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PRINCIPLES AND RECOMMENDATIONS FOR A VITAL STATISTICS SYSTEM

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PRINCIPLES AND RECOMMENDATIONS FOR A VITAL STATISTICS SYSTEM

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PREFACE

The principles and recommendations for a vital statistics system were adopted by the Statistical Commission at its sixteenth session in 1970. 1/ They attempt to reflect the needs and resources of countries at different stages of development and to outline an integrated system of vital statistics conceptually centred on, though not restricted to, a comprehensive system of civil registration. This constitutes a revision of the Principles for a Vital Statistics System. 2/

It is hoped that the principles and recommendations will assist individual countries in the production of a wider range of vital statistics than has existed up to now, and that these statistics will provide a foundation for the areas of study which have been demarcated by the Population Commission, endorsed by the Economic and Social Council in its resolution 1084 (XXXIX) and by the General Assembly in resolution 2211 (XXI).

The recommendations have taken into consideration the data requirements suggested by: (1) the Ad Hoc Committee of Experts on Programmes in Fertility (E/CN.9/203), 3/ convened in 1966; (2) the Ad Hoc Committee of Experts on Programmes in Demographic Aspects of Urbanization (E/CN.9/218), 4/ convened in 1967; and (3) the United Nations/World Health Organization Meeting on Programmes of Analysis of Mortality Trends and Levels (E/CN.9/221), 5/ convened in 1968.

Account has also been taken of a wide variety of background materials and activities at international and regional levels; among these was the survey undertaken by the Statistical Office of the United Nations in 1964 which provided systematic and up-to-date information on vital statistics practices in 51 countries. In addition, use was made of regional reviews of various aspects of vital statistics systems. 6/

The views of the specialized agencies and of individual demographers and specialists in related fields have been noted, as well as the recommendations of a large number of international meetings on the types of data required for new developments in demographic and related studies, and on techniques for improving existing systems of data collection or for instituting new methods. Notable among

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1/ See Official Records of the Economic and Social Council, Fiftieth Session, Supplement No. 2, paras. 100-106.

2/ United Nations publication, Sales No. 53.XVII.8.

3/ See Official Records of the Economic and Social Council, Forty-fourth Session, Supplement No. 9, chap. VIII, section B.

4/ Ibid.

5/ Ibid., Forty-eighth Session, Supplement No. 3, para. 18.

6/ Economic Commission for Africa, "Methods and problems of civil registration and vital statistics collection in Africa" (E/CN.14/CAS.3/8).

the latter are the four regional seminars on civil registration and vital statistics, the proceedings of which have contributed materially to the recommendations. 7/

The first draft revision of the principles (E/CN.388/Add.1) was placed before the Statistical Commission at its fifteenth session, in 1968. 8/ The Commission expressed pleasure that the first major step in the work of revising the principles had been completed.

In accordance with resolution 11 (XV) of the Statistical Commission, 9/ the draft was then circulated to States Members of the United Nations and members of the specialized agencies, to regional commissions, to other regional bodies and to interested specialized agencies, for their review. A second draft (E/CN.3/411) was subsequently prepared, taking into account comments received as a result of the circulation of the first draft. The second draft was placed before the Population Commission at its fifteenth session 10/ in 1969, and the Statistical Commission at its sixteenth session 11/ in 1970.

The Statistical Commission approved the principles and recommendations, 11/ requesting that they be augmented by an index and glossary of terms, and emphasizing the importance of collecting accurate, comprehensive vital statistics and noting the need for improvement of such statistics in both developed and developing countries. Accordingly, it welcomed the presentation of the principles and recommendations as an important step in the effort to develop adequate vital statistics throughout the world. At the request of the Commission, the Economic and Social Council adopted the following resolution (1564 (L)) in April 1971:

The Economic and Social Council,

Noting that the Statistical Commission, at its sixteenth session, adopted a set of principles and recommendations for the improvement of vital statistics, 11/

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Further recalling its resolution 1307 (XLIV) of 31 May 1968, in which the Council requested the Secretary-General to undertake a World Programme for the Improvement of Vital Statistics,

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7/ Final Report of the First Inter-American Seminar on Civil Registration, Santiago, Chile, 1954 (United Nations publication, Sales No. 55.XVII.7); Final Report of the Second Inter-American Seminar on Civil Registration, Lima, Peru, 1964 (United Nations publication, Sales No. 65.XVII.4); Final Report of the African Seminar on Vital Statistics, Addis Ababa, Ethiopia, 1964 (United Nations publication, Sales No. 65.XVII.6); and Report of the Seminar on Civil Registration and Vital Statistics for Asia and the Far East, Copenhagen, Denmark, 1968 (United Nations publication, Sales No. E.70.XVII.15).

8/ See Official Records of the Economic and Social Council, Forty-fourth Session, Supplement No. 10, para. 140.

9/ Ibid., para. 142.

10/ Ibid., Forty-eighth Session, Supplement No. 3, para. 31.

11/ Ibid., Fiftieth Session, Supplement No. 2, paras. 100-106.

Recognizing the important role of vital statistics as a primary source of national data for achieving the above-mentioned purposes,

1. Requests the Secretary-General to publish the "Principles and recommendations for a vital statistics system" 12/ in English, French, Russian and Spanish and to distribute them widely to States Members of the United Nations or members of specialized agencies, to regional economic commissions and other appropriate regional bodies, and to specialized agencies;

2. Further requests the Secretary-General to give assistance to developing countries in the implementation of these principles and recommendations by mobilizing all available resources, both international and bilateral, to help in the very large task of assisting those countries to develop, improve and maintain civil registers of vital events and to use these registers for statistical purposes as well as other sources of vital statistics as provided in the World Programme for the Improvement of Vital Statistics.

12/ E/CN.3/411 of 15 September 1969 and E/CN.3/411/Annex of 26 June 1970.

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INTRODUCTION

1. The objective of the present principles and recommendations is the same as that stated in the Introduction to the Principles for a Vital Statistics System, 1/ namely, to assist national statistical services in the development and improvement of national vital statistics and of their comparability, in order that the scope and reliability of these statistics will be adequate to the role they play in a general system of statistics, viewed primarily as a basis for informed national economic and social planning.

2. The first principles for a vital statistics system (adopted in 1953) 2/ were conceived as particularly applicable as guides to countries in which vital statistics were either already produced by a registration system of the conventional type or which, in developing vital statistics, contemplated the adoption of the traditional system. This nominal restriction of the principles was in recognition of the fact that the conventional method of obtaining vital statistics data from registration records is of limited applicability to statistically developing areas, and that, for these areas, alternative methods might have to be considered for use during a transitional or interim period.

3. Since the approval of the principles by the Economic and Social Council (Council resolution 469 D (XV)) in 1953, a large number of former colonial dependencies have emerged as independent nations. This has created a situation calling for adoption of ad hoc measures if these countries are to acquire with the requisite speed statistical data adequately describing the levels and trends of mortality and fertility and the relationships among various demographic, economic and social conditions. In the absence of more adequate statistics on the components of population growth, the developing countries will be unable either to formulate their plans on a sound basis or to assess their progress in implementing these plans.

4. The present principles and recommendations therefore follow the spirit of resolution 8 (XII) of the Statistical Commission in outlining a system which includes not only the techniques of conventional civil registration, but also the use of sample surveys and other less direct techniques for estimating the main vital rates until a truly comprehensive system of civil registration is established. As these less direct techniques have already been adopted by a number of countries in Asia, Africa and Latin America, it is now possible to assess both their utility and the limitations to which they are subject.

5. It must be emphasized that, while international organizations and individual countries, whether in the developed or the less developed areas of the world, fully recognize the need for a system of civil registration in the long run, they also recognize that the developing countries face serious obstacles to the

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1/ Principles for a Vital Statistics System: Recommendations for the Improvement and Standardization of Vital Statistics (United Nations publication, Sales No. 53.XVII.8).

2/ See Official Records of the Economic and Social Council, Fifteenth Session, Supplement No. 5, paras. 79-88.

achievement of comprehensive civil registration systems, in the short run. Thus, for most developing countries, the techniques outlined in chapter VI of these Recommendations should be regarded as having a duel purpose: (1) they are interim measures for meeting the urgent need for basic data, pending the achievement of comprehensive registration and (2) they are techniques for assisting in the implementation and improvement of civil registration systems already in existence through diagnosis of difficulties and the assessment of completeness.

6. In most developed countries civil registration already functions with reasonable effectiveness as a source of vital statistics despite a number of problems of organization and definition. Yet here, too, supplementary methods can be useful for evaluating the quality of registration data and also for extending their scope as, for example, in the case of: insufficient socio-economic data on fertility or mortality; insufficient data for compilation of fertility histories of individual women; imperfect diagnosis and/or recording of cause of death; and the absence of data relating to cause of death in related family members in one generation or in successive generations. While it would not be reasonable to demand of a civil registration system, which is essentially legal in nature, that it cover all such topics, it is reasonable to ask that a vital statistics system encompass means by which such data requirements may be met; for studies based on data of this kind have a durable interest stemming from the potential significance of their findings for influencing future policies and for raising the health component of living standards. The supplementary or auxiliary methods described in chapter VI, especially the ad hoc surveys can be utilized to meet some of these needs in developed countries. It must be pointed out, however, that the practicability of certain of these studies depends to a large extent on the development of computer techniques suited to combining data by record-linkage. 3/

7. The major changes from the 1953 Principles for a Vital Statistics System consist of: (a) broadening of the definition of a vital statistics system to include both the civil registration method and other techniques of obtaining data on vital events; (b) expanded exposition of the use of vital records and vital statistics; (c) greater emphasis on the need for integration of a vital statistics system with other fields of statistics; and (d) great insistence on the need for evaluation of the completeness and accuracy of results.

8. The principles and recommendations are set forth in seven chapters. Chapter I outlines the uses of vital statistics, while chapters II to IV describe, respectively, (1) the characteristics of a vital statistics system (including the events to be investigated and their definitions), (2) the topics to be investigated in respect of the vital events, together with their definitions and specifications, and (3) the general principles and contents of a recommended tabulation programme. The remaining three chapters, V-VII, describe, respectively, the civil registration method as a source of vital statistics data, the role of sampling in collecting and processing vital statistics and methods for evaluating the quality of a vital statistics system.

9. It is recognized that a vital statistics system depends upon administrative and legal arrangements, many of which are matters of purely national concern.

3/ See for example, "Demographic Attacks on Genetic Problems" by L. L. Cavalli-Sforze in The Use of Vital and Health Statistics for Genetic and Radiation Studies: Proceedings of the Seminar sponsored by the United Nations and the World Health Organization, Geneva, 1960 (United Nations publication, Sales No.: 61.XVII.8), pp. 223-224.

Therefore, the principles and recommendations for a civil registration system (chapter V) do not cover all registration practice; they deal only with those aspects of registration which have a bearing on the statistical report in terms of its content or its collection (and hence with the comparability of resulting statistics) and not with the legal connotations, such as a model law.

10. The recommendations for the incorporation of additional elements in a vital statistics system are for similar reasons limited to those considerations most directly affecting the collection of the data rather than to the precise administrative structure required.

11. The principles and recommendations contained in this document are not mandatory requirements on Governments; they are mainly intended as guides to the countries in their development and appraisal of vital-statistics services. They are expressed in general terms to permit world-wide application and adaptation to national needs and practices.

12. A guide to the implementation of the Principles and recommendations will be provided by the Handbook of Vital Statistics Methods 4/in a forthcoming revision which will discuss these principles and recommendations in greater detail. Until this revision becomes available, the present edition of the Handbook, which was prepared in connexion with the 1953 Principles, can be consulted.

4/ United Nations publication, Sales No. 55.XVII.1.

I. USES OF VITAL RECORDS AND VITAL STATISTICS

13. The establishment or improvement of a system of vital statistics depends on demonstration of the need for such a system. The need for the vital-statistics system will, in turn, be based on a demand for the products which the system will yield. Since registration of vital events is the initial and fundamental component of the system, there should first be a demonstrated use for the product of this activity, namely, the records of live births, deaths, foetal deaths, marriages, divorces and such other events as can be registered. Secondly, there should be a well-justified need for statistics based on these records. These uses for both records and statistics must be important enough to justify governmental action to meet these needs. The most important uses of such records, and of the statistics developed from them, are set forth below. 1/

A. Uses of vital records

14. For the individual, the civil registration records of birth provide legal proof of identity and civil status (including name, parentage, ancestry or lineage); age; nationality (citizenship); 2/ dependency status; legitimacy status; etc. on which depend a wide variety of rights, particularly in regard to the exercise of civil functions, entitlement to family allowances, care of children, tax deductions, insurance benefits, education, and other benefits; property ownership and inheritance, etc. The death records provide legal evidence relevant to claims to inheritance of property, to insurance on deceased persons, to rights of surviving spouse to remarry, to claims for family allowances where the death creates financial need, etc. Marriage and divorce records are the basis for claims involving the status of women, such as dependency and alimony allowances, tax deductions, provision and allocation of specific types of housing and numerous other facilities which relate to a married man and his wife, including claims to a change of nationality on the basis of marriage. Divorce records are most important to establish the right to remarry.

15. The protective value of live birth, marriage and divorce records has been officially endorsed by the United Nations in a number of actions. The Universal Declaration of Human Rights (General Assembly resolution 217 A (III)), adopted in

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1/ A more comprehensive exposition may be found in Handbook of Vital Statistics Methods, chap. II.

2/ It should be noted that while the birth register will give documentation of place of birth of the child and perhaps also of his or her parents, legal provisions governing nationality differ from country to country and in certain circumstances may require option by the child on reaching a particular age. Also, aliens may acquire nationality by residence or other qualifications. Therefore, while the civil registers may attest nationality of parents at the time of the birth of the child, they cannot give universal evidence of nationality itself, but only grounds on which nationality may be established.

1948, proclaimed in article 15, that (a) everyone has the right to a nationality, and (b) no one shall be arbitrarily deprived of his nationality nor denied the right to change it. The basic right to a nationality provided by the Declaration of Human Rights, which depends on having one's birth legally recorded, was reinforced by the adoption in November 1959 of the Declaration of the Rights of the Child (General Assembly resolution 1386 (XIV)), which affirmed, in principle 3, that "The child shall be entitled from his birth to a name and a nationality". The International Covenant on Civil and Political Rights in article 24 states that "Every child shall be registered immediately after birth and shall have a name" (General Assembly resolution 2200 A (XXI), annex). The establishment of "a civil or other register in which all marriages and divorces will be recorded" was urged by the General Assembly in its resolution 843 (IX) as early as 1954. Article 3 of the Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriage (General Assembly resolution 1763 A (XVII), annex, adopted and opened for signature 7 November 1962) lays down that "All marriages shall be registered in an appropriate official register by the competent authority". In 1965, the General Assembly in its resolution 2018 (XX), principle III, adopted a recommendation on the same subject. The substantive provisions of the Recommendations are very similar to those of the Convention, although the Convention is more specific on the machinery for the implementation in that it recommends that Member States should bring the recommendation before the national authorities competent to enact legislation, at the earliest moment and no later than November 1965.

16. Divorce registration was most recently endorsed by the Economic and Social Council in its resolution 1068 F (XXXIX) adopted 16 July 1965.

17. For administrative purposes, birth records are the basis for public health programmes for post-natal care of mother and child, and may be used when needed for programmes of vaccination and immunization, premature-baby care, assistance to the physically handicapped, etc. The individual death records are used as initial indicators of the existence of infectious and epidemic diseases and the need for immediate control measures. They are also used in public safety, accident prevention and crime prevention and eradication programmes; in the clearing of files, such as disease-case registers, social security, military service files, electoral rolls and tax registers. Marriage records are used administratively as proof of establishment of a family or household and hence to initiate family-benefit programmes related to health, housing, etc. They also serve to clear administrative files on programmes dependent on single marital status, alimony payments, etc. Divorce records serve similar administrative purposes.

18. The significance of civil registration to the improvement of public administration has also received attention. For example, participants in a seminar on central services to local authorities, held from 29 June to 10 July 1964 at Zaria, northern Nigeria, concluded that although the registration of births, marriages and deaths could be discussed with reference to statistics, "it is, however, much more than a statistical problem because with increasing mobility it is vitally important for good administration that every person should be able to prove his or her civil status by an internationally accepted document". 3/ The Seminar recommended that guides or comparative studies be prepared on a number of

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3/ Economic Commission for Africa, "Seminar on Central Services to Local Authorities", (E/CN.14/UAP/37), para. 17.

subjects of immediate interests to African countries, and that these be followed by meetings of officials with responsibilities in the fields concerned. Among the fields specifically cited were "Problems of registering births, marriages and deaths; especially the division of functions between central government and local authorities; action to fill gaps in the register and to replace missing registration certificates; international co-operation in this field". 4/

19. It is beginning to be recognized that civil registration also bears some significance to social defence, especially as it pertains to juvenile delinquency. In line with this interest, the Expert Group Meeting on Social Defence, held at Monrovia, Liberia, 18-31 August 1964, recommended "that machinery for the proper registration of births and the issue of birth certificates should be set up where adequate provision for such purpose has not already been made". 5/ The Group went on to note that high priority should be given to maintaining and strengthening the cohesiveness of the family as a unit and recommended as conducive to this end the "compulsory registration of all forms of marriage (including marriage by native law and custom), and the enactment of more rigid rules for separation and divorce". 6/

20. Officially authenticated records of births, deaths, marriages, divorces, annulments, etc. are the essential elements in maintaining a population register. Changes in physical, civil or geographic status of the family enter the population register through records of these events, and also through records of change of residence.

