghana, Lesotho and Zambia) are expected to collect data on infant mortality, mortality differentials, levels, causes, area differences and health service usage.

116. The following possible measures of mortality measures were discussed:
- the crude death rate (CDR)
- age specific death rate
- infant death rate (IDR)
- infant and child mortality.

117. Some examples of how data might be used and limitations in these uses were discussed:
- the number of infants dying under the age of one in a year, used in the calculation of CDR, includes infant deaths that were born the previous year. To solve this problem the use of separation factors was recomm-ended.
- The lifetable IMR on the other hand is the number of infant deaths to the number of live births for the same birth cohort.

118. The workshop considered some of the problems in the collect-ion of mortality data in household surveys. These include:
  (a) Selective under-reporting related to:
- Proxy reporting;
- older mothers;
- high parity mothers;
- children living away, grown up or died long ago;
- early infant death, especially if the child has not been named.
  (b) recall error leading to:
- border bias;
- rounding and digital preferences;

(c)   sensitivity
(d)   determination of cause
(e)   comparatively rare events (for example data collection
       on neonatal and maternal death would be difficult
       in a household survey).

119. Basic approaches to mortality estimation used in household
surveys were divided into two basic groups:

(a)   direct approach, which collects retrospective and
       prospective data for a fixed period, from full or
       partial birth history;

(b)   indirect approach, which collects data on children
       ever born, children surviving, adult mortality,
       orphanhood and widowhood.   The use of the U.N.
       Manual X (reference number ST/ESA/SER.A/81) for the
       detailed study of indirect techniques was highly
       recommended.

120. All Workshop participating countries had used the indirect
approach, using retrospective data.   Ghana, Nigeria and Zambia
had also used retrospective data.   Birth history data were used
in Ghana, Lesotho, Malawi and Nigeria.

121. The meeting felt that the following factors should be
considered in selecting either the direct or indirect approach:
       –   objectives of the survey
       –   sample design
       –   financial resources, manpower, data processing facilit-
            ies and technical support
       –   advantages and disadvantages of alternative approaches
       –   alternative sources of information.

XIX FERTILITY (Module No. 16)

122. The meeting considered such measures as crude death rate,
general fertility, age specific fertility rate and total ferti-
lity, and then questioned why fertility and fertility regulation
should be measured in a health survey.

123. Fertility needs to be measured in order:
       –   to measure levels (if no demographic survey)
       –   to establish a relation, if any, between infant/child
            mortality (if no demographic survey)
       –   to estimate fertility in relation to other household
            variables to assess demand for services by age (MCH).

124. The meeting was told that fertility regulation should be
covered by health surveys in order:
       –   to assess the effectiveness of family planning prog-
            rammes and effect of contraception on fertility
       –   to assess the availability, use and side effects
            of contraception.

125. The workshop also considered the direct and indirect links
between family planning and health.

126. The direct link related family planning with cause and
prevention of diseases.   For example: the pill and diseases
of circulatory system, and condoms for prevention against
sexually transmitted diseases.

127. The indirect links were the economic benefits from lower fertility leading to improvement in morbidity and mortality.

128. The meeting discussed methods for measuring fertility. Two methods were mentioned:
        (a) the direct method based on birth histories; and
        (b) the indirect method using children ever born and children surviving.

129. The workshop also discussed other important issues such as:
- the population of study, in terms of age limits, marital status (depending on the individual country's culture),
- the quality and type of interviewers,
- the sensitivity of some topics.

130. During the workshop, mock interviews in respect of "children ever born" illustrated how questions could be asked with and without probing and consistency checks. In situations where the month of birth was not known, other indicators such as season of birth could be used and the middle month used as an estimate.

131. The mock interview emphasized:
- interviewing skills necessary for data collection on birth history
- importance of interviewer checking for consistency of responses
- time taken to complete the history
- use of local calendar of events
- inclusion only of live births ('cries at birth')
- importance of dates especially if going to calculate birth intervals
- identification of suspicious birth intervals
- value of 'dummy' interviews for training of interviewers.

132. The meeting also considered how data might be collected for only a sub-set of a household's birth history. Two suggestions were made:
- a date should be fixed to mark the beginning of the period, preferably an event date (as was done in Botswana); and
- start with the history of the immediate last birth and work backwards to the end of the (say) 5-year period.

133. Finally, within this module, the meeting considered the following other issues:
- what to do with collected data especially when there are missing values and/or inconsistencies;
- need for extensive validity tests;
- data should be reported as they are;
- changing information should be discouraged;
- where mistakes are obvious and changes have been made, such changes should be noted so that reference can be made at the analysis stage.

XX___USE_OF_HEALTH_SERVICES_(Module_No._17)

134. The workshop discussed the reasons why health planners should know the extent of utilization of government health services for morbidity.