21. Finally there are the numerous scientific uses of vital records, not only in purely demographic inquiries but also, as recent developments in the study of fertility and mortality emphasize, as the starting point in certain types of longitudinal genetic and radiation studies 7/ as well.

B. Uses of vital statistics

22. One of the most important uses of vital statistics, whether these statistics are obtained by registration or by some other means, is in the demographic analysis prerequisite to planning for economic and social development. Such statistics yield information on the rate and trend of population growth and on the behaviour of its components, and, by aggregation over time, on population size, structure and (migration excluded) geographic distribution. Given a base, current estimates of population size can be made, and projections of population 8/ built up on the basis of the probable trends of natality, nuptiality and mortality as derived from study of these factors and their interaction with economic and social as well as other demographic factors.

23. The aggregation of population and the vital events to which it has been subject in an intercensal period may be compared with the census enumeration at the end of the period and the differences in total size and in numbers in each

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4/ Ibid., para. 126 (a) (viii).

5/ Economic Commission for Africa, "Report of the Expert Group Meeting on Social Defence" (E/CN.14/328-E/CN.14/SODE/30/Rev.1), para. 22.

6/ Ibid., para. 24.

7/ The Use of Vital and Health Statistics for Genetic and Radiation Studies: Proceedings of the Seminar Sponsored by the United Nations and the World Health Organization, sessions II, IV and V.

8/ Methods for Population Projections by Sex and Age (United Nations publication, Sales No.: 56.XIII.3).

sex/age group taken as an estimate of the net gain or loss by international migration. Manipulations of appropriate data (where available) may be devised to yield comparable regional estimates and also to measure internal transfers. These possibilities, particularly the measure of internal migration, are of special interest in view of the importance of such information and its relative scarcity. 9/

24. The interaction of demographic, economic and social factors is so important and complex an aspect of the development process that increasing differentiation is required in the study of the factors which influence birth, death and marriage: urbanization, education, occupation, housing, religion, family structure, income and patterns of expenditure amongst households or families are all likely to be of some significance. Information on such matters will not only enhance the understanding of the demographic process as such, but also provide, where applicable, data required for the national accounting in which the state of social and economic development is reflected and summarized.

25. Amongst demographic factors, the influence of marriage, and the consequent importance attaching to statistics of marriage, is sometimes overlooked or taken for granted by reason of the concentration on natality and mortality as the direct determinants of the natural growth of population and its composition by sex and age. However, increasing attention is being directed to statistics of marriage as a measure of the formation of new family and/or household units, to marital fertility, to the relation between marital status and mortality and between marital status and economic activity status of women, and to the dissolution of marriage by divorce, separation or death. In an extended form such data could be used to examine the "life-cycle" of the family with a view to predicting changes in family (and/or household) size 10/ through the joint operation of these factors. Alternatively, the onset of changes in the trend of population growth may be diagnosed by longitudinal studies of fertility of women by duration of marriage and age at marriage, and the conclusions reached may be amplified by the study of any differentials that may relate to such factors as education, occupation, income and the effects of urbanization on the traditional social structure.

26. The social and economic implications of such changes are far-reaching, involving as they do changes in the pattern of demand for the staples of life: food, nutrition and shelter; and for the ameliorations of bare subsistence: health, education and welfare. In the matter of housing, for example, family size and the pattern of saving and investment among families will jointly influence effective demand and must therefore be taken into account in estimating housing needs 11/ and the capacity to satisfy them.

27. Again, the dissolution of marriage by divorce or separation creates social problems of the possible dissolution of family units and economic problems of support and care for children.

9/ Methods of Estimating Basic Demographic Measures from Incomplete Data (United Nations publication, Sales No.: 67.XIII.2).

10/ The concept is examined and illustrated in American Families, by Paul C. Glick, (New York, Wiley, 1957).

11/ Methods of Estimating Housing Needs (United Nations publication, Sales No.: 67.XVII.15), pp. 56-57 For additional detail, see also "Uses of marriage and divorce statistics", 1958 Demographic Yearbook (United Nations publication, Sales No.: 58.XIII.1), chap. I.

28. Data on illegitimacy are required in order to assess the extent, scope and trend of the problem in order to develop programmes for services on behalf of unmarried mothers and their children. In the United States, the National Council on Illegitimacy offers the considered opinion that the welfare of both mother and child is best safeguarded through the documentation of legitimacy status in a confidential medical-health section of the birth certificate. 12/

29. For these and for many other purposes too numerous to list exhaustively, improvement and extension of the statistics of marriage, marital fertility (and also of illegitimate births), divorce and separation are urgently needed. In the less developed countries, where most marriages may be unrecorded because of the prevalence of customary rather than civil sanctions, efforts must be made to encourage the registration of at least formal marriage and to obtain statistics of other marital unions and statuses.

30. In the framework of demographic trends, development plans can be formulated in terms of over-all economic targets and in terms of planning for health, welfare, family size, education, housing, population control programmes, etc. These plans in turn depend on vital data incorporated into projections of needs for food and nutrition, health services, education facilities, technological and scientific skills in manpower, housing, and so on.

31. Continuity in the supply and analysis of vital statistics is essential to the evaluation of the operation of certain social and economic plans, as are also trends in demographic indicators of the level of living, such as the expectation of life at birth and the infant mortality rate. 13/

32. The intrinsic interest of demographic analysis, and the utility of the conclusions derived from such analysis, are paralleled by the interest and utility of vital statistics in public health and medical research; in, for example, the study of morbidity and of the trends in mortality by age, sex and cause. The changing pattern of cause of death from infectious to chronic diseases is itself partly a result of the application of the results of medical research, which have been a powerful influence in the reduction of mortality from specific causes and in the extension of average life expectancy. Further advances can also be anticipated here from new technical possibilities for amassing personal and family histories; possibilities which should increase the power of morbidity analysis and open the way for further improvements in the health status of the population.

33. Vital statistics are also employed for determining administrative action in connexion with the programmes of governmental agencies other than those concerned with public health, and also in relation to numerous professional, private and commercial activities. Planning and production of public and private housing and educational facilities; planning and operating social security

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12/ United States Department of Health, Education and Welfare, National Center for Health Statistics: The Registrar and Statistician, vol. 32, No. 9, September 1967.

13/ Report on International Definition and Measurement of Standard and Levels of Living: An Interim Guide (United Nations publication, Sales No.: 54.IV.5).

programmes and private insurance enterprises; production of consumer goods such as medicines, food, clothing, furniture, and equipment for infants and mothers, as well as household equipment in general; provision of medical care facilities for deliveries, services for interment are among the many activities that depend on information produced by the vital statistics system.

34. At the international level, vital statistics are of the utmost interest in providing bases for comparison and evaluation of the differentials between countries, sub-regions and regions, and for tracing over time the demographic stages by which the world and its many geographic, social, political and economic divisions progress in response to, and/or act as a determining influence in, the process of social and economic development.

35. These needs, as well as new needs which can be expected to arise or to be recognized in the course of time, must all be met by national vital statistics systems. To meet these needs adequately the system must operate according to certain well-defined principles which are applicable at every step on the way.

36. At the same time, the system must be flexible enough to incorporate new methods or to adapt old ones to the purpose in hand, particularly in view of contemporary issues such as the effects of radiation, genetic factors in morbidity and mortality, and the formulation of population policies. These issues require a broader approach to vital statistics, an approach in which man may be viewed both as an individual and as a member of his family (descent) group. 14/ There remain some technical difficulties in record linkage, although the basis for a solution of these appears to exist, at least in part, in the power of electronic machines. Substantively, however, there is a need for some modifications of the traditional scope of a vital statistics system.

14/ See Harold B. Newcombe, "Use of vital statistics". Proceedings of the World Population Conference, Belgrade, 30 August-20 September 1965, Volume II (United Nations publication, Sales No.: 66.XIII.6), para. 2.

II. THE CHARACTERISTICS OF A VITAL STATISTICS SYSTEM

A. Definition of a vital statistics system

37. For purposes of these principles and recommendations, a vital statistics system, irrespective of how it is organized, is defined as the total process of (a) collecting by registration, enumeration or indirect estimation, of information on the frequency of occurrence of certain vital events, as well as relevant characteristics of the events themselves and of the person(s) concerned, and (b) compiling, analysing, evaluating, presenting and disseminating these data in statistical form.

38. The vital events on which data should be collected in a vital statistics system are live birth, death, foetal death, marriage (statutory as well as non-statutory formation of marital unions), divorce, annulment, judicial separation, adoption, legitimation and recognition, all of which are defined for statistical purposes in paragraph 46. Other events of recognized demographic 1/ importance, such as (1) change of place of residence, i.e., migratory movement (both internal and external); (2) change of citizenship, (e.g., naturalization), and (3) change of name, are not included because information on these is usually derived from other statistical systems, such as population registers or port statistics.

39. The great value and utility of legal records in economic and social development tends to produce a conceptual and practical framework for the continuous provision of statistical data on vital events. Because of the fundamental importance of civil registration to the efficient operation of a vital statistics system, events not usually subject to civil registration, e.g., migration and naturalization, are ordinarily excluded from vital statistics coverage. Nevertheless, there are other sources of vital statistics than civil registration records, both in developed countries where civil registration is already operating fairly efficiently, and in the developing countries where registration is, in the majority of cases, still seriously inadequate.

1. Priority in method of collection

40. The recommended long-term goal is the establishment of a vital records and statistics system which will yield reliable vital statistics capable of meeting all needs for such data. In working toward this goal, it may for a time be necessary to utilize methods other than registration to produce reliable estimates of the incidence of the events in question.

2. Priorities in registration and/or collection of data on vital events

41. In establishing or improving a vital statistics system, priority should be given to setting up procedures for the registration and/or collection of information

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1/ Vital statistics, together with population and migration statistics, constitute the field of demographic statistics.

on (1) live births, (2) deaths, (3) marriages and (4) divorces. Among these, first priority should be given to births and deaths (Economic and Social Council resolution 1307 (XLIV), paragraph 2) because it is these events that are basic to the measurement of population growth rates and also because it is recognized that, due to specific family patterns and cultural values, it may not be feasible, in many developing countries, to give a very high priority to the collection of data on marriage and divorce.

42. The reasons for the distinction are many, but it may be noted that civil law marriages do not play the same exclusive role in Africa and Asia that they do in western societies. Many marriages constituted by religious or tribal ceremonies often go unregistered; and there are often extra-legal consensual unions and temporary marriages with special arrangements for their dissolution. Data based on registration of statutory unions, and in some instances, of religious ceremonies may have value for administrative purposes, but the needs of demographers, sociologists, economists and other users are seldom met by such data. Sample surveys may be used to gather data on the beginning and end of all kinds of marital unions. Particular attention is drawn to the desirability of exploring methods of obtaining information on non-statutory marital unions ("common-law" or "consensual" marriages) with recognition of the fact that, given their characteristics, the collection of information on these unions is not usually a part of the conventional registration method.

43. Provision for collecting information on the frequency and characteristics of foetal deaths should have lower priority than that on live births, deaths, marriages and divorces. Nevertheless, registration of all foetal deaths irrespective of gestational age is a desirable goal. As a minimum countries should seek to register foetal deaths occurring after the 28th completed week of gestation.

44. Arrangements for registration of annulments, judicial separations, adoptions, legitimations and recognitions, should have a lower priority than foetal deaths, although these, too, are an ultimate registration goal.

B. Definition of each vital event for statistical purposes

45. The definition of each event on which data are to be collected for vital statistics purposes should conform, in so far as possible, with the definitions for statistical purposes given in paragraph 46 below. If the legal concept or definition in any country cannot be harmonized with these, provision should be made to report the events for statistical purposes, as defined below, or in accordance with definitions which do not differ in principle from those below. If this is impossible, full description of divergencies should be given wherever statistics of these events appear.

46. The recommended statistical definitions are as follows:

(1) LIVE BIRTH 2/ is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live-born. All live-born infants should be registered and counted as such irrespective of gestational age or whether alive or dead at time of registration, and if they die at any time following birth they should also be registered and counted as deaths.

(2) DEATH is the permanent disappearance of all evidence of life at any time after live birth has taken place (post-natal cessation of vital functions without capability of resuscitation). This definition therefore excludes foetal deaths.

(3) FOETAL DEATH 2/ is death prior to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the foetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

The three major categories of foetal death recommended by the World Health Organization are as follows: EARLY FOETAL DEATHS at less than 20 completed weeks of gestation; INTERMEDIATE FOETAL DEATHS at 20 but less than 28 weeks; and LATE FOETAL DEATHS at 28 weeks or more. 3/ The term "stillbirths" should be used only if it is essential for national purposes, and it should in that case be regarded as synonymous with late foetal deaths.

ABORTION appears in the International Classification of Diseases in two places: (a) as a disease or cause of death of a woman 4/ and (b) with

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2/ The definitions of live birth and foetal death have been adopted by the World Health Assembly under article 23 of the Constitution of the World Health Organization (Official Records of World Health Organization 1950, 28, 17 and 1967, 160, 11 and annex 18). The WHO Expert Committee on the Prevention of Perinatal Mortality and Morbidity considered the existing definitions of live birth and foetal death, and noted that in many ways these had become inadequate. It recommended that WHO review these definitions in order to adapt them to present and future requirements throughout the world (see World Health Organization Technical Report Series, Geneva, 1970, No. 457, pp. 53-54).

3/ Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, 1955 Revision, vol. 1 (Geneva, World Health Organization, 1957), p. xxii.

4/ Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, 1965 revision, vol. 1 (Geneva, World Health Organization, 1967), p. 243.

reference to the foetus. 5/ It is defined, with reference to the woman, as "any interruption of pregnancy before 28 weeks of gestation with a dead foetus. 6/ There are two major categories of abortion: SPONTANEOUS and INDUCED. INDUCED ABORTIONS are those initiated by deliberate action undertaken with the intention of terminating pregnancy; all other abortions are considered as SPONTANEOUS. 7/ The induction of abortion is subject to governmental regulation in most, if not all, countries. This regulation varies from complete prohibition in some countries to abortion on request, with services provided by governmental health authorities, in others. Between these extremes, the legislatures of some countries have attempted to define the conditions under which pregnancy may lawfully be terminated, and have established procedures for authorizing abortion in individual cases. 8/

(4) MARRIAGE is the act, ceremony or process by which the legal relationship of husband and wife is constituted. 9/ The legality of the union may be established by civil, religious, or other means as recognized by the laws of each country.

(5) DIVORCE is a final legal dissolution of a marriage, that is, that separation of husband and wife which confers on the parties the right to remarriage under civil, religious and/or other provisions, according to the laws of each country.

(6) ANNULMENT is the invalidation or voiding of a marriage by a competent authority, according to the laws of each country, which confers on the parties the status of never having been married to each other.

(7) SEPARATION, JUDICIAL is the disunion of married persons, according to the laws of each country, without conferring on the parties the right to remarry.

(8) ADOPTION is the legal and voluntary taking and treating of the child of other parents as one's own, in so far as provided by the laws of each country.

(9) LEGITIMATION is the formal investing of a person with the status and rights of legitimacy, according to the laws of each country.

(10) RECOGNITION is the legal acknowledgement, either voluntarily or compulsorily, of the paternity of an illegitimate child.

5/ Ibid., p. 298.

6/ Ibid., p. 243.

7/ World Health Organization Technical Report Series, Geneva, 1970, No. 461, p. 8.

8/ Ibid., p. 32.

9/ See Encyclopaedia Britannica, 1957, vol. 14, p. 950.

C. Principles for collection and compilation of vital statistics

1. Designation of responsibilities

47. Responsibility for the maintenance of standards for the design and conduct of the various operations by which vital statistics are collected and compiled, should be allocated to a central government agency or agencies. The place of the agency or agencies in the administrative structure will depend on local circumstances, but the aim must be to achieve centralized and peripheral co-ordination amongst the civil registration service, general statistical service, population and migration statistical services, health statistical service, etc., and with research projects which involve consideration of demographic factors, as, for example in the economic, social or medical field. 10/ This last provision is of increasing interest today because of the emphasis being placed on genetic and radiation studies and on record-linkage as the appropriate technique of investigation, 11/ and the potentialities of similar methods in a vital statistics system.

2. Integration and co-ordination

48. The contemporary emphasis on social and economic planning requires a high degree of statistical integration; for the assessment of needs in particular fields and the establishment of targets depend upon the availability of a large number of statistical series, the data of which must be logically consistent. This close relationship between planning and statistics points to the need for an over-all view of the required series 12/ and of the statistical organization for obtaining them.

49. While the arrangements within a given country will naturally depend on the administrative structure existing in that country, centralized co-ordination of statistical activities is desirable in order to ensure that the structure functions efficiently in producing statistics which are based on standard concepts, definitions and classifications and which are embodied in tabulations which meet the needs of the consumers without duplications or omissions. This is important not only in regard to data which are specifically collected by statistical agencies

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10/ In some countries it has been found that co-ordination has been facilitated by the establishment of National Committees on Vital and Health statistics (of which the Statistical Commission took note at its fifth session) or committees or councils of a similar character. The establishment of National Committees was recommended by the World Health Organization at its First World Health Assembly in 1948 and is endorsed by the Inter-American Statistical Institute. See Report of the Vital Statistics Sub-Committee to the Committee on Improvement of National Statistics, Washington, D.C., March 1961 (Inter-American Statistical Institute document, 4358a-2/12/62-125).

11/ Use of Vital and Health Statistics for Genetic and Radiation Studies: Proceedings of the Seminar Sponsored by the United Nations and the World Health Organization.

12/ The basic series required in the developing countries are listed in Statistical Series for the Use of Less Developed Countries in Programmes of Economic and Social Development (United Nations publication, Sales No. 59.XVII.10).

but also for statistical data which are by-products of administrative activities such as those collected by the civil registration system itself, social security services, medical services, labour bureaus, education departments, and alien registers.

50. The definitions of vital events adopted in the statistical and administrative systems should be consistent with those employed for the same events in the vital statistics system. In the case of demographic statistics in general, it is particularly important to co-ordinate the concepts, definitions, classifications and tabulations with those employed in population censuses, in intercensal field surveys, and in international migration statistics. This applies not only to vital events, such as births, deaths and marriages, but also to characteristics of the persons experiencing these events, such as economic activity, and place or division of residence. The base population, de facto or de jure, must also be considered in order to ensure consistency between the numerator and denominator of the vital rates at a given point of time and over longer durations of time.

51. For example the total population series compiled by a number of European countries and some other developed countries such as Canada and the United States, relate to the resident population. As most European countries plan to use the concept of the resident population as the basis for compiling total population figures in their next censuses, the number of countries which compile their total population series on this basis will probably increase during the following decade. Figures for births and other vital events used by these countries for the purpose of computing vital rates should therefore refer to events occurring to residents of the country in order to ensure consistency between the numerators and denominators of the ratios. Events occurring to non-residents while they are temporarily in the country may be distinguished from those occurring within the national territory to residents on the basis of information on place of usual residence. Difficulties arise, of course, in cases where events occur to residents while they are temporarily absent from the country. However, as these events have to be taken into account in one way or another (at least in the case of births and deaths) in updating the estimates of the total resident population, it would seem that they could also be taken into account in compiling figures on vital events for use in computing vital events.

52. Where international standards have been agreed upon, as in the field of population censuses, 13/ and in a number of fields of interest of the specialized agencies (such as the definition of live births and foetal deaths, 14/ the classification of cause of death, 15/ the investigation of economic

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13/ Principles and Recommendations for the 1970 Population Censuses (United Nations publication, Sales No. 67.XVII.3).

14/ The accepted definitions, agreed upon by the World Health Organization and endorsed by the Statistical Commission, as cited in para. 46.

15/ Manual of the International Statistical Classification of Disease, Injuries, and Causes of Death, 1965 revision, p. 478.

characteristics 16/ and of education). 17/ it is recommended that these standards be applied in the vital statistics system, wherever applicable. If local conditions require a departure from these standards, it would serve a useful purpose in maintaining comparability of results if the local classifications could be expressed in a form at least convertible to the international standards.

53. Integration of a system of demographic statistics may in the future be achieved through developments in the use of electronic computers. The full-scale operation and smooth running of such a system would be facilitated by the allocation of an invariant identity number to each birth recorded, and to each immigrant, the same number to be used throughout the vital records of the individual concerned. 18/ Such systems are gaining favour in some developed countries where registration is both complete and prompt, and where the resources are available for their implementation. They are not feasible in countries where registration is deficient.

3. Coverage

54. A vital statistics system should include all vital events occurring in all geographic areas and in all population groups in the national area.

55. If sampling techniques are employed, the sample should be so designed as to be representative of all population groups in the national area, or in such subnational areas or groups as may be under consideration.

4. Continuity

56. The principle of continuity in collection and compilation of vital statistics should be observed in order that the data may reflect short-term fluctuations, including seasonal movements, as well as longer-term movements. Continuity is most easily achieved when civil registration is fully established, because monthly

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16/ International Standard Industrial Classification of All Economic Activities (United Nations publication, Sales No. 68.XVII.8) and International Standard Classification of Occupations, Revised Edition, (International Labour Organisation publication) Geneva, 1968.

17/ United Nations Educational, Scientific and Cultural Organization, "International Statistical Classification of Education", (ISCED/WG/1).

18/ By extension, the system could be made to perform the function of a population register, with greater ease in the derivation of statistical data than heretofore. This in turn would offer the possibility of a more satisfactory recording of migratory movements, at present beyond the resources of many countries. Because of this, and because a population register does not differ in principle from a civil registration system in respect of obtaining information on and legally documenting the vital events, a population register system is not treated in detail in the principles and recommendations. See Methodology and Evaluation of Population Registers and Similar Systems (United Nations publication, Sales No. E.69.XVII.15).

(or quarterly) and annual reporting become a routine part of the system. Where measures such as sample surveys are employed to obtain estimates of the vital rates, special efforts may need to be made to ensure that data become available on a frequent and regular basis.

5. Confidentiality

57. Confidentiality of personal information in registration records should be safeguarded in so far as consistent with the use of these records for administrative and statistical purposes (see chapter V). The statistical reports of registered events or those obtained by surveying should be opened to the widest possible legitimate use consistent with the needs for confidentiality as determined by each country. This Principle takes note of the right of the individual to expect that information given in confidence to the registrar or interviewer will be used only for statistical or administrative purposes. While recognizing the importance of maintaining the confidential nature of personal information, the recommendation proposes that the employment of these data for statistical purposes not be unduly limited.

6. Goal of the compilation programme

58. The compilation of vital statistics should have as its ultimate minimum goal (1) the provision of total monthly or quarterly summary counts of live births, deaths, marriages and divorces (and of foetal deaths if these are included in the collection programme) on a time schedule prompt enough to provide information for administrative or other needs; and (2) the production of detailed annual tabulations of such type and on such time schedule as will make possible their effective use for the scientific analysis of the interrelationship between demographic, economic and social factors, for planning, operating, and evaluating public health programmes, and for other purposes as required, particularly in regard to the formulation and evaluation of economic and social plans. In so far as possible, such statistics should be comparable on an international basis and lend themselves to international analysis.

III. TOPICS TO BE INVESTIGATED IN A VITAL STATISTICS SYSTEM, THEIR DEFINITION AND SPECIFICATION

A. Factors determining the selection of topics

59. To satisfy national and international needs for vital statistics, provision should be made in all countries for the investigation of a group of basic topics, in addition to such other topics as a country may deem desirable and practicable in its own particular circumstances.

60. The criteria for selection of these topics should be primarily their use in meeting national data requirements implied in the uses of a vital statistics system set forth in chapter I and the tabulation programme in chapter IV. However, consideration must, of course, also be given to the type and quality of the means available for collecting such information.

61. Another major consideration in the selection and formulation of topics for investigation in connexion with vital events is the desirability of achieving regional and world-wide comparability. National and international objectives are seldom incompatible, however, given the fact that international recommendations, being based on a broad study of country experience and practice, are recommendations of definitions and methods which have successfully met general national needs. Where particular circumstances within a country require departures from international standards, publication of the data should be accompanied by an explanation of these departures and an indication of how the national presentation can be adapted to the international standards.

62. The topics investigated should also be those upon which the respondents will be willing and able to provide adequate information. Topics likely to arouse fear, local prejudice or superstitution should be avoided; as should questions which are complicated and difficult for the average respondent to answer easily. The exact phrasing of each question needed to obtain the most reliable responses will of necessity depend on national circumstances.

B. List of topics

63. Information on a wide variety of topics can be obtained by both the registration method, i.e. by continuous observation, and by the field survey method, i.e. through retrospective or follow-up questioning. The former is described in chapter V, the latter in chapter VI. Correspondingly, the list of recommended topics is classified into two sets according to the most appropriate method for the collection of data pertinent to them: (1) those for which the necessary information is most appropriately collected by civil registration and (2) those for which it is most appropriately collected by the field survey method.

1. Topics to be investigated by the civil registration method

64. The statistical unit investigated by the civil registration method is the vital event, i.e. the birth, death, foetal death, marriage or divoice (for order of

priorities recommended for registration of these events, see paras. 41-44). Information is collected on the incidence of the event in time, on the characteristics of each event, and on certain characteristics of persons directly concerned with it.

65. Using the criteria set forth in paragraphs 60-62, a list has been drawn up of topics which need to be investigated for each of these events; these topics are set forth in paragraph 71 below.

66. This recommended list comprises two "collection priorities" in recognition of the fact that not all countries will be able to conform to the standard at the same time, or to operate at a uniform pace in achieving complete coverage of all recommended topics. The first priority topics, marked with an asterisk (*), are designed to constitute an immediate goal, while those unmarked constitute a less urgent goal. In actual practice, this list of recommended topics will need to be supplemented for judicial and administrative purposes to permit identification of the persons and events under consideration. This is accomplished by inclusion of: (1) registration number and (2) place of registration, and also by inclusion of information on: (3) characteristics of the registrar, (4) characteristics of the informant, etc. No recommendations are made here concerning any of these items.

67. For convenience, the recommended topics, all of which are purely statistical, are grouped under two main headings: "(i)" characteristics of the event in question and "(ii)" characteristics of persons involved directly with the event, such as the child, the foetus, the parents, the decedent, the partners in the marriage, the divorcees. Within each of these headings, a further distinction is made between "direct topics" and "derived topics". The former are those for which data are collected by asking specific questions on the statistical report. Although data for the "derived topics" also come from the statistical report, they do not necessarily come from replies to a specific question. The figure for "total live births" occurring during a specified time, for example, is derived from a count of the live births recorded in the statistical report based on the question on "date of occurrence (delivery)". Such "derived topics" may, perhaps, be more correctly considered as tabulation components, but they are listed as topics in order to emphasize the fact that this information should in some way be produced by the statistical report.

68. The recorded information on the recommended topics listed below, under "(i)" and "(ii)" will result in tabulations of the frequencies and characteristics of each vital event. These absolute numbers are in many cases of limited value unless they can be expressed as rates or ratios by relating them to a corresponding base. In some instances, particularly with respect to infant and foetal mortality rates or ratios, the numerator (infant or foetal deaths) and the denominator (live births) are generally based on information obtained from the same source (collecting system). In most instances vital rates are based on corresponding population totals and their characteristics. The primary sources of population totals are population censuses and surveys, on which intercensal population estimates are generally based. In order to stress the importance of these data in designing the vital statistics system, a third heading, "(iii) characteristics of denominator (live births or population-at-risk)", is added to the list of recommended topics.

69. The paragraph numbers in parentheses after each topic refer to the paragraphs in section C in which the definition and specifications of the topic are presented.

70. Information obtained by means of civil registration is usually collected on a 100 per cent basis. However, in some situations it may be necessary to operate a sample registration area as described in chapter VI. In either case, however, the list of recommended topics in paragraph 71 remains the same. Where resort is had to a sample registration scheme rather than to complete coverage, the necessary information on the population-at-risk is usually obtained by means of a sample field inquiry.

71. The following is the list of topics to be investigated by the civil registration method:

(1) LIVE BIRTH

Direct topics	Derived topics

(i) Characteristics of the event

Dates (time reference)

*Date of occurrence (of delivery) (paras. 86-87)	*Total live births (para. 88)
*Date of registration (paras. 89-90)	

Geographic characteristics

*Place of occurrence (para. 97)	(*Locality of occurrence (paras. 98-102); (*Urban/rural occurrence (paras. 103-106)

Other characteristics

*Type of birth (i.e., single or multiple issue) (para. 209)

*Attendant at birth (para. 210)

Hospitalization (paras. 219-220)

(ii) Characteristics of the child and of the parents

(ii.a) Characteristics of the child

*Sex (para. 134)

*Legitimacy status (paras. 135-136)

*Weight at birth (para. 137)

Gestational age (para. 138)

(1) LIVE BIRTH (continued)

(ii.b) Characteristics of the mother

Personal characteristics

Direct topics	Derived topics
*Age (paras. 124-132) or *date of birth (para. 133)	*Age (paras. 124-132)
*Children born alive during entire lifetime of mother (paras. 140-145)	(
Children born during entire lifetime of mother and still living (paras. 146-148)	(*Birth order or *parity (paras. 150-152); (Lifetime fertility (paras. 153-155)
Foetal deaths during entire lifetime of mother (para. 149)	(
Interval since last previous live birth (paras. 156-158) or Date of last previous live birth (para. 159)	Interval since last previous live birth (paras. 156-158)
*Duration of marriage (for legitimate births) (paras. 163-166) or *Date of marriage (para. 167)	*Duration of marriage (paras. 163-166)
Educational attainment (paras. 179-180)	(
Literacy status (paras. 181-184)	(Socio-economic status (paras. 207-208) (
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (nationality) (paras. 187-188)	

Economic characteristics (paras. 191-194)

Type of activity (paras. 195-204)	(
	(Socio-economic status (paras. 207-208)
Occupation (paras. 205-206)	(

Geographic characteristics

*Place of usual residence (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)

(1) LIVE BIRTH (continued)

Direct topics	Derived topics
Geographic characteristics (continued)	
Duration of residence in usual (present) place (paras. 111-114)	(
Place of residence at a specified time in the past (paras. 116-119)	(Migrant status (para. 123)
Place of birth (paras. 120-122)	(
(ii.c) Characteristics of the father	
Personal characteristics	
Age (paras. 124-132) or date of birth (para. 133)	Age (paras. 124-132)
Educational attainment (paras. 179-180)	(
Literacy status (paras. 181-184)	(Socio-economic status (paras. 207-208)
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (nationality) (paras. 185-186)	
Economic characteristics (paras. 191-194)	
Type of activity (paras. 195-204)	(
Occupation (paras. 205-206)	(Socio-economic status (paras. 207-208)
Geographic characteristics	
Place of usual residence (paras. 107-110)	(Locality of residence (paras. 98-102); (Urban/rural residence (paras. 103-106)
Duration of residence in usual (present) place (paras. 111-114)	(
Place of residence at a specified time in the past (paras. 116-119)	(Migrant status (para. 123)
Place of birth (paras. 120-122)	(

(iii) Characteristics of population-at-risk (paras. 222-223)

/To be obtained independently from population censuses, surveys, and intercensal estimation procedures./

(2) DEATH[1/]

Direct topics	Derived topics

(i) Characteristics of the event

Dates (time reference)

*Date of occurrence (paras. 86-87)	*Total deaths (para. 88)
*Date of registration (paras. 89-90)	

Geographic characteristics

*Place of occurrence (para. 97)	(*Locality of occurrence (paras. 98-102); (*Urban/rural occurrence (paras. 103-106)

Other characteristics

*Cause of death (paras. 214-218)	
*Certifier (paras. 211-212)	*Type of certification (para. 213)
Attendant at birth (for deaths under one year of age) (para. 210)	
Hospitalization (paras. 219-220)	

(ii) Characteristics of the decedent

Personal characteristics

*Age (paras. 124-132) or *date of birth (para. 133)	*Age (paras. 124-132)
Age of surviving spouse (for married) (see Age)	
*Sex (para. 134)	
*Marital status (paras. 168-174)	

1/ Registration record and/or statistical report on the fact of death, does not include topics on the Medical Certificate of Cause of Death. For this, see Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, 1965 Revision, pp. 415-436.

(2) DEATH (continued)

Direct topics	Derived topics
Personal characteristics (continued)	
Duration of marriage (paras. 163-166) or date of marriage (para. 167)	Duration of marriage (paras. 163-166)
Children born alive during entire lifetime (for females of child-bearing age and over) (paras. 140-145)	((Lifetime fertility (paras. 153-155) (
Children born during lifetime and still living (for females of child-bearing age and over) (paras. 146-148)	
Educational attainment (paras. 179-180)	(
Literacy status (paras. 181-184)	(Socio-economic status (paras. 207-208) (
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (nationality) (paras. 187-188)	
Was birth registered? (for deaths under one year of age) (para. 139)	
Legitimacy status (for deaths under one year of age) (paras. 135-136)	
Economic characteristics (paras. 191-194)	
Type of activity (paras. 195-204)	(
Occupation (paras. 205-206)	(Socio-economic status (paras. 207-208) (
Geographic characteristics	
*Place of usual residence (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)
Place of residence at a specified time in the past (paras. 116-119)	((Migrant status (para. 123)
Place of birth (paras. 120-122)	(

(iii) Characteristics of population-at-risk (paras. 222-223)

/To be obtained independently from population censuses, surveys, and intercensal estimation procedures./

(3) FOETAL DEATH

Direct topics	Derived topics

(i) Characteristics of the event

Dates (time reference)

*Date of occurrence (of foetal delivery) (paras. 86-87)	(*Total foetal deaths (para. 88)
*Date of registration (paras. 89-90)	

Geographic characteristics

*Place of occurrence (para. 97)	(*Locality of occurrence (paras. 98-102); (*Urban/rural occurrence (paras. 103-106)

Other characteristics

*Type of birth (i.e., single or multiple issue) (para. 209)	
Attendant at birth (para. 210)	
Certifier (paras. 211-212)	Type of certification (para. 213)
Cause of foetal death (paras. 214-218)	
Hospitalization (paras. 219-220)	

(ii) Characteristics of the foetus and of the parents

(ii.a) Characteristics of the foetus

*Sex (para. 134)	
*Legitimacy status (paras. 135-136)	
Weight at delivery (para. 137)	
*Gestational age (para. 138)	

(ii.b) Characteristics of the mother

*Age (paras. 124-132) or *date of birth (para. 133)	*Age (paras. 124-132)

(3) FOETAL DEATH (continued)

Direct topics	Derived topics
(ii.b) Characteristics of the mother (continued)	
*Children born alive during entire lifetime of mother (paras. 140-145)	(
Children born during entire lifetime of mother and still living (paras. 146-148)	(*Birth order or (parity) ((paras. 150-152); (Lifetime fertility (paras. 153-155)
*Foetal deaths during entire lifetime of mother (para. 149)	(
*Duration of marriage (for legitimate deliveries) (paras. 163-166) or *date of marriage (para. 167)	*Duration of marriage (paras. 163-166)
Educational attainment (paras. 179-180)	(
Literacy status (paras. 181-184)	(Socio-economic status (paras. 207-208) (
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (nationality) (paras. 187-188)	
Economic characteristics (paras. 191-194)	
Type of activity (paras. 195-204)	(
Occupation (paras. 205-206)	(Socio-economic status (paras. 207-208) (
Geographic characteristics	
*Place of usual residence (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)
Place of birth (paras. 120-122)	Migrant status (para. 123)
(ii.c) Characteristics of the father	
Personal characteristics	
Age (paras. 124-132) or date of birth (para. 133)	Age (paras. 124-132)
Educational attainment (paras. 179-180)	(
Literacy status (paras. 181-184)	(Socio-economic status (paras. 207-208) (