135. It was felt that planners should know:
- who uses health services
- who does not use health services and why they do not use them
- the appropriateness of the services offered
- the availability and accessibility of the services offered.

136. In order to know adequately the health demands planners may, among other things, want to know:
- type of morbidity
- causes of morbidity
- severity
- duration
- whether these are debilitating illnesses or not.

137. The was told that the categories of questions which were likely to be in a health survey included:
- Use of available health facilities;
- Reasons for using or not using a particular source of health care;
- The degree of satisfaction with care received from a specific source of health care;
- Attitudes towards various sources or providers of health care;
- Financial or other costs incurred in using a particular source of care;
- Physical accessibility of health care source, i.e. distance, transport availability.

138. An important question emerged on how attitudes towards the use of health care services (with particular reference to traditional healers), can be effectively measured, and whether national health surveys are the appropriate means to do so. Participants gave their experiences on the sensitivity of the question and their views on whether respondents would be willing to reveal any association with traditional healers.

139. When measuring the use of health services, the meeting considered that the following problems may be encountered:
- tendency for respondents to telescope the reference period and to bring salient and socially acceptable events into the recall period;
- omission of non-salient and socially unacceptable events;
- seasonality has to be taken into account;
- problems of multiple recall periods very important;
- great caution to be exercised against groups that could be omitted from the sampling frame.

140. The workshop discussed sample size considerations in relation to relatively infrequent events (e.g. incidence of morbidity) considered the level of disaggregation which users would need.

141. Consideration was also given to how to validate the measurement of the use of health services. Methods of how validation could be achieved include examination of medical records, home-based records, and seeding.

142. The meeting felt that the way in which the data are analyzed, should reflect the priority needs of health planners or managers. The results of such data analyses should provoke discussion and collaboration amongst the parties concerned. Subgroup analysis of the data is important.

143. The participants did an exercise on a critical appraisal of questionnaires and questionnaire designs.

XXI ALCOHOL AND TOBACCO (Module No. 18)

144. The speaker for this module opened the session with a comment on the continuing increase in Alcohol and Tobacco consumption in the world despite government attempts in some countries to reduce consumption.

145. In particular, there has been an overall decline in consumption for high GNP countries and steady rise in the low GNP countries.

146. Age and sex patterns have also been changing with more women smoking. The speaker presented data arising from a small scale study on smoking habits among different students in the U.K.

147. The meeting was also given data relating to the health risks of smoking. It was said that the direct effects included a mean loss of life of approximately 5 years if one smokes 20 cigarettes per day, and that the overall mortality of all cigarette smokers was 70% higher than non-smokers due to cancer, heart disease and bronchitis.

148. The indirect effects of smoking included:
-    Low birth weight for smoking mothers;
-    Malnutrition;
-    General occupation hazards.

149. In respect of alcohol, the meeting was told that alcohol production has increased by 28% in Africa, by 29% in Europe, and by 12% in USA. On a per capita basis, the consumption of important spirits has increased in Africa by 200% between 1970-1977.

150. The health risks of alcohol include:
-    Liver Cirrhosis
-    Cancer especially of the liver
-    Nutrition Deficiency
-    Cardiovascular Disorder
-    Brain effects
-    Alcoholic poisoning.

151. In addition, society is affected by:
-    violence
-    family disorder
-    work output reduced.

152. The workshop was told that the collection of data on alcohol and tobacco consumption and related health status is important because:
- Very few studies done on it
- Need for baseline information (to be able to monitor change)
- Rapidly increasing rates of consumption of both tobacco and alcohol in most African countries.

153. After the presentation, the participants carried out an exercise both on Health Services Use and Smoking. It was agreed that it is not easy to ask questions on the Use of Health Services and that a great deal of effort should go into questionnaire design. On Smoking and Alcohol Consumption, it was considered that there was very little data in Africa to encourage policy makers to take any steps, but that there were big potential problems. The government and the public have to be made more conscious of this problem.

XXII DATA PROCESSING (Module No. 19)

154. In this module, the participants discussed the need to plan for data processing so as to minimize delays in the release of results and efficiently use resources.

155. In particular, participants were warned against starting data collection without having designed the questionnaire and processing system in order to facilitate data edit/amendment and subsequent tabulation and analysis.

156. Some of the problems which may occur if data collection is started without adequate planning for data processing include:
- possible under-estimation of financial and other resources;
- possible need to transcribe data (inefficient);
- difficulty in coding;
- possible ambiguity in questionnaires;
- difficulty in using available software;
- delays and errors in resolving edit failures.

157. The meeting also considered the benefits and problems of using open ended questions. It was agreed that more opinions could be expressed and that the response is as given by the respondent (rather than the interviewers classification of the response). In addition, finer classifications may be possible in office coding.

158. However, the disadvantages of open ended response categories included delays in the interview while the interviewer recorded the response, problems with the legibility or brevity of hastily written responses, and difficulties in developing and assigning codes when there was a wide variety of responses.