(3) FOETAL DEATH (continued)

Direct topics	Derived topics
Personal characteristics (continued)	
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (paras. 185-186)	
Economic characteristics (paras. 191-194)	
Type of activity (paras. 195-204)	(
	(Socio-economic status (paras. 207-208)
Occupation (paras. 205-206)	(
Geographic characteristics	
Place of usual residence (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)
Place of birth (paras. 120-122)	Migrant status (para. 123)

(iii) Characteristics of denominator (live births)

/Information is generally obtained from the same collecting system as information on foetal deaths./

(4) MARRIAGE

Direct topics	Derived topics
(i) Characteristics of the event	
Dates (time reference)	
*Date of occurrence (of marriage) (paras. 86-87)	(*Total marriages (para. 88)
*Date of registration (paras. 89-90)	
Geographic characteristics	
*Place of occurrence (para. 97)	(*Locality of occurrence (paras. 98-102); (*Urban/rural occurrence (paras. 103-106)
Other characteristics	
*Type of marriage (para. 221)	
(ii) Characteristics of bride and groom	
Personal characteristics	
*Age (paras. 124-132) or *date of birth (para. 133)	*Age (paras. 124-132)
*Marital status (previous) (paras. 168-174)	
Number of previous marriages (para. 175)	Marriage order (para. 176)
Educational attainment (paras. 179-180)	(
	(Socio-economic status (paras. 207-208)
Literacy status (paras. 181-184)	(
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (nationality) (paras. 187-188)	
Economic characteristics (paras. 191-194)	
Type of activity (paras. 195-204)	(
	(Socio-economic status (paras. 207-208)
Occupation (paras. 205-206)	(

(4) MARRIAGE (continued)

Direct topics	Derived topics
(ii) Characteristics of bride and groom (continued)	
Geographic characteristics	
*Place of usual residence (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)
Duration of residence in usual (present) place (paras. 111-114)	(
Place of previous residence (para. 115)	((Migrant status (para. 123)
Place of residence at a specified time in the past (paras. 116-119)	(
Place of birth (paras. 120-122)	(

(iii) Characteristics of population-at-risk (paras. 222-223)

/To be obtained independently from population censuses, surveys, and intercensal estimation procedures./

(5) DIVORCE

Direct topics	Derived topics

(i) Characteristics of the event

Dates (time reference)

*Date of occurrence (of divorce) (paras. 86-87)	*Total divorces (para. 88)
*Date of registration (paras. 89-90)	

Geographic characteristics

*Place of occurrence (para. 97)	(*Locality of occurrence (paras. 98-102); (*Urban/rural occurrence (paras. 103-106)

(ii) Characteristics of divorcees (husband and wife separately)

Personal characteristics

*Age (paras. 124-132) *date of birth (para. 133)	*Age (paras. 124-132)
*Number of dependent children of divorced persons (paras. 161-162)	
Number of children born alive to the marriage being dissolved (para. 160)	
*Duration of marriage being dissolved (paras. 163-166) *Date of marriage (para. 167)	*Duration of marriage (paras. 163-166)
Mode of dissolution of previous marriages (paras. 177-178)	
Number of previous marriages (para. 175)	Marriage order (para. 176)
Type of marriage being dissolved (para. 221)	
Educational attainment (paras. 179-180)	(
	(Socio-economic status (paras. 207-208)
Literacy status (paras. 181-184)	(
Ethnic (and/or national) group (paras. 185-186)	
Citizenship (nationality) (paras. 187-188)	

(5) DIVORCE (continued)

Direct topics	Derived topics
(ii) Characteristics of divorcees (husband and wife separately) (continued)	
Economic characteristics (paras. 191-194)	
Type of activity (paras. 195-204)	(
	(Socio-economic status (paras. 207-208)
Occupation (paras. 205-206)	(
Geographic characteristics	
*Place of usual residence (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)
Duration of residence in usual (present) place (paras. 111-114)	(((
Place of previous residence (para. 115)	((Migrant status (para. 123)
Place of residence at specified time in the past (paras. 116-119)	(((
Place of birth (paras. 120-122)	(
Place of occurrence of marriage being dissolved (para. 97)	

(iii) Characteristics of population-at-risk (paras. 222-223)

/To be obtained independently from population censuses, surveys, and intercensal estimation procedures./

2. Topics recommended for collection by the field survey method

72. The functions of the field survey method, using either sampling (see chapter VI) or complete enumeration of vital events, are to serve (1) as a supplementary means of data collection in countries where there exists a good civil registration system; and (2) as an interim measure of collecting the needed vital data in countries where civil registration is lacking, deficient or in the process of development.

73. Where a field sample survey is used as a supplementary means of collection, the events to be investigated can be any of the vital events, e.g., births, deaths, foetal deaths, marriages and divorces. For this purpose the topics to be investigated can be (1) any of those listed in paragraph 71, not routinely investigated by the registration method, or which are not investigated annually; and (2) any additional topics which are of special local interest.

74. The most important application of field surveys through retrospective inquiries or the follow-up method has been as an interim measure used to meet the urgent need for vital data in countries where civil registration is lacking, deficient or in the process of development.

75. Because of the expanding use of information for measurement of population change, the order of first priority recommended for collection of vital events by field sample survey is given to births and deaths. The second priority is given to marriages, since in developing countries "marriage" assumes much less importance as a determinant of demographic events. The collection of the other vital events, for instance divorces and foetal deaths, is not recommended because the incidence of these events in the population is so low that the sample size to be effective, would have to be considerable and the problems of collection would most likely result in seriously deficient data. A possible exception in some countries is induced abortion.

76. Unlike the registration method, in which the statistical unit investigated is the event itself - birth, death, etc. - the field survey employs the household and its members as an enumeration unit; the information on vital events is obtained only as a characteristic of selected members of the household.

77. A country's selection of topics to be investigated will depend on its needs and on the resources available and the consideration concerning the number and types of questions that would seem practicable for inclusion in the survey questionnaire. The inclusion of too many items may adversely affect the quality of the data to be investigated. From this point of view, therefore, it may be desirable to limit the number of questions, especially in statistically less developed countries, so as to improve the accuracy and efficiency of the information collected.

78. In paragraph 83 a list is presented on the recommended topics 2/ for use in sample field surveys relating only to births and deaths. This list also includes topics for investigation concerning the appropriate population base; for sample field surveys can be designed so as to yield simultaneously with information on births and deaths, information from which population estimates can be developed at the level of detail needed for the calculation of the various vital rates. The list also contains a minimum of basic items required for the measurement of population change, and of patterns of fertility and mortality. These items may be supplemented as needs require, with the topics given in paragraph 71.

79. It should be pointed out that this list of recommended items contains no item sought exclusively for purposes of routine identification or for control and checking.

2/ This list of topics was drawn from the lists recommended (1) in the Handbook of Household Surveys (United Nations publication, Sales No. 64.XVII.13), chapter II, and (2) in the Methodology of Demographic Sample Surveys, Report of the Interregional Workshop on Methodology of Demographic Sample Surveys (United Nations publication, Sales No. E.71.XVII.II), chapter VIII.

80. Topics considered of prime importance are marked with an asterisk (*), while those unmarked are considered of lesser importance. The investigation of additional topics such as those listed in paragraph 71, should generally be considered only after it has been determined that information on the "Recommended" topics (those marked with an asterisk (*) of the ones listed in paragraph 83) will be made available.

81. For convenience, these topics are grouped as follows:

(1) LIVE BIRTHS

(i) Characteristics of the event

(ii) Characteristics of the mother

(2) DEATHS

(i) Characteristics of the event

(ii) Characteristics of the decedent

(3) POPULATION-AT-RISK

(i) Characteristics of the household

(ii) Characteristics of each household member

Within these groupings, a further distinction is made between "direct topics" and "derived topics" (see para. 67).

82. The paragraph numbers in parentheses after each topic refer to the paragraphs in section C where the definitions and specifications of the topics are presented.

83. The following is the list of topics to be investigated by the field survey method:

(1) LIVE BIRTHS

Direct topics	Derived topics
(i) Characteristics of the event	
*Children born alive in the 12 months preceding the inquiry to women members of the household of child-bearing age (paras. 91-92); and sex (para. 134) of each	(*Total live births (para. 88) by sex ((para. 134) ((
*Children born in the 12 months preceding the inquiry to women of child-bearing age and still living (para. 93); and sex (para. 134) of each	(*Infant deaths occuring among children (born alive in the 12 months preceding (the inquiry (
Date of occurrence (of delivery) (paras. 86-87)	
Date of last live birth in the household (para. 96)	

(1) LIVE BIRTHS (continued)

Direct topics	Derived topics
(ii) Characteristics of the mother	
*Age (paras. 124-132) Date of birth (para. 133)	*Age (paras. 124-132)
*Children born alive during entire lifetime of mother (paras. 140-145)	(*Birth order or *parity (paras. 150-152)
Children born during entire lifetime of mother and still living (paras. 146-148)	

/For supplemental topics see list of recommended topics in paragraph 71./

(2) DEATHS

Direct topics	Derived topics
(i) Characteristics of the event	
*Deaths in the household during the 12 months preceding the inquiry (paras. 94-95)	(*Total deaths (para. 88)
Date of occurrence (paras. 86-87)	
Date of last death in the household (para. 96)	
(ii) Characteristics of the decedent	
*Age (paras. 124-132) or date of birth (para. 133)	*Age (paras. 124-132)
*Sex (para. 134)	

/For supplemental topics see list of recommended topics in paragraph 71./

(3) POPULATION-AT-RISK (paras. 222-223)

(i) Characteristics of the household	
*Household members present (paras. 225-226)	(*Total population-at-risk (paras. 222-223)
*Household members temporarily absent (paras. 225-226)	
Household visitors (paras. 225-226)	
*Place of residence (geographic location of household) (paras. 107-110)	(*Locality of residence (paras. 98-102); (*Urban/rural residence (paras. 103-106)

(2) DEATHS (continued)

Direct topics	Derived topics
(ii) Characteristics of each household member	
Personal characteristics	
*Age (paras. 124-132) or date of birth (para. 133)	*Age (paras. 124-132)
*Sex (para. 134)	
*Children born alive during entire lifetime (for women of child-bearing age and over) (paras. 140-145); and sex (para. 134) of each child	(*Lifetime fertility (paras. 153-155)
*Children born during entire lifetime (for women of child-bearing age and over) and still living (paras. 146-148); and sex (para. 134) of each child	
Duration of marriage (paras. 163-166) or date of marriage (para. 167)	Duration of marriage (paras. 163-166)
*Marital status (paras. 168-174)	
Ethnic (and/or national) group (paras. 185-186)	
*Relationship to head of household (para. 224)	(*Household composition (paras. 227-230) (*Household size (paras. 227-230) (*Households, number of (paras. 227-228)
Geographic characteristics	
Place of residence at a specified time in the past (paras. 116-119)	(Migrant status (para. 123)

/Any additional topics that may be needed for the population base for the computation of rates./

C. Definitions and specifications of topics 3/

84. Each item on the statistical report or survey questionnaire should be accompanied by a clear, explicit and simple definition which will allow the persons

3/ Specific classifications for each variable are given in the tabulation programme in chapter IV.

recording the information, e.g., the registrar and interviewer, to obtain the information needed for statistical purposes. In order to achieve international comparability, emphasis should first be given to providing definitions, followed by a recommendation that these definitions be in accord with established international standards, if such exist, and in any case with current population census practice. This latter point is particularly important, because of the fact that the computation of vital-statistics rates depends on relating vital-statistics frequencies to population. Unless characteristics of the two are similarly defined, the resulting rates will be difficult to evaluate. The points at which correspondence should be established will be pointed out in connexion with each definition given below.

85. The definitions and specifications given below are for both "direct" and "derived" topics recommended in paragraphs 71 and 83. The definitions conform to those recommended in the Principles and Recommendations for the 1970 Population Censuses 4/ and also to those given in the Handbook of Household Surveys. 5/ Except where otherwise indicated, the characteristics should be reported as of the date of occurrence of the event.

Dates (time reference)

(1) Date of occurrence

86. Date of occurrence is the exact date when the event occurred, and should be expressed in terms of day, month and year as well as hour and minute, if appropriate.

87. Information on date of occurrence should be collected in such detail as to permit its use in computing age intervals down to less than one day, where appropriate, as well as classification of the incidence of events according to the Gregorian calendar, that is, in solar months, quarters or years, as appropriate. If only year of occurrence is obtained, as is the case in sample survey investigations of births and deaths, only annual frequencies will be available.

(2) Total live births, deaths, foetal deaths, divorces and marriages

88. These are derived topics obtained from a count of registered or enumerated vital events. The registered events should be based on "date of occurrence", which is the recommended basis for the time reference of all vital statistics tabulations (see paras. 238-240). For total live births and deaths obtained from field surveys see topics 4 and 6.

(3) Date of registration

89. Date of registration of a vital event is the day, month and year when the entry in the civil register was made.

4/ See chap. II, foot-note 13 above.

5/ See chap. III, foot-note 2 above.

90. These dates should be collected in such a way as to permit retrospective cross-classification with date of occurrence in order to provide insight into the lag between the occurrence of events and their registration so as to give some measure of the probable under-registration.

(4) Children born alive in the twelve months preceding the inquiry to women members of the household

91. Children born alive in the twelve months preceding the inquiry to women members of the household is a survey topic used to obtain information on the current incidence of live births. The information derived from this topic should relate to all children born alive during the 12-month period preceding the inquiry to women who are members of the household at the time of inquiry, irrespective of where these women may have been at the time of birth of the child. The information recorded should include the sex of each child. Special care will need to be taken to ensure the inclusion of children who were born elsewhere than in the place of usual residence, and who subsequently died. Children born to women who are temporary visitors in the household should not be included.

92. Since the infants who die shortly after birth are those which most often tend to be overlooked or deliberately omitted in reporting, information on the number of children born during the year will be more reliably reported if the question on number of births is supplemented by asking, "Is the child still living?" Recording the name and sex of the child is also helpful in obtaining accurate responses, because the child may then be identified among the present or absent members of the household; moreover, the possibility of still-births being included will be eliminated by this technique. Questions on the date and order of the child's birth may also help to elicit a more accurate response. If the related question on cumulative, life-time fertility (topic 29) is asked, a probing question can be added to ascertain if any of the issue reported in that connexion were born during the period of reference for current births.

(5) Children born in the twelve months preceding the inquiry to women members of the household and still living

93. Children born in the twelve months preceding the inquiry to women members of the household and still living is a survey topic defined to include children born alive, referred to under topic 4, and still living at the time of the inquiry. For specifications, see topic 26.

(6) Deaths in the household during the twelve months preceding the inquiry

94. Deaths in the household during the twelve months preceding the inquiry is a survey topic intended to produce information on the current incidence of deaths. The information derived from this topic should relate to all deaths, irrespective of where they took place, which occurred during the 12 months preceding the inquiry to persons who, at the time of death, were members of the household. The information collected should also include the decedent's age and sex, including data on infant deaths, i.e., deaths under one year of age. Special efforts should be made to ensure the inclusion of deaths to infants born within the reference period.

95. The investigation of deaths in retrospective surveys, especially in single-round surveys, is subject to omissions. A question on deaths occurring in the 12 months preceding an inquiry will rarely, if ever, yield satisfactory results without detailed probes and thorough checking. Nevertheless, the information on the current incidence of death does provide the basis for the estimation of various mortality rates, and it does provide, in conjunction with the information on current incidence of birth (topic 4), the data required for the estimation of basic demographic measures.

(7) Date of last live birth in the household, and date of last death in the household

96. These are survey topics, designed to check the accuracy of information obtained from topics 4 and 6.

Geographic characteristics

(8) Place of occurrence

97. Place of occurrence is the locality or other geographic place where the birth, death, delivery of a dead foetus, marriage or divorce occurred. This information should be given in enough detail to enable tabulations to be made for at least the largest administrative subdivisions of the country and for such smaller administrative subdivisions as may be required for national use, and also to enable urban/rural distribution to be included in tabulations where required. See also, Locality (topic 9) and Urban and rural (topic 10).

(9) Locality

98. Locality is defined for census purposes as a distinct population cluster (also designated as inhabited place, population centre, settlement, etcetera), of which the inhabitants live in neighbouring buildings and which has a name or a locally recognized status. 6/

99. In compiling vital statistics, the basis for geographic tabulation may be either place of occurrence (topic 8), i.e., the locality where the event occurred, or place of usual residence (topic 11), i.e., the locality where the person in question (parent, decedent, marriage partner, etc.) usually resides. Concerning the basis recommended for geographic tabulations of vital-statistics compilations see paragraphs 244-249.

6/ Principles and Recommendations for the 1970 Population Censuses, para. 232.

100. The recommended classification of localities by size-class is as follows:

All localities:
- 500,000 or more inhabitants
- 100,000 - 499,000 inhabitants
- 50,000 - 99,999 inhabitants
- 20,000 - 49,999 inhabitants
- 10,000 - 19,999 inhabitants
- 5,000 - 9,999 inhabitants
- 2,000 - 4,999 inhabitants
- 1,000 - 1,999 inhabitants
- 500 - 999 inhabitants
- 200 - 499 inhabitants
- Less than 200 inhabitants
- Population not in localities

101. As noted in the Handbook of Household Surveys, 7/ this comprehensive classification would be too detailed for tabulation of survey results. Only when they are censuses do surveys ordinarily have sufficient numbers to permit such detailed classification. For survey results, therefore, consideration may be given to a more general classification.

102. Actually of course there is no definite point on the continuum, from scattered dwellings or small hamlets to great metropolitan agglomerations, where rural ends and urban begins. Moreover, population size of locality is not necessarily highly correlated with urban characteristics. New patterns of population settlement, such as the spread of suburban areas around large localities, areas which are quite different from both the nucleus city and the adjacent rural area, limit to some degree the adequacy of the population-size-group approach to differentiation. Therefore, where it is not practicable to classify a survey population according to locality-size a simple dichotomous urban/rural classification may prove useful instead. Even though there appears to be little international uniformity in the national definitions of urban and rural, population described as "urban" will be heavily weighted with clearly urban population, and those described as "rural" will include a high proportion of village or clearly rural population. Thus, differences between urban and rural characteristics are bound to be reflected in statistics so classified even if the classifications are not always precise or comparable.

(10) Urban and rural

103. Urban and rural is a derived topic of high priority in a vital statistics system which is based on geographic information obtained from Place of occurrence (topic 8) and Place of usual residence (topic 11). Because of national differences in the characteristics which distinguish urban from rural areas, the distinction between urban and rural population is not amenable to a single definition applicable to all countries. For this reason, each country should decide for itself which areas are urban and which are rural.

104. For national purposes as well as for international comparability, the most appropriate unit of classification is the locality (as defined in para. 98) or,

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7/ United Nations publication, Sales No. 64.XVIII.13, pp. 29, 30.

if this is not possible, the smallest administrative division of the country. For a discussion of definition and classification of locality as well as of the urban/rural division, see Locality (topic 9).

105. It must be recognized, however, that a distinction by urban and rural based solely on the size of the population of localities does not always offer a satisfactory basis for classification, especially in highly industrialized countries. Some countries therefore have developed a classification of localities based not on population size alone but on "socio-economic structure of the population, the functional aspects and the morphological situation of the localities". 8/ Others have tried to express degrees of urbanization by use of indices of population density etc.

106. The difficulty of applying these criteria to vital statistics lies in the fact that data on the relevant variables are seldom available.

(11) Place of usual residence

107. Place of usual residence is the geographic location (or address) where the specified person usually resides. This need not be the same as either the place where he was found at the time of the occurrence of the event or inquiry, or his legal residence.

108. Although most persons will have no difficulty in stating their place of usual residence, some confusion is bound to arise in a number of special cases, where persons may appear to have more than one usual residence. These cases might include persons who maintain two or more residences, students living at a school away from their parental home, members of the armed forces living at a military installation but still maintaining private living quarters away from the installation, and persons who sleep away from their homes during the working week but return home for several days at the end of each week. The treatment of all such cases should be clearly set forth in the registration or enumeration instructions.

109. Problems may also arise with persons who have been for some time at the place where they are found at the time of inquiry but who do not consider themselves to be residents of this place because they intend to return to their previous residence at some future time. The situation is similar with persons who have left the country temporarily but are expected to return after some time. In such instances, clearly stated time-limits of presence in, or absence from, a particular place must be set, in accordance with the prevailing circumstances in the country, to determine whether or not the person is usually resident at that place.

110. Information on place of usual residence should be collected in enough detail to enable tabulations to be made for the smallest geographic subdivisions required by the tabulation plan. To satisfy the requirements of the geographic classifications recommended in the tabulations in chapter IV, information is needed for both minor civil divisions and localities. See also Locality (topic 9) and Urban and rural (topic 10).

8/ Typology of the Netherlands municipalities according to degree of urbanization, 31 May 1960, Netherlands Central Bureau of Statistics, W. de Haan, 1964.

(12) Duration of residence

111. Duration of residence is the interval of time up to the date of the occurrence of the event, expressed in completed years, during which each person has lived in (a) the locality 9/ which is his place of usual residence (see topic 11) at the time of occurrence of the event and (b) the major civil division in which that locality is located.

112. If, in the compilation of the incidence of birth, death, marriage and divorce according to geographic units, events are allocated by place of occurrence rather than by usual place of residence of the persons concerned, information on duration of residence will be irrelevant for events occurring to persons removed from their usual place of residence. Such events must, therefore, be identified as occurring among non-residents, so that they will not be erroneously counted as events among recent migrants.

113. In collecting information on duration of residence, it should be made clear that the concern is with length of residence in the major civil division and the locality, not in the particular housing unit.

114. Information on duration of residence should be collected so as to permit classification of events as occurring to (a) residents with duration categories of less than one year, 1-4 years, 5-9 years, 10 years and over, and not stated; (b) transients or visitors; and (c) persons whose status as residents, transients or visitors is not given. This classification is the same as that recommended for the population census supplying the base for the calculation of rates.

(13) Place of previous residence

115. Place of previous residence is the geographic locality, major or other civil division in which the individual resided immediately prior to migrating into his present civil division of usual residence. Where reliable data can be collected, some countries will find it useful to ask for place of residence at a specified time in the past (topic 14).

(14) Place of residence at specified time in the past

116. Place of residence at specified time in the past is a particularly useful topic for measuring the incidence and character of migration and migrants. Given the emphasis now being attached to the use of this item in field surveys, its additional use for vital statistics can lead to a variety of useful combinations of census and vital statistics data.

117. As noted in the Handbook of Household Surveys 10/ determination of an appropriate geographical time and reference for the question on "Place of residence

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9/ A locality is defined for statistical purposes as a distinct population cluster (also designated as inhabited place, population centre, settlement etc.) the inhabitants of which live in neighbouring buildings and which has a name or a locally recognized status (Principles and Recommendations for the 1970 Population Censuses (see chap. II, foot-note 13), para. 232).

10/ See foot-note 7 above, this chapter, p. 39.

'X' years ago" would have to take account of the special nature, if any, of the national circumstances being investigated and also of the size and design of any sample that is being used.

118. The criteria for selecting a suitable time reference for this question should be such as will achieve a balance between a period long enough to produce a volume of changes of residence sufficient for study and one which will not unduly increase the number of multiple moves which may have taken place and the number of migrants who have died in the interval - these being the two imponderables which may tend to bias results. The more remote the date of reference, the more difficult it will be for the informant to give an accurate answer to the question of earlier residence because of memory lapse, and possibly also because of changes in boundaries during the interval. Also, the longer the period, the greater the understatement of the volume would tend to be, due to changes of residence of persons who have died and the increased probability of multiple changes of residence. The date of the last previous population census or demographic survey which yielded population by place of residence may be useful, since it might provide the components for the differencing method of estimating net migratory gains and losses over the interval. 11/ The appropriate period in any particular instance will, of course, depend to a large extent on national circumstances.

119. Data should be compiled in such a way as to permit classification into (1) non-migrants, i.e., persons concerned with events who, at the time of the inquiry, were living in the same locality as that in which they were living at the earlier date, and (2) migrants, i.e., persons who at the time of the inquiry were living in a locality different from their place of residence at the earlier date.

(15) Place of birth

120. Place of birth (geographic) is defined as the country, or specified type of geographic unit of the country, in which the person was actually born. In some countries, place of birth is reported as the area in which the mother or the individual resided at the time of the person's birth. Each country should specify which definition it has used.

121. The collection of information distinguishing between persons born in the particular country (natives) and those born elsewhere (foreign born), is necessary where any inquiry on place of birth is made. Even countries where the proportion of foreign-born population is insignificant and which, therefore, desire to compile information only on the place of birth of the native population must first separate the native from the foreign-born population. It is therefore recommended that place of birth be asked for all persons. For respondents who cannot name their country of birth, at least the continent should be ascertained.

122. For purposes of international comparability, as well as for internal use, it is preferable that information on place of birth be available according to national boundaries existing at the time of the occurrence of the event or inquiry. To

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11/ National Programmes of Analysis of Population Census Data as an Aid to Planning and Policy-making (United Nations publication, Sales No. 64.XIII.4), para. 49.

ensure such comparability, however, it may be necessary to obtain information not only on country of birth but also on major territorial division or even specific locality, so that reported place of birth can be correctly allocated to countries according to present boundaries. The desirability of such detailed reporting should be carefully weighed considering (a) the probable number of foreign-born persons from countries which have lost or gained territory and (b) the cost of coding a large number of specific foreign locations.

(16) Migrant status

123. Topics which provide information on the extent and direction of internal migration are: (a) place of birth (topic 15), (b) place of usual residence (topic 11), (c) place of previous residence (topic 13), (d) place of residence at specified time in the past (topic 14), and (e) duration of residence in usual (present) place (topic 12). "Migration", i.e., the physical movement from one place of residence to another, is used as a variable in the study of differential fertility, mortality, nuptiality and divorce. For information on how to classify vital statistics according to "migrant" and "non-migrant" status, see Place of residence at specified time in the past (topic 14).

Personal characteristics

(17) Age

124. Age is the estimated or calculated interval of time between the day, month and year of birth and the day, month and year of occurrence of the event, expressed in the largest completed unit of solar time, such as years for adults and children, and months, weeks, days, hours or minutes of life, as appropriate for infants under one year of age.

125. Information on age may be secured either by obtaining the year, month and day of birth or by asking directly for "age at the last birthday". The first method usually yields more precise information, but it is extremely difficult to use in interviewing illiterate persons and, in any case, involves additional processing in converting the answers into "completed years of age". The direct question on age at last birthday is more economical to process, but may yield less precise results, since it more easily permits approximate replies. It is, however, the appropriate question to use when a considerable proportion of the population cannot give a precise birth date.

126. Where exact age is unknown, estimated age may be recorded. To help arrive at a reasonable estimate of age among less literate persons, it may be useful to employ historical calendars, 12/ that is, lists of dates of well-known events such as famines, epidemics, natural disasters such as eruption of volcanoes or earthquakes, construction of landmarks, dams and bridges, imposition of new taxes

12/ Reference might be made to the paper "The historical calendar as a method of estimating age: the experience of the Moroccan multi-purpose sample survey of 1961-63" by Christopher Scott and Georges Sabagh, Population Studies, vol. XXIV, No. 1 (March 1970), pp. 93-109.

or regulations, or significant political changes. Climatic and farming cycles, and religious or national festivals may also be used. 13/ Estimation of the age of an individual may also be attempted by employment of simple criteria of physiological age or by reference to the ages of other members of the household having a known relationship to the person whose age is being estimated.

127. Obtaining relatively reliable information on age calls for special efforts on the part of the interviewer. Care must be exercised, for example, in certain cultures where age is reckoned from the New Year. In such communities an infant is considered to be already one year old at birth, to become two years automatically at the succeeding New Year (it may be Chinese or Moslem), and then to continue to advance one year at each successive New Year, regardless of actual birth date. Thus, unless special care is taken to ask for date of birth in terms of the solar calendar, reports on age in such populations are likely to result in an upward bias averaging about one and a half years. Information on age of mother and father for live births and foetal deaths should be collected in such a way as to permit its classification into five-year age groups between 15 and 49 with terminal groups of "Under 15 years" and "50 years and over".

128. Infant age at death should be collected in such a way as to permit classification of infants into 22 age groups, namely, under 24 hours; single days to 6; 7-13 days; 14-20 days; 21-27 days; 28 days to under 2 months; single months to 11 months inclusive, and not stated.

129. Ages at death for persons other than infants should be collected in such a way as to permit classification into at least 23 age groups as follows: under 1 year; single years to 4; 5-year age groups to 84; 85 and over; and not stated. If recording by quinquennial groups is not possible, efforts should be made to distinguish at least the following groups as a minimum: infants (under one year); school age (5-14 years); child-bearing age (15-49 years); working ages (15-64 years) and aged dependent persons (65 and over).

130. Age of partners at marriage should be collected so as to permit classification into at least 15 age groups as follows: under 15 years; 5-year age groups to 74; 75 and over and not stated.

131. Age of divorcees should be classified in the same way as that of marriage partners.

132. The age distribution of population obtained from a sample survey is required in single years as well as in conventional 5-year age groups.

(18) Age of surviving spouse (see Age)
(19) Date of birth

133. Date of birth should be expressed as day, month and year of birth, that is, in detail equivalent to that given for date of occurrence of event in order that

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13/ For examples of such calendars, see Blanc, Robert, Manuel de recherche démographique en pays sous-dévelopé, France, Ministère de la coopération, Institut national de la statistique et des études économiques, 1962, pp. 77-84.

exact age may be determined in completed years, months, weeks, days, hours or minutes of life, as required. If it is not possible to establish "date of birth", record "age" as defined in topic 17 above.

(20) Sex

134. The inclusion in the vital-statistics report of a question on the sex of the new-born child, of the decedent, or of the dead foetus, requires little comment. Sex is a basic characteristic in data describing human beings. Data should be collected so as to permit classification into "male" and "female", and in case of foetal death, "not stated" should be added.

(21) Legitimacy status

135. Legitimacy status is the status of the child or dead foetus with respect to being legitimate, that is, considered to be the lawful issue of a couple within the particular culture concerned.

136. Information should be collected so as to permit the distinction between those who are "legitimate" and those who are "illegitimate". "Legitimate", in this context refers to persons born of parents who were married at the time of birth in accordance with the laws of the country; "illegitimate" refers to children of parents who, according to national law, were not married at the time of birth, regardless of whether these children have been recognized or legitimized after birth. For some countries it may be desirable to subdivide the "illegitimate" category further into "recognized" and "not recognized", and to subdivide the "not stated" group into those "with information on father" and those "without information on father". "Foundlings" refers to children of unknown parentage.

(22) Weight at birth

137. Weight at birth (of a live-born child or of a dead-born foetus, at delivery) should be the weight determined immediately after delivery, and it should preferably be expressed in grammes to a degree of significance which will allow classification by 500-gramme intervals to be made from 500 grammes or less to 5,001 grammes or more. Where data are provided by parents, weight may be recorded in pounds and ounces (or other such measure) which will permit conversion to the gramme classification.

(23) Gestational age

138. Gestational age (of child or dead foetus) is the interval, in completed weeks, between the first day of the last menstrual period of the mother and the day, month and year of delivery, irrespective of whether the product of conception was live-born or without evidence of life. Information on gestational age should be collected in such a way as to permit classification into age classes, in weeks as follows: under 20 weeks, 20-27 weeks, 28-31 weeks, 32-35 weeks, 36 weeks, 37-39 weeks, 40 weeks and over, not stated.

(24) Was birth registered?

139. This question aims at providing information on live-birth registration and is asked concerning infants dying before the age of one year. Its purpose is to evaluate completeness of registration and to facilitate linking records between registers of births and for infant deaths.

(25) Children born alive to mother (woman) during her entire lifetime

140. Children born alive to mother (woman) during her entire lifetime is defined to include all children born alive to the woman concerned, up to the time of the inquiry. The number recorded should comprise all live-born children (i.e., sons and daughters), whether legitimate or illegitimate, and whether born of the present or of previous marriages, regardless of whether they are living or dead at the time of the inquiry and regardless of whether they are living with the mother or elsewhere. In the case of multiple issue, each live-born child should be counted separately.

141. In the registration method, the item "total number of live-born children" is a priority topic, to be included in the statistical report on live births, on deaths (of female of childbearing age and over), and on foetal deaths. For legitimate live births, provision should be made to obtain information on number of live-born issue from both current and previous marriages.

142. In sample field surveys, data on live-born children should preferably be collected for each woman of childbearing age and over who is a member of the household at the time of inquiry, regardless of her marital status, and regardless of where she was residing at the time of birth of her children. Special care will have to be taken to ensure inclusion of deceased children born in a place other than the place of usual residence.

143. If in a field survey it is not feasible to obtain information for never-married women, information on total live births should at least be collected for all women, 15 years of age and over, who are currently married (including consensually married), widowed, separated or divorced. Whatever the group of women for whom the data have been collected, these women should be clearly described so as to avoid ambiguity in the analysis of the results, especially if, as if often the case in statistically less developed countries, the available data for estimating fertility are defective.

144. The collection of accurate data on the number of children born alive can be difficult. On the one hand, some of the replies will erroneously include foetal deaths, while, on the other, they may include children who died early in their infancy. Or because of misinterpretation of the term "children" they may omit offspring who are grown or who have left the household. It is therefore recommended that, in obtaining this information, the question be posed in terms of "sons" and "daughters" rather than "children" and that it be part of a series of probing questions covering, in addition, (1) all previous issue, including foetal deaths, (2) the number born dead (foetal deaths) (topic 27), (3) the number still living (topic 26), and (4) the number who have died. Any lack of consistency among the answers to these questions will indicate some error in the response which can then be further probed.

145. Data on number of children born alive during lifetime of mother (woman) should be collected so as to permit classification of live births and foetal deaths by birth order and live birth order (see topic 28); and distribution by parity groups of the female population enumerated in field surveys. 14/ (See also Lifetime fertility (topic 29).)

(26) Children born to mother (woman) during her entire lifetime and still living

146. Children born to mother (woman) during her entire lifetime and still living is defined to include all the children born to the woman concerned who are still living at the time of the inquiry. The number recorded should comprise all surviving children (sons and daughters), whether legitimate or illegitimate, whether born of the present or previous marriages, and regardless of whether they are living with the mother or elsewhere.

147. Data on number of living children (sons and daughters) should be collected for the same group of women as that for whom data on the total number of children born alive (topic 25) or of foetal deaths born (topic 27) are collected: namely, mothers of live-born infants or foetal deaths, or women included in the field surveys as specified in paragraph 142. This information serves as a check on topic 25. The information on number of living children that is collected in field surveys can be used in estimating child and infant mortality through computation of the proportion of survivors among children ever born. 15/ (See also Lifetime fertility, topic 29.)