159. The meeting discussed the problems involved in designing questions such that more than one answer is possible. Each answer is generally given a "Yes"/"No" value and simple cross-tabulation of all of these answers tends to give a table which was both sparse (i.e. large numbers of empty cells) as well as being difficult to understand.

160. In order to avoid these problems, it was suggested that important or user-specific answers could be isolated for tabulation and that the remaining answers could be combined as an "Other" grouping for a particular user's table. This might result in more tables but each would be more comprehensible than one large multi-variable cross-tabulation.

161. The meeting also considered the problems of using large and complex classifications. It was strongly recommended that office coding should be used for these classifications (and not interviewer field coding).

162. Mr Lwanga offered his ICD-WHO classification based on lay reporting and suggested that any interested participant could have a copy.

163. The participants discussed the issues involved in interview vs office coding, and also considered the need for data entry verification. It appeared the experience of using data entry verification differs greatly in Africa.

164. The workshop also considered the issues involved in data imputation (i.e. in cases where there is an expected response and there is none either due to non-response or due to interviewer error). For subsequent data tabulation and analysis, it is useful to separately identify these answers (e.g. with a code "9") and to allow users to make there own decisions on imputation.

XXIII DATA ANALYSIS (Module No. 20)

165. The presentation for this module related mainly to:
- Dimensions of data analysis
- For what policy issues and priorities
- Who is responsible for data analysis
- What are the steps for data analysis
- By what means are data tabulation and data analysis carried out and what are the tools.

166. The participants also discussed an exercise on the relationship between users and producers of statistics when carrying out data analysis. It was agreed that it is not entirely up to the "client", but should be a collaboration between the statistical agency and the data users. During this discussion, it was also pointed out that the data users should give their specifications for data during the planning stages of the survey.

167. The discussion on data analysis also covered the need for district level analysis. The method of disaggregating information at district level was discussed at length. It was also underscored that information is needed and will be utilized at the small area level. It was suggested that further study should be undertaken on, the methodology for calculating small area estimates by adjusting survey results using administratively based data

XXIV REPORTING SURVEY RESULTS (Module No. 21)

168. The presentation of this module started by asking the question: What are the qualities of a "good" Report? and the participants felt that a survey report should:

- Relate the target audience
- Use simple language
- Describe the methodology
- . Be timely
- Be comprehensive but not too long
- Have a clear and logical structure
- Specify the limitations of the survey
- Use as high a quality presentation as resources permit.

169. It was recommended that the following types of survey reports should be produced:
- Preliminary Report
- Principal Report
- Summary Report
- Technical Report

and that there was also a need for progress reports and "press releases".

170. The above types of Reports had been produced, to some extent, by countries such as Ethiopia, Nigeria, Botswana and others.

171. Timeliness was stressed. Participants indicated that in their countries, it took between 4 and 24 months to issue a survey report. Information can also be disseminated through seminars or workshops, the purpose of which is to sensitize and inform users and to create a climate favourable to carrying out the necessary actions. It was stated that in a "Press Release", one has to be clear and have no ambiguity.

172. The timing of the release of a report may be sensitive and agencies may need to announce the date of the release well in advance.

XXV PRESENTATION OF COUNTRY PROJECTS

173. On 27 and 28 November, each group of participants presented a report in which they summarised the result of their deliber- ations on the content and design of a household survey to meet their country's user needs in the field of health/nutrition.

XXVI EVALUATION OF THE WORKSHOP

174. At the end of each week of the Workshop, an evaluation of the Workshop was undertaken through a questionnaire distributed to the participants who were invited to give their opinion on the module handouts, on the teaching of each module and on the organisational aspects of the meeting in general.

175. In addition, country participants were invited to a volunt- ary evaluation of the Workshop on the evening of 26 November 1986. Representatives of five countries attended.

176. The following comments were made on the five objectives which had been set before the Workshop:

(a) To provide or increase skills of national statisticians to plan and implement health and health-related survey prog- rammes in collaboration with national health authorities - Participants felt that this target had been achieved. However, for some participants, the newly acquired skills

may not be tested for some time because resources to carry out surveys were not always available in their countries.

(b)   To sensitise national health managers to the potentials and limitations of health and heath-related information available from on-going series of national household interview surveys, including the role these surveys can fulfill in a national health management information system - This target had been achieved for the few health managers who had attended. The Workshop would have benefitted if more health managers had attended.

(c)   To produce training material and guidelines for use in regional training programmes or for direct use in future and on-going national survey programmes - This target appeared to have been achieved, but the value of the training material in other forums was yet to be assessed.