148. To minimize the chance of omission of children who are not living in the same household as the mother at the time of the inquiry, it is suggested that the question be divided into (1) number living with mother and (2) number living elsewhere.

(27) Foetal deaths during entire lifetime of woman

149. This category is defined as including all foetal deaths (including abortions, whether spontaneous or induced) occurring to the woman concerned up to the time of inquiry. The number should comprise all foetuses born dead, whether legitimate or illegitimate, whether born of the present or previous marriage. The item, foetal deaths born, should be collected for the same group of women - i.e., mothers of live-born infants and women experiencing foetal deaths, or women included in the field surveys as specified in paragraph 142 as that for whom data on children born alive (topic 25) and children still living (topic 26) are secured.

(28) Birth order

150. Birth order, a derived topic, is the numerical order of the live birth or foetal death being recorded, in relation to all previous issue of the mother, irrespective of whether the issue was live-born or born dead (foetal death), or

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14/ Methods of Estimating Basic Demographic Measures from Incomplete Data, chaps. II and V.

15/ Ibid.

whether pregnancies were nuptial or extranuptial. Total "previous issue" is based on the answers to the questions on children born alive (topic 25) and on foetal deaths (topic 27) to the mother or woman during her entire lifetime.

151. If birth order is determined by considering previous live births only, or previous legitimate issue only, it is suggested that the terms "live-birth order" and "marital-birth order" (see topics 25 and 27) be used respectively. Similarly, should it be desired to restrict birth order to previous foetal deaths, the term "foetal-death order" should be used.

152. Data should be classified into single orders (1st, 2nd, 3rd etc.) to 9th, a terminal 10th and over group and Not stated.

(29) Lifetime fertility

153. Lifetime fertility is a derived survey topic based on the answers to the questions on (a) how many children were born alive during the entire lifetime of the woman (topic 25) and (b) how many children born during entire lifetime of woman are still living (topic 26). Information collected from field survey on these topics provide a summary of the fertility experience of the female population.

154. The principal measures of fertility that can be derived from the tabulation of female population 15 years of age and over by number of children born alive are: (a) the gross fertility ratio (average number of children born alive to women of childbearing age and over, (b) the average number of children born alive to women who have reached the end of the childbearing period (i.e., 50 years and over), (c) the proportion of women who have had no children by the end of their reproductive lives, (d) the average number of children born per woman who has already borne at least one child and (e) the cumulative average gross fertility ratios by age groups. In addition, the tabulation of women by number of children born alive provides the base for the computation of birth rates specific for parity.

155. Two measures of fertility that can be derived from the tabulation on female population 15 years of age and over by number of children living are: (a) the net fertility ratio, i.e., the average number of children surviving to women of childbearing age and over, and (b) the cumulative average net fertility ratios by age groups.

(30) Interval since last previous live birth

156. Interval since last previous live birth is the time elapsed, in completed months, between the day, month and year of the last previous delivery of a live-born child and the date of delivery of the last live birth. (See also topic 25, Children born alive to mother.)

157. Information on birth-interval may be secured either by asking directly for the number of completed months or years elapsed since the last previous live birth or by obtaining the date of the last previous live birth (see topic 31) and calculating the birth-interval at the processing stage.

158. Birth-interval data indicate the time elapsed since a woman achieved a given parity (birth order) status. This type of information permits identification of the passage of time between parities for the compilation of the reproductive histories of individual women and also represents an important variable in personal family planning (E/CN.9/203). 16/

(31) Date of last previous live birth

159. Date of last previous live birth is the day, month and year of delivery of the last previous live birth. See also topic 36, Interval since last previous live birth.

(32) Number of children born alive to the marriage being dissolved

160. Number of children born alive to the marriage being dissolved is defined to include all issue born alive during the marriage, irrespective of whether they are living or dead at the time the petition for divorce is filed.

(33) Number of dependent children of divorced persons

161. Number of dependent children of divorced persons is the total number of living children under 18 years of age who are dependent on either of the parties to a divorce at the time the petition for divorce is filed. This should include children of any previous marriage.

162. "Time of petition" is chosen as the reference point because this is actually the only time when the informant can be questioned regarding such matters as number of dependent children. It is recognized that this may predate the effective date of the divorce by several years, but it seems nevertheless the proper reference for evaluating the relationship between number of dependent children and incidence of divorce. It also agrees with the time reference point of "number of children born alive to the marriage being dissolved (topic 32).

(34) Duration of marriage

163. Duration of marriage is defined as the interval of time between the day, month and year of marriage and the day, month and year of occurrence of the event under consideration, expressed in completed years.

164. Information on duration of marriage may be secured either by obtaining the year, month and day of marriage (topic 35), or by asking directly for duration of marriage in completed years. The date method is appropriate in connexion with divorces, but in connexion with births difficulty might arise in cases where the informants are illiterate; in any case, the date method involves additional processing in converting the answers to completed years of married life. The direct question on "duration" can be processed at less cost but it may yield less precise replies because of the approximate nature of the answers. However, the

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16/ See Official Records of the Economic and Social Council, Forty-fourth Session, Supplement No. 9, chap. VIII, section B.

direct question on duration of marriage is recommended for use in population censuses and where a considerable proportion of the population is unlikely to be able to give the exact date. If necessary, duration may be estimated by the registrar, using the technique described in paragraph 126 in connexion with the investigation of age.

165. The information on duration of marriage, in connexion with legitimate live births and foetal deaths, is of considerable use in the analysis of fertility. Depending on the type of analysis to be made, inquiry may relate to either the "first marriage" or the "present marriage" of the mother. To minimize inaccuracies in reporting, the reference point should be clearly defined in each instance.

166. Information on duration of marriage should be collected in such a way as to permit its classification into 14 categories, as follows: under one year; single years to nine; 10-14; 15-19; 20 years and over; and not stated.

(35) Date of marriage

167. Date of marriage is the day, month and year, in the case of legitimate births, of the marriage of the parents of the child or dead foetus; and, in the case of divorces, of the marriage being dissolved. See also topic 34, Duration of marriage.

(36) Marital status

168. Marital status is the personal status of each individual in relation to the marriage laws or customs of the country. To provide consistency with population census results, it is recommended that the following categories of marital status be identified: (a) single, i.e., never married, (b) married, (c) widowed and not remarried, (d) divorced and not remarried, and (e) married but legally separated.

169. The treatment of persons whose only or latest marriage has been annulled is dependent upon the relative size of this group in the country. Where the group is substantial in size, it should comprise an additional category; if its size is insignificant, the individuals should be classified according to their marital status before the annulled marriage took place.

170. If it is desired to have complete information on marital status, then this information should be collected and tabulated for persons of all ages, irrespective of the national minimum legal age or the customary age for marriage because the population may include persons who have been married in other countries with different minimum marriage ages. In most countries, there are also likely to be persons who, because of special circumstances, have been permitted to marry below the legal minimum age.

171. Modifications of this classification which may need to be made to meet the special situations existing in some cultures must, of course, be based on first-hand knowledge of the local environment and customs. It should be mentioned, however, that in all cultures marital statuses ranging from legal to free unions are found in varying degrees, and within this range, unions may be monogamous or polygamous, legal or illegal. The extent to which various types of unions (concubinage, polygamy, polyandry, inherited widows, etc.) are socially accepted will determine

the modifications which will be required to meet national needs. For example, in countries which permit polygamy, it may be desirable to include a question on number of current wives. Modifications should be made within the framework of the basic classification in order to maintain international comparability in so far as possible.

172. In some countries it may be necessary to take into account customary unions (which are legal and binding under customary law) and extra-legal unions, the latter often known as de facto (consensual) unions. Some countries will also wish to distinguish between married persons living with their spouses and those living apart from their spouses.

173. Some countries have experienced difficulties with distinguishing (a) between persons in formal marriages and those in de facto unions, (b) between persons legally separated and those formally married but de facto separated, and even (c) between persons legally separated and those legally divorced. If any of these circumstances necessitate a departure from the recommended classification of marital status, the composition of each category should be clearly stated.

174. The marital status categories described above do not provide complete information on the range of de facto unions of varying degrees of stability, which may be common in some countries; nor do they adequately describe the prevalence of formal marriage combined with relatively stable de facto unions outside of marriage. Information on these relationships is very useful in studies of fertility but it is not possible to provide an international recommendation on this matter because of the different circumstances prevailing among countries. It is suggested, however, that countries which wish to investigate these relationships should consider the possibility of collecting separate data for each person on formal marital unions, on de facto unions and on the duration of each type of union.

(37) Number of previous marriages

175. Number of previous marriages is the number of marriages entered into "before" the one being contracted, or before the one being dissolved by divorce, irrespective of whether these marriages were dissolved by death or divorce, and of whether they were polygamous.

(38) Marriage order

176. Marriage order, a derived topic, is the rank order (i.e., first, second, third etc.) of the marriage being contracted or of the marriage being dissolved. To compute marriage order, the required information is provided by the item on number of previous marriages (topic 37).

(39) Mode of dissolution of previous marriages

177. The legal contract of marriage can be dissolved by: (a) the death of one of the spouses, (b) a divorce decree, effective as of the decree's date, and (c) cancellation (annulment), effective as of the date of the marriage. For definitions of "marriage", "divorce" and "annulment", see paragraph 46.

178. Previous marriages refer to marriages contracted prior to the marriage currently being either contracted (in the case of marriage) or dissolved (in the case of a divorce).

(40) Educational attainment

179. Educational attainment (of parents, decedents, brides, grooms and divorcees) is the highest grade completed within the most advanced level attended in the educational system of the country where education was received. For international purposes, a grade is a stage of instruction usually covered in the course of a school year.

180. Information on educational attainment should be recorded so as to permit the following levels of education to be identified: 17/

(a) Education preceding the first level (e.g., nursery school, kindergarten, infant school), which provides education for children who are not old enough to enter a school at the first level;

(b) Education at the first level (e.g., elementary school, primary school), of which the main function is to provide instruction in the tools of learning;

(c) Education at the second level (e.g., middle school, secondary school, high school, vocational school, teacher-training school at this level), which is based upon at least four years' previous instruction at the first level, and provides general or specialized instruction, or both;

(d) Education at the third level (e.g., university, teachers college, higher professional school), which requires, as a minimum condition of admission, the successful completion of education at the second level, or evidence of the attainment of an equivalent level of knowledge;

(e) Special education, which covers all general or vocational education given to children who are physically handicapped, mentally handicapped, socially maladjusted or in other special categories. This education is ordinarily not classified by level or grade.

(41) Literacy status

181. Literacy status refers to the ability both to read and to write. Data on literacy should be collected so as to distinguish between persons who are literate and those who are illiterate. A person is literate if he can, with understanding, both read and write a short, simple statement on his everyday life. A person is illiterate if he cannot, with understanding, both read and write a short, simple statement on his everyday life. 18/ Hence, a person capable of reading and writing

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17/ The definitions are those of the United Nations Educational, Scientific and Cultural Organization, Recommendation Concerning the International Standardization of Educational Statistics, Adopted by the General Conference at its Tenth Session, Paris, 3 December 1958.

18/ United Nations Educational, Scientific and Cultural Organization, Manual of Educational Statistics, first edition (Paris, 1961), p. 158.

only figures or his name should be considered illiterate, as should a person who can read but not write and one who can read and write only a ritual phrase which has been memorized.

182. The language in which a person can read and write is not a factor in determining literacy and need not ordinarily be considered. In multilingual countries, however, this information may be essential for the determination of educational policy and would, therefore, be a useful additional subject of inquiry.

183. Data on literacy should be collected for all persons 10 years of age and over. In order to permit international comparisons of data on adult literacy, however, any tabulations of literacy not cross-classified by detailed age should at least distinguish between persons under 15 years of age and those 15 years of age and over.

184. Because of the possible reluctance of at least some illiterate persons to admit to their illiteracy and the difficulties of applying a test of literacy during an investigation, the data collected may not be highly accurate. If it is considered likely that this deficiency is significant, the possibility should be stated in the publications of the data. If a literacy test has been applied it should be described in detail. In view of the possibility of unreliable response, the value of Educational attainment (see topic 40) as an alternative should be considered.

(42) Ethnic and/or national group

185. The ethnic and/or national groups of the population about which information needed in different countries are dependent upon national circumstances. Some of the bases on which ethnic groups are identified are: ethnic nationality (i.e. country or area of origin as distinct from citizenship or country of legal nationality), race, colour, language, religion, customs of dress or eating, tribe or various combinations of these characteristics. In addition, some of the terms used, such as "race", "origin" or "tribe", have a number of different connotations. The definitions and criteria applied by each country investigating ethnic characteristics of the population must, therefore, be determined by the groups which it desires to identify. By the nature of the subject, these groups will vary widely from country to country so that no internationally accepted criteria can be recommended.

186. Because of the difficulties of interpretation which may occur, it is important that, where such an investigation is undertaken, the basic criteria used should be clearly explained so that the meaning of the classification will be readily apparent. It is also suggested that the principal classification be a few broad categories, leaving open the possibility of a more detailed breakdown for important tribal or other groups where these are relevant.

(43) Citizenship

187. Citizenship (of parents, of decedents, brides, grooms and divorcees) is defined as the legal nationality of the person concerned.

188. Data on citizenship should be collected so as to permit the characterization of the persons concerned as (a) citizens, including those citizens by birth and those who acquired citizenship after birth through naturalization, option, marriage, declaration, etc. and (b) aliens. Information on the country of citizenship of aliens should also be collected.

189. For countries where the population includes a significant proportion of naturalized citizens, it may be desirable to obtain additional information distinguishing citizens by birth from citizens by naturalization in order, for example, to study possible differentials in fertility or mortality.

190. Instructions should be given for the disposition to be made of (a) stateless persons, (b) persons with dual nationality, (c) persons in process of naturalization and (d) any other groups of ambiguous citizenship.

Economic characteristics

191. The economic characteristics which are considered useful indices of socio-economic status are type of activity and occupation.

192. It is extremely difficult to obtain accurate information on economic characteristics. Among the problems are (1) adoption of a suitable time reference, (2) establishment of a correspondence between the population census and the vital registration system, and (3) proper phrasing of questions. The problem of achieving correspondence between vital statistics and population census data is a complex one because census data relate to conditions at a point in time whereas the information on vital statistics - at least that obtained by means of a registration system - is collected on a continuing basis, i.e., as events occur.

193. However, because of the importance of information on economic characteristics as indicators of socio-economic status in many research studies of interest to demographers, economists, sociologists, family planning and public health workers, the collection of data on type of activity and occupation is recommended for inclusion in a vital statistics system. So as to achieve maximum conceptual agreement between the census and the vital registration system, its inclusion requires, of course, that the definitions and methods used in the population census be carefully studied and that the instructions to the registrars give clear and precise definitions of the required concepts.

194. The definitions of the different economic characteristics given in paragraphs 195-206 below are adapted from the Principles and Recommendations for the 1970 Population Censuses. 19/

(44) Type of activity

195. Type of activity is the relationship of each person to current economic activity. Information should be collected for each person at or above the minimum age for which economic characteristics are to be tabulated as to whether or not the person concerned is economically active.

19/ See chap. II, foot-note 13, paras. 247-248, 288-297.

196. Particular attention should be given to groups which may be especially difficult to classify, such as female unpaid family workers in agriculture, young persons seeking work for the first time and persons receiving pensions consequent upon retirement from one job who are, at the same time, working at another job.

197. The minimum age-limit adopted for the question on economic activity should be set in accordance with the conditions in each country, but never higher than 15 years. Those countries which have a large proportion of their labour force engaged in agriculture, a type of activity in which, normally, many children participate, will need to select a lower minimum age than highly industrialized countries, where employment of young children is rare. In order to permit international comparisons of data on the economically active population, however, any tabulations of economic characteristics not cross-classified by detailed age should at least distinguish between persons under 15 years of age and those 15 years of age and over.

198. The adoption of a specific time reference for data on economic characteristics is fundamental to the concept of the economically active population. It is recommended that the time-reference period for vital statistics purposes should be no longer than one week. 20/

199. Economically active population comprises all persons of either sex who furnish the supply of labour for the production of economic goods and services during the time-reference period chosen for the investigation. It includes both persons in the civilian labour force and those serving in the armed forces. The civilian labour force comprises both persons employed and those unemployed during the time-reference period. 21/ These two groups should be distinguished in accordance with the following criteria:

200. The employed comprise all persons, including family workers, who worked during the time-reference period established for data on economic characteristics (see paragraph 198) or who had a job in which they had already worked but from which they were temporarily absent because of illness or injury, industrial dispute, vacation or other leave of absence, absence without leave, or temporary disorganization of work due to such reasons as bad weather or mechanical breakdown. 22/

201. The unemployed consist of all persons who, during the reference period, were not working but who were seeking work for pay or profit, including those who never worked before. Also included are persons who, during the reference period, were not seeking work because of temporary illness, because they made arrangements to start a new job subsequent to the reference period, or, because they were on

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20/ See International Labour Office, International Standardization of Labour Statistics, Geneva, 1959, pp. 44-45.

21/ Ibid.

22/ Ibid.

temporary or indefinite lay-off without pay. 23/ Where employment opportunities are very limited, the unemployed should also include persons who were not working and were available for work, but were not actively seeking it because they believed that no jobs were open. The recorded data on the unemployed should distinguish persons who never worked before.

202. In classifying by type of economic activity, participation in an economic activity should always take precedence over a non-economic activity; hence, employed and unemployed persons should not be included in the not economically active population, even though they may also be, for example, students or home-makers.

203. Not economically active population comprises the following functional categories:

(a) Home-makers: persons of either sex, not economically active, who are engaged in household duties in their own home; for example, housewives and other relatives responsible for the care of the home and children. (Domestic servants working for pay, however, are classified as economically active.)

(b) Students: persons of either sex, not economically active, who attend any regular educational institution, public or private, for systematic instruction at any level of education.

(c) Income recipients: persons of either sex, not economically active, who receive income from property or other investment, royalties, or pensions from former activities.

(d) Others: persons of either sex, not economically active, who are receiving public aid or private support, and all other persons not falling in any of the above categories, such as children not attending school.

204. Since some individuals may be classifiable in more than one category of the not economically active population (e.g., a person may be a student and a home-maker at the same time), the enumeration instructions should indicate the order of preference for recording persons in one or another of the categories. Consideration might also be given to presenting the categories on the questionnaire in the preferred order because persons tend to answer with the first category which applies to them.

(45) Occupation

205. Occupation (of parents, decedents, brides, grooms and divorcees) refers to the kind of work done during the time-reference period established for data on economic characteristics (see paragraph 198) by the person employed (or performed previously by the unemployed), irrespective of the industry or the status (as employer, employee etc.) in which the person should be classified.

23/ Ibid.

206. For purposes of international comparisons, it is recommended that countries compile their data in accordance with the International Standard Classification of Occupations, 1966 (ISCO, 1966). 24/ If this is not possible, provision should be made for the categories of the classification employed to be convertible to the ISCO, 1966 or at least to the minor (two-digit) groups of this classification. If national data are not classified in conformity with the ISCO, 1966 an explanation of the differences should be given.

(46) Socio-economic status

207. The purpose of a classification of vital statistics by socio-economic status is to identify different population groups which are, on the one hand, reasonably homogeneous and, on the other hand, likely to be fairly clearly distinguishable from other groups in respect of their vital statistics properties and which can, therefore, be used to ascertain the relationship between patterns of vital events, and the socio-economic position of individuals (or households).

208. Socio-economic status can be based entirely on the economic characteristics of an individual or can take into account such other characteristics as educational attainment and similar social traits.

Other characteristics (of the event)

(47) Type of birth

209. Type of birth refers to the single or multiple nature of the issue of the pregnancy to which the statistical report relates. Each live-born infant or dead foetus should be characterized as single, twin, triplet, and so forth, and, for each member of a multiple birth, provision should be made to indicate the sex of the other member(s) as well as his (their) condition with respect to being born alive or dead (foetal death).

(48) Attendant at birth or delivery

Attendant at birth or delivery is the person who delivered the mother of a live birth or still-born foetus. The data in this topic should be collected in such a way as to permit distinguishing births and foetal deaths according to whether attendance was by: (1) physician, (2) midwife, (3) nurse, (4) other paramedical personnel, (5) lay person, or (6) not stated.

(49) Certifier

211. Certifier is the person who certifies the causes of death. Data should be collected in such a way as to permit classification of deaths according to whether the cause was certified by a physician or surgeon who attended the decedent in his terminal illness, a medical practitioner who examined the body after death, a coroner or other legal authority, a midwife, a nurse or a layman.

24/ International Labour Organisation, International Standard Classification of Occupations, Revised Edition, Geneva, 1968.

212. "Medical certification of cause of death should normally be the responsibility of the attending physician. In the case of deaths certified by coroners or other legal authorities, the medical evidence supplied to the certifier should be stated on the certificate in addition to any legal findings." 25/

(50) Type of certification

213. Type of certification is a derived topic based on the identity of the certifier (see topic 49).

(51) Cause of death

214. Causes of death are "all those diseases, morbid conditions or injuries which either resulted in or contributed to death, and the circumstances of the accident or violence which produced any such injuries". 26/ Symptoms or modes of dying such as heart failure, asthenia etc., are not considered to be causes of death for statistical purposes.

215. The underlying cause of death which, rather than the direct or intermediate antecedent cause, is the one to be adopted as the main cause for tabulation of mortality statistics, is defined as "(a) the disease or injury which initiated the train of events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury". 27/

216. As noted in the Manual, "the purpose of the definition of 'causes of death' was to ensure that all the relevant information is recorded and that the certifier does not select some conditions for entry and reject others".

217. "In order to secure uniform application of the above principle, it is implicit that the medical certification form recommended by the World Health Assembly should be used. The use of such a form places the responsibility for indicating the train of events on the physician or surgeon signing the medical certificate at death. It is assumed, and rightly so, that the certifying medical practitioner is in a better position than any other individual to decide which of the morbid conditions led directly to death and to state the antecedent conditions, if any, which gave rise to this cause." 28/

218. Cause of death should be coded according to the Detailed list of three-digit categories, with or without the fourth-digit subcategories, of the International Classification of Diseases. The degree of detail in cross-classification by cause, sex, age, and area of territory will depend partly on the purpose and range of the

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25/ Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Deaths, 1965 revision, p. 469.

26/ Ibid., p. 469.

27/ Ibid., p. 469

28/ Ibid., p. 415.

statistics, and partly on the practical limits as regards the size of a particular table. The recommended groupings for analysis by the International Classification of Diseases should be in accordance with:

(i) The detailed list of three-digit categories, with or without fourth-digit subcategories; or

(ii) The list of 150 causes for tabulation of morbidity and mortality (list A); 29/ or

(iii) The list of 50 causes for tabulation of mortality (list B). 30/

(52) Hospitalization

219. Hospitalization refers to the type of place where the event occurred.

220. Information should be collected in such a way as to permit classification of births, foetal deaths and general deaths as having occurred in "hospitals" (as defined by each country), as distinguished from other institutions, private homes, and other places. For this purpose, an event should be regarded as having taken place in a hospital only if there were facilities for appropriate medical treatment. "Other institutions" would include all non-hospital establishments, while "other places" would include ships, automobiles, etc.

(53) Type of marriage

221. Type of marriage is the type of act, ceremony or process by which the legal relationship of husband and wife is being, or was, constituted. Data should be collected so as to permit the classification of marriages as civil, religious, civil/religious and customary.

Population-at-risk

222. Information on the population-at-risk is necessary to the analysis of vital events. This information may be derived, in field surveys, from a count of Household members present (topic 55) and Household members temporarily absent (topic 55).

223. In a strictly theoretical sense the population-at-risk is that population exposed to the occurrence of a vital event: the total population in the case of death, the married population in the case of divorce, and one-parity mothers, in the case of second births, for example. But information on vital events relates to events over a period of time, while that on the population-at-risk relates to conditions at a particular point in time; and, moreover, the character of the population-at-risk must perforce be in a state of continual change in response to the occurrence of the vital events themselves. The result is that for the calculation of vital rates and ratios one must resort to an approximation of the population-at-risk rather than attempt to relate vital events specifically to the

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29/ Ibid., pp. 439-444.

30/ Ibid., pp. 445-446.

population to which they can occur. In calculation of a crude birth rate, for example, the numerator consists of live births occurring throughout an entire year; and the denominator, of the population at the mid-point of that year. Yet this denominator will include the survivors of births occurring during the first half of the year and exclude those of the population dying during that period: in the first instance, including a group not precisely within the population at risk and, in the second instance, excluding a group that is. Such imprecision is seldom of any practical significance, but it should be noted that the term "population-at-risk", as used here, does not have quite the same meaning that it has in more theoretical discussions.

(54) Relationship to head of household

224. Relationship to head of household is a survey topic. It is the relationship of each member of the survey household to the head of the household. According to the Principles and Recommendations for the 1970 Population Censuses, 31/ the head of the household is that person in the household who is acknowledged as such by the other household members. In investigating the relationship of the members of the household to its head, a distinction should be made among: (a) head of household, (b) spouse of the head, (c) child of the head, (d) spouse of child of the head, (e) grandchild or great-grandchild of the head, (f) parent of the head or of the spouse of the head, (g) other relative of the head, (h) domestic servant, and (i) other person not related to the head. Where this classification is considered too detailed for successful collection of the information, categories (f) and (h) may be eliminated; persons who would fall into either of these categories can then be identified, as appropriate, as "other relative of the head" or "other person not related to the head".

Household characteristics

(55) Household members present, household members temporarily absent and household visitors

225. Household members present, household members temporarily absent, and household visitors are survey topics which refer to categories of persons in a household (for concept of "household", see para. 229). For the sake of clarity as well as analytical flexibility, it is recommended that the data relating to the household members be recorded for the three categories: (a) members usually resident who were present in the household at the time of inquiry, (b) members usually resident in the household but temporarily absent at the time of inquiry, and (c) persons usually resident elsewhere but temporarily present in the household at the time of the inquiry.

226. For purposes of obtaining information on births and deaths, it is recommended that the "household" include household members present and household members temporarily absent, and exclude household visitors.

31/ See chap. II, foot-note 13, para. 270.

(56) Household composition, household size and number of households

227. Household composition, household size and number of households are derived topics for which the information comes from answers to questions on Relationship to head of household (topic 54), Household members present (topic 55) and Household members temporarily absent (topic 55).

228. The concept of "household" is generally used as the unit of enumeration in field sample surveys and plays, therefore, a central role in obtaining information on vital statistics and the corresponding population.

229. For census purposes 32/ the concept of "household" is based on the arrangements made by persons, individually or in groups, for providing themselves with food or other essentials for living. A household may be either: (a) a one-person household, that is, a person who makes provision for his own food or other essentials for living without combining with any other person to form part of a multi-person household, or (b) a multi-person household, that is, a group of two or more persons who make common provision for food or other essentials for living. The persons in the group may to a greater or lesser extent pool their incomes and have a common budget; and they may be related or unrelated persons, or a combination of both.

230. Households usually occupy the whole, or part of, or more than one housing unit; 33/ but they may also be found living in camps, in boarding houses or hotels, or as administrative personnel in institutions; and they may be homeless. Households consisting of extended families which make common provision for food, or of potentially separate households with a common head, resulting from polygamous unions, may occupy more than one housing unit.

32/ Principles and Recommendations for the 1970 Population Censuses, paras. 146-147.

33/ For the definition of a housing unit, see Principles and Recommendations for the 1970 Housing Censuses, (United Nations publication, Sales No.: 67.XVII.4), para. 169.

IV. THE TABULATION PROGRAMME

A. Principles for compiling vital statistics

231. The principles proposed below are a fundamental element in a vital statistics system. It is important that the relation between tabulations from a comprehensive civil registration system and those from other sources of data be recognized with a view to obtaining the greatest possible conformity between them. For this reason, the principles are presented first in the form suitable to compilations from a comprehensive civil registration system, after which reference is made to certain differences imposed by the nature of the data collected in sample registration schemes and field surveys.

1. Where a comprehensive civil registration system exists

(a) Tabulation coverage

232. Statistics should be compiled where possible and as applicable for the total geographic area of the country, for each major and minor civil division and for each principal town. They should also distinguish urban and rural for at least the country as a whole and for each major and minor civil division.

233. Every effort should be made to ensure that national vital statistics refer to the total population of the country. Where registration of vital events among important population groups is less than 90 per cent complete, or the quantity or quality of original data is very deficient, separate tabulations may have to be made for the various segments of the population and an explanation of the limitations in coverage given wherever the statistics appear.

234. In countries where the social and economic characteristics of large segments of the population vary greatly, as, for example, amongst ethnic (or national) groups or nomads, it is recommended that, in so far as possible, the identity of each important population group be maintained in the tabulations.

(b) National centralized compilation from individual statistical reports

235. National vital statistics should be compiled in such a way as to obtain uniformity of classification and tabulation and to permit flexibility and adaptability in tabulation to meet national and international requirements.

236. Experience has shown that the procedure best adapted to produce the highest degree of accuracy, uniformity, and flexibility is centralized compilation from individual reports which contain full information necessary for statistical purposes.

(c) Tabulation by calendar periods

237. Final tabulations should refer to a Gregorian calendar period, that is, to a solar month, quarter, or year, as appropriate. If for some reason (such as climate) national vital statistics are more meaningful on a different time base, provision should be made for supplying solar calendar-period tabulations in addition.

(d) Tabulation by date of occurrence or date of registration

238. Although tabulation by date of registration is easier, final tabulations for any calendar period should be based on events which actually occurred, and not on those merely registered during that period. Should it be administratively necessary to tabulate final figures by date of registration rather than date of occurrence, evaluation studies should be made to determine the degree to which the one type of tabulation approximates the other. It is, of course, desirable that the analyses of this relationship be published.

239. For purposes of current weekly, monthly, or quarterly summaries which must be compiled rapidly, counts referring to date of registration may be used; but in this case also, it should be demonstrated to what degree analyses based on events which are registered during a period can be interpreted in terms of those which actually occurred during that period.

240. According to this principle, final annual tabulations by date of registration are appropriate only for those countries where it is established that data on that basis may for all practical purposes be used interchangeably with those by date of occurrence. This means, in effect, that unless registration is complete, date-of-registration statistics are not a desirable substitute for those by date of occurrence. It means also that date-of-occurrence statistics will need to be accompanied by a measure of the degree of underregistration. The reason for this rigid principle is that substitution of date-of-registration tabulations for those by date of occurrence will introduce distortions into the statistics unless date of registration does not differ appreciably from date of occurrence.

241. In support of date-of-registration tabulations, it is sometimes claimed that, in most countries, the total number of registered events will approximate closely the number which actually occurred, because the omission of registrations of a current year will be compensated for by the inclusion of a corresponding number from previous years. If registration is current - that is, if there is no serious underregistration problem and a short time period is allowed for compliance - then it might be assumed that the registration at the beginning of the year of events which occurred in the latter part of the previous year would perhaps compensate for subsequent failure to register in the current year events occurring in its closing weeks. This also assumes a fairly stable rate of occurrences and no sudden change in registration pattern. However, even in countries where registration is now complete, recording of a sizable number of delayed registrations from past years would invalidate these assumptions. In countries where there is a problem of underregistration, the gross volume of events included from past years will rarely approximate those omitted.

242. The factors to be considered in determining the national cut-off date include the legal length of time allowed for registration, with allowance for the "practical" time actually observed. Obviously if a period of 90 days is permitted for

registration in a remote area, then a period of at least 120 days would need to be allowed for completion of statistical reporting. The decision should be based on a consideration of all the factors involved - not only the permissible registration period, but the number of offices through which the report must travel before reaching the statistical authorities. The efficiency of communications must also be considered as well as the reliability of personnel in the registration service.

243. In so far as the statistical tabulations are concerned, this arbitrary cut-off date fixes the number of occurrences which will be counted for any period. However, reports received after that date should not be disregarded. If it can be done without delay to the programme, they should be included in the regular tabulations; otherwise they should be treated as a separate group. Unless they are numerous, detailed tabulations will not ordinarily be made, but an analysis by date of occurrence, date of registration, and date of reporting might be made to throw light on the problems of delays and underregistration and the manner in which these problems might be overcome.

(e) Tabulation by place of occurrence and place of residence

244. Ordinarily, there is a relatively small difference between a country's resident population and the population present in that country at some particular time. This is because international travel is usually restricted to members of business, military, or diplomatic missions, and to tourists and similar groups. None of these groups are likely to contribute in large numbers to either mortality or natality, nor is their total likely to be more than a fraction of that of the total population. Because of these comparatively small numbers, and because of the difficulties of arranging for international transfer or allocation of reports on vital events to the country of residence, it has become customary to consider the sum of vital events occurring within a country's national boundaries as a good approximation to the sum of those occurring among its residents.

245. Final tabulations for geographic areas less than the total national territory, and also for cities, should be made according to place of usual residence. In addition, such place-of-occurrence tabulations as are required for administrative or other purposes should be made.

246. As regards provisional or advance tabulations, there is no problem of place of residence versus place of occurrence if these tabulations are limited to national totals. But advance tabulations for subnational administrative units cannot be based on place of residence because of the difficulty of allocating events to place of usual residence in a short time. It is therefore useful if provisional or advance tabulations make the following distinctions among events occurring in a specified geographic unit: (1) those occurring to persons with usual residence in the unit, and (2) those to persons with usual residence outside the unit.

247. Definition of residence. The legal definition of residence is a difficult and complex one, varying according to national and local law. "Residence" in the legal sense may be determined by property ownership, by registration in a population register, by length of stay in the locality, and so forth. The definition adopted for the statistical purpose mentioned above should not be the legalistic one but one which will permit the relation of vital events to corresponding population groups for the computation of rates. Because of its necessary national variation, no international definition of "residence" is feasible.

248. Determination of place of residence for purposes of tabulation should be made as follows:

Live births	Place of residence of mother at time of delivery of live birth
Foetal deaths	Place of residence of woman at time of delivery of dead foetus
Induced abortion	Place of residence of woman at time abortion was performed
Infant deaths	Place of residence of mother at time of death of infant (or of infant, if mother is dead)
Deaths	Place of residence of decedent at death
Marriages	Place of residence of groom at time of marriage
Divorces	Place of last permanent residence of husband at time of divorce

249. Tabulation of data for a national territory should relate in general only to data on events occurring within the national boundaries. Events occurring outside the national boundaries should be included only where these relate to persons included in the population denominator for potential national rates, as for example, is frequently the case with deaths among tourists and armed forces, stationed outside the national boundaries. To implement this principle, provision should be made for international or bilateral exchange of records so that events occurring to residents of other countries can be excluded from occurrence data.

2. Where civil registration is lacking or deficient

250. Modifications of the principles set forth above will be necessary where what registration exists is based on a scheme of sample areas, or where data for vital statistics are collected in field surveys. For convenience, the principal modifications are noted under headings identical with those already used in discussing the comprehensive civil registration system.

(a) Tabulation coverage

251. Wherever sampling has been employed, compilations can be made only for the areas selected in the sample, although estimates based on these compilations may refer to the total population. Statistics should, of course, be compiled for the sample areas in a manner that will distinguish minor civil divisions, where appropriate, and retain the urban/rural differentiation. Important ethnic (or national) groups should also be distinguished as specified above (see para. 234).

(b) National centralized compilation from individual statistical reports

252. The principle applies to sample civil registration schemes but not to data collected in field surveys, because the latter method of collection does not employ the system of individual reports of vital events. However, the general goal of working toward uniformity, flexibility and adaptability in classifications and tabulations should be preserved.

(c) Tabulation by calendar periods

253. In the case of data collected in field surveys, tabulations will refer to a specified period (preferably 12 months). This process does not necessarily yield data for a calendar year; moreover, while it would be theoretically possible to derive monthly or quarterly compilations of vital events and related characteristics, this greater degree of detail is usually precluded by the size of the sample. A similar limitation exists in regard to monthly and quarterly compilations from sample registration schemes.

(d) Tabulation by date of occurrence or date of registration

254. The goal of recording data by date of occurrence rather than by date of registration can, of course, be met in the case of both sample registration schemes and field surveys.

(e) Tabulation by place of occurrence and place of residence

255. The desirability of tabulating vital events by place of residence holds no less for a system of registration based on a sample of areas than for one based on an entire population. However, in actual practice sampling requires an assumption not required in a system of 100 per cent registration: As it is impossible to transfer events between places of residence that fall within the sample and those that do not, it is necessary to assume that the place of residence is congruent with place of occurrence. Transfers are likewise impossible with sample field inquiries because only a proportion of the total number of areas will fall into the sample; however, in this case, by reason of the nature of the inquiries on vital events recommended for field surveys, the resultant data will represent place-of-residence statistics (events occurring to persons usually resident in households in the sample irrespective of where these persons may have been residing at the time of the event in question).

B. Recommended tabulations

256. For both national and international purposes, the programme of tabulation should provide annual data in such classifications as are required for national study of the incidence, time trends and geographic differentials of the most important characteristics of fertility, mortality, foetal mortality, nuptiality, and divorce, together with the exploration of their interrelationships. The tabulation programme should also seek to meet the requirements of international agencies and, in general, conform with the recommendations for achieving international comparability.

257. The design of the tabulation programme should be of a sort to permit maximum utilization of the available information. In formulating the tabulation programme, consideration should be given to the desirability of each tabulation, the practicability of performing the counting operations, the possibility for using the tabulation facilities ordinarily available to the statistical services of the country, and the suitability of the arrangement for deriving tables for publication.

258. The design of the tabulation programme should also take account of the known or presumed quality of the basic data with respect to accuracy and completeness of coverage. An extensive tabulation programme is useful only when the degree of completeness exceeds 90 per cent. Short of that, tabulation should be limited to simple tables and attention focused on achieving either complete registration or reliable survey coverage.

259. The tabulations set forth below are divided into: those appropriate to (1) data collected by the civil registration method and (2) data collected by sample field survey.

1. For data collected by the civil registration method

(a) Scope and objective of tabulations

260. A suggested basic annual programme for the tabulation of live births, deaths, foetal deaths, marriages and divorces, including suggested standard classification schemes, is given below. This programme makes use of all the topics in paragraph 71 and consists of tabulations which appear to be of major general importance for purposes of demographic analysis, and for studies concerned with social and economic development. It should not be overlooked, however, that a country's vital statistics are more useful for administration and planning, and also for general scientific purposes, if they are tabulated in relation to the significant social and economic groups which can be identified within that country. However, because of the diversity of such groups, they are not listed in the basic tabulation programme below. Countries will also wish to compile their vital statistics in relation to the other variables given in paragraph 71 and by "urban-rural" groupings, by localities classified according to size, etc.

261. It is emphasized that the tabulations outlined below do not constitute a working programme of operating specifications. The manner in which these data are to be obtained from the tabulations will vary according to the types of equipment available. Hence, in designing operating specifications these suggested tabulations will need to be combined in such a way as to obtain the maximum utilization of equipment at hand.

262. Nor do the suggested tabulations constitute a publication programme; for it may not be desirable to make annual publication of the detailed classifications indicated below, or it may be inexpedient to publish the data in these forms. The tabulations listed illustrate therefore, only the cross-classifications and counts which are considered generally desirable for a country's annual programme.

263. Since the tabulation programme for countries where civil registration systems operate is based on all topics in paragraph 71, both first and second priority, no attempt has been made to subdivide them into "priority tabulations" and "other useful tabulations". Instead, they are presented in terms of primary tabulations in which the topics of first priority are identified by an asterisk accompanied by optional extensions. The notation used indicates such extensions by addition of a lower case letter of the alphabet to the principal number of the tabulation. For example, Tabulation LB-2 is extended by LB-2a and LB-2b.

264. Classification by geographic variable is not shown in the tables, except for the identification of the basic place-of-occurence and place of residence tabulations. It is assumed that each country will compile data for at least (a) the country as a whole; (b) each major civil division, and (c) each principal city or town.

265. Similarly, the basis of tabulation, that is, the population in which the events are counted, is not specified, as the principle set forth in paragraph 232 is assumed to be operative in each tabulation.

266. Accompanying each set of tabulations, i.e., the primary tabulation and its extensions, is a statement of the principal uses of the data supplied by these tabulations, together with an illustrative sketch outline of each tabulation, showing one way of furnishing the required classifications of attributes. It should be emphasized that these sketches are only illustrative; they are in no sense recommended formats for the tabulation, as the actual formats will depend on many other factors.

267. Nor are the tabulations described below presented as models for completed tables. The purpose here is to present a view of the types of subject-matter sought as end-products. In the presentation of results various elements may be combined as parts of a single table.

(b) List of tabulations

268. In the following list the title of each tabulation is given in order to facilitate a summary appraisal of the scope of the programme. The detailed specifications for each tabulation follow immediately upon the list.

TITLE

/Titles in capital letters indicate primary tabulations; all others are optional extensions. An asterisk (*) indicates topic of first priority./

LIVE BIRTHS

LB-1. LIVE BIRTHS BY PLACE OF OCCURRENCE*

- LB-1a. Live births cross-classified by place of usual residence* of mother and by place of occurence*
- LB-1b. Live births cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of mother

LB-2. LIVE BIRTHS BY ATTENDANT AT BIRTH*

- LB-2a. Live births by place of occurrence* classified by resident status of mother,* and cross-classified by attendant at birth* and hospitalization
- LB-2b. Live births cross-classified by birth-weight,* attendant at birth* and hospitalization

LB-3. LIVE BIRTHS BY MONTH OF OCCURRENCE*

LB-4. LIVE BIRTHS CROSS-CLASSIFIED BY SEX* AND LEGITIMACY STATUS*

LB-5. LIVE BIRTHS BY AGE* OF MOTHER

- LB-5a. Live births cross-classified by age* of mother and by sex* of child
- LB-5b. Live births cross-classified by age* of mother and by birth order*
- LB-5c. Live births cross-classified by age* of mother and by legitimacy status* of child
- LB-5d. Live births by age* and by literacy status (or by educational attainment) of mother
- LB-5e. Live births cross-classified by age* and by ethnic and/or nationality group of mother
- LB-5f. Live births cross-classified by age* of mother and by age of father
- LB-5g. Live births by age* and place of birth of mother
- LB-5h. Live births cross-classified by age* and by place of birth of mother, for each legitimacy status* of child

LB-6. LIVE BIRTHS BY AGE* OF FATHER

- LB-6a. Live births cross-classified by age* and by occupation of father
- LB-6b. Live births cross-classified by age* and type of activity of father

LB-6c. Live births cross-classified by age of father and by legitimacy status* of child

LB-6d. Live births cross-classified by age and place of birth of father

LB-6e. Live births cross-classified by age* and ethnic and/or nationality group of father

LB-6f. Live births cross-classified by age* and by literacy status (or by educational attainment) of father

LB-7. LIVE BIRTHS CROSS-CLASSIFIED BY AGE* OF MOTHER AND BY LIVE-BIRTH ORDER*

LB-7a. Live births cross-classified by age* of mother and by total birth-order*

LB-7b. Live births cross-classified by age* of mother, by live-birth order* and by sex* of child

LB-7c. Live births cross-classified by age* of mother, by live-birth order* and by legitimacy status* of child

LB-7d. Live births cross-classified by age* of mother and by live-birth order* for each category of educational attainment of mother

LB-7e. Live births cross-classified by age* of mother and by live-birth order* for each ethnic and/or nationality group of mother

LB-7f. Live births cross-classified by age* of mother and by live-birth order* for each occupational group of mother

LB-7g. Live births cross-classified by age* of mother and by live-birth order* for each type of activity of mother

LB-8. LEGITIMATE LIVE BIRTHS BY DURATION OF MARRIAGE*

LB-8a. Legitimate* live births cross-classified by duration of marriage* and by live-birth order*

LB-8b. Legitimate* live births cross-classified by duration of marriage* and by age* of mother

LB-8c. Legitimate* live-births cross-classified by duration of current marriage* and by live-birth order* for each age* (present) of mother

LB-9. LIVE BIRTHS CROSS-CLASSIFIED BY LIVE-BIRTH ORDER* AND BY INTERVAL SINCE LAST PREVIOUS LIVE-BIRTH* TO MOTHER

LB-10. LIVE BIRTHS BY BIRTH-WEIGHT

LB-10a. Live births cross-classified by birth-weight*(or by gestational age) and by occupation* of mother

LB-10b. Live births cross-classified by birth-weight* and by gestational age

DEATHS

DE-1. DEATHS BY PLACE OF OCCURRENCE*

DE-1a. Deaths by place of occurrence* classified by resident* status of decedent and cross-classified by hospitalization and by type of certification*

DE-2. DEATHS BY PLACE OF USUAL RESIDENCE* OF DECEDENT

DE-2a. Deaths cross-classified by place of usual residence* of decedent and by place of occurrence*

DE-2b. Deaths cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of decedent

DE-3. DEATHS BY MONTH OF OCCURRENCE*

DE-4. DEATHS CROSS-CLASSIFIED BY SEX* AND AGE*

DE-4a. Deaths cross-classified by age* and marital status* for each sex*

DE-4b. Deaths of married* persons cross-classified by age* of decedent and age of surviving spouse, for each sex*

DE-4c. Deaths of married* persons cross-classified by age* and by duration of current marriage, for each sex*

DE-4d. Deaths cross-classified by age* and type of activity of decedent

DE-4e. Deaths cross-classified by age* and occupation for each sex*

DE-4f. Deaths cross-classified by age* and ethnic and/or nationality group of decedent

DE-4g. Deaths cross-classified by age* and by literacy status (or educational attainment), for each sex*

DE-4h. Female deaths cross-classified by age* and number of live-born issue

DE-5. DEATHS CROSS-CLASSIFIED BY MONTH OF OCCURRENCE* AND SELECTED CAUSES* OF DEATH

DE-6. DEATHS CROSS-CLASSIFIED BY AGE* AND BY CAUSE* OF DEATH, FOR EACH SEX*

DE.6a. Deaths cross-classified by age*, by occupation and by cause* of death for each sex*

DE-7. DEATHS CROSS-CLASSIFIED BY TYPE OF CERTIFICATION* AND CAUSE* OF DEATH

INFANT DEATHS

ID-1. INFANT DEATHS (UNDER ONE YEAR OF AGE) BY PLACE OF OCCURRENCE*

ID-2. INFANT DEATHS (UNDER ONE YEAR OF AGE) BY PLACE OF RESIDENCE* OF MOTHER

ID-3. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE* and by SEX*

- ID-3a. Infant deaths (under one year of age) cross-classified by age* and legitimacy status, for each sex*
- ID-3b. Infant deaths (under one year of age) cross-classified by age* and by year of birth* for each sex*

ID-4. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE* AND BY MONTH OF OCCURRENCE*

ID-5. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY SELECTED CAUSES* OF DEATH AND BY SEX*

- ID-5a. Infant deaths (under one year of age) cross-classified by selected causes* of death and by age*, for each sex*
- ID-5b. Infant deaths (under 28 days of age) cross-classified by cause* of death and by age*, for each sex*

FOETAL DEATHS

FD-1. FOETAL DEATHS BY PLACE OF OCCURRENCE*

- FD-1a. Foetal death by place of occurrence* classified by resident status of woman* and cross-classified by hospitalization and by type of certification

FD-2. FOETAL DEATHS BY SEX* AND BY GESTATIONAL AGE*

- FD-2a. Foetal deaths cross-classified by gestational age* and by cause of death, for each sex*
- FD-2b. Foetal deaths cross-classified by gestational age* and by occupation of woman
- FD-2c. Foetal deaths cross-classified by gestational age* and by birth-weight

FD-3. LATE FOETAL DEATHS CROSS-CLASSIFIED BY SEX* AND LEGITIMACY STATUS* OF FOETUS

FD-4. LATE FOETAL DEATHS CROSS-CLASSIFIED BY AGE* OF WOMAN AND LEGITIMACY STATUS* OF FOETUS, FOR EACH SEX*

FD-4a. Late foetal deaths cross-classified by age* and ethnic and/or nationality group of woman

FD-4b. Late foetal deaths cross-classified by age* and by place of birth of woman, for each legitimacy status* of foetus

FD-4c. Legitimate* late foetal deaths cross-classified by age* of woman and duration of marriage*

FD-5. LATE FOETAL DEATHS CROSS-CLASSIFIED BY AGE* OF WOMAN AND BY TOTAL BIRTH ORDER*

LIVE BIRTHS AND FOETAL DEATHS

LB and FD-1. CONFINEMENTS CROSS-CLASSIFIED BY TYPE OF BIRTH* AND STATUS OF ISSUE (LIVE BORN OR BORN DEAD)

LB and FD-1a. Confinements cross-classified by birth order* and by birth-weight, for each type of birth*

LB and FD-1b. Confinements cross-classified by type of birth* and by age* of mother/woman for each sex*

MARRIAGES

MA-1. MARRIAGES BY MONTH OF OCCURRENCE*

MA-2. MARRIAGES BY PLACE OF USUAL RESIDENCE* OF GROOM

MA-2a. Marriages cross-classified by place of usual residence* of groom and by place of occurrence*

MA-2b. Marriages cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of groom

MA-3. MARRIAGES CROSS-CLASSIFIED BY AGE* OF BRIDE AND BY AGE* OF GROOM

MA-3a. Marriages cross-classified by ethnic and/or nationality group* and age* of bride and groom separately

MA-4. MARRIAGES CROSS-CLASSIFIED BY PREVIOUS MARITAL STATUS* OF BRIDE AND BY PREVIOUS MARITAL STATUS* OF GROOM

MA-4a. Marriages cross-classified by previous marital status* and by age* of bride and groom separately

MA-4b. Marriages cross-classified by number of previous marriages of bride and by number of previous marriages of groom

MA-5. MARRIAGES CROSS-CLASSIFIED BY LITERACY STATUS (OR EDUCATIONAL ATTAINMENT) OF BRIDE AND GROOM

MA-6. MARRIAGES BY OCCUPATION OF GROOM

MA-7. MARRIAGES BY TYPE OF MARRIAGE*

DIVORCES

DI-1. DIVORCES BY PLACE OF OCCURRENCE*

DI-2. DIVORCES BY PLACE OF USUAL RESIDENCE* OF HUSBAND

DI-2a. Divorces cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of husband

DI-3. DIVORCES CROSS-CLASSIFIED BY AGE* OF WIFE AND BY AGE* OF HUSBAND

DI-3a. Divorces cross-classified by ethnic and/or nationality group and age* of divorcees, tabulate separately for husband and wife

DI-4. DIVORCES CROSS-CLASSIFIED BY DURATION OF MARRIAGE* AND AGE* OF DIVORCEES; TABULATE SEPARATELY FOR HUSBAND AND WIFE

DI-4a. Divorces cross-classified by age* at marriage of wife and age* at marriage of husband

DI-4b. Divorces cross-classified by year of marriage* and age* at marriage of divorcees; tabulate separately for husband and wife

DI-5. DIVORCES CROSS-CLASSIFIED BY NUMBER OF DEPENDENT CHILDREN* AND DURATION OF MARRIAGE*

DI-5a. Divorces cross-classified by number of dependent children* and year of marriage*

DI-6. DIVORCES CROSS-CLASSIFIED BY LITERACY STATUS (OR EDUCATIONAL ATTAINMENT) OF DIVORCEES

DI-7. DIVORCES CROSS-CLASSIFIED BY OCCUPATION OF HUSBAND AND BY OCCUPATION* OF WIFE

DI-7a. Divorces cross-classified by occupation and by age* of husband

DI-8. DIVORCES CROSS-CLASSIFIED BY NUMBER OF PREVIOUS MARRIAGES OF HUSBAND AND NUMBER OF PREVIOUS MARRIAGES OF WIFE

(c) Specifications for each tabulation

269. Each set of tabulations listed above is described in the following paragraphs. The attribute classifications are specified in each case: for definitions of the respective topics see chapter III. Under "Use of tabulations", the principal uses of the data supplied by each set of tabulations are set forth. This is followed for each tabulation of the set by an illustrative sketch outline.

LB-1 LIVE BIRTHS BY PLACE OF OCCURRENCE*

Classification

A. Place of occurrence: 1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

Optional extensions

LB-1a Live births cross-classified by place of usual residence* of mother and by place of occurrence*

Classification

A. Place of usual residence: 1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

B. Place of occurrence: (see LB-1)

LB-1b Live births cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of mother

Classification

A. Place of usual residence: (see LB-1a)

B. Place of previous residence (at a specified time in the past): (see paras. 116-119)

Use of tabulations:

For administrative and research purposes, the above information is needed to study the geographic distribution of births for administrative purposes, e