(d)   To consolidate experiences from previous or on-going national survey programmes and to disseminate these experiences in a systematic framework in the form of guidelines to interested countries - This target had been achieved in that the participants had learned from the experiences (both good and bad) of Nigeria, Botswana and Ethiopia, but the information has not yet been systematically disseminated. The publication of the modules prepared for the Workshop may not necessarily do this because, in general, the experiences of the African countries in this field had been presented in an ad hoc manner, rather than systematically. The meeting considered that separate modules should have been programmed into the Workshop so that each of the countries with previous or on-going health surveys could have presented their experiences in greater detail.

(e)   To form a core of experienced national statisticians and health managers capable of serving as a resource group at a regional or international level to assist other countries in the planning and implementation of health surveys and in the utilisation of data from these surveys for health management - It was thought that this objective may have been too ambitious in that many of the attending countries had not yet carried out health surveys and so the participants were relatively inexperienced in these surveys. Nevertheless, the Workshop was successful in improving the contacts between the participating countries and this may lead to improved intra-regional cooperation.

177. In summary therefore, the meeting concluded that the Workshop had been generally successful, and had satisfied all but perhaps the last objective.

178. The meeting also evaluated other issues, including the length, location and number of participants at the Workshop.

179. It was felt that the three week Workshop was too long, and that this may have been the reason for the poor attendance of health managers. It was suggested that a two week Workshop would have been better, and that this may have been achieved by tighter controls on discussion to avoid duplication, by more evening work and by cutting the number of modules from 24 to (say) eight. At the same time, the participants also stated that there was not

enough time to discuss detailed issues that had interested them. It was also recognised that a _training_ workshop requires more time for learning, and that a series of conference papers with limited discussion would not have achieved the stated objectives.

180. The meeting complimented the organisers on the location for the Workshop. The isolated nature of the place (of kms from Harare), its comfortable accommodation and the ex (150 training facilities had contributed to the success of the Workshop.

181. In respect of the number and type of participants, meeting felt that the number of participants (15) was optima. but that there should have been more health managers. The meeting felt that there had been too many facilitators, particul-arly in the first two weeks. At the same time, the participants felt that the interaction between facilitators and participants had been excellent.

XXVII CLOSURE OF WORKSHOP

182. On the afternoon of 27 November, a representative of the Zimbabwe Ministry of Health closed the workshop on behalf of the Minister of Health. She drew the participants' attention to the advantages of household surveys and to the growing need for information on health and nutrition.

183. The Ministry spokesperson described the Zimbabwean priorities in this area and particularly emphasised the need for District level statistics.

184. Finally, in closing the workshop, she once again thanked the agencies involved in the workshop for sponsoring the meeting.

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APPENDIX 2

WHO/ECA/UNSO/UNICEF REGIONAL TRAINING WORKSHOP FOR STATISTICIANS AND HEALTH MANAGERS
IN HEALTH AND NUTRITION SURVEYS, KADOMA, ZIMBABWE
10-28 NOVEMBER 1986

	MONDAY 10 NOVEMBER	TUESDAY 11 NOVEMBER	WEDNESDAY 12 NOVEMBER	THURSDAY 13 NOVEMBER	FRIDAY 14 NOVEMBER
MORNING	Introductory speeches	Why use Health Interview Surveys	Assuring validity of survey instruments	Organizational issues of health surveys	Measurement of morbidity General considerations
"	Workshop introduction and background to NHSCP	Liaison problems between statisticians and health managers	Questionnaire design	Sampling in health surveys	Measurement of morbidity General considerations
AFTERNOON	Country presentations	General introduction to methodological issues in health surveys	Questionnaire design	Interviewer selection and training	Country group work
"	Country presentations	Socio-economic, demographic and other characteristics of households	Free time	Interviewer selection and training	Country group work

	MONDAY 17 NOVEMBER	THESDAY 18 NOVEMBER	WEDNESDAY 19 NOVEMBER	THURSDAY 20 NOVEMBER	FRIDAY 21 NOVEMBER
MORNING	Measurement of morbidity specific diseases	Nutrition (continued)	ALL DAY VISIT TO CSO SURVEY PROJECT	Water and sanitation	Mortality
"	Health examination surveys	Nutrition (continued)		Water and sanitation	Mortality
AFTERNOON	Long term disability	Quality control		Country group work	Fertility
"	Nutrition	Nutrition (continued)		Country group work	Fertility

	MONDAY 24 NOVEMBER	TUESDAY 25 NOVEMBER	WEDNESDAY 26 NOVEMBER	THURSDAY 27 NOVEMBER	FRIDAY 28 NOVEMBER
MORNING	Use of services	Coverage by health services	Data analysis	Reporting of results	Presentation of group work
"	Use of services	Use of tobacco and alcohol	Data presentation and use	Feedback from users	Presentation of group work
AFTERNOON	Uses of survey data for nutrition planning	Data processing	Free time	Country group work	
"	Group work	Data processing	Free time	Country group work Closing Ceremonies Reception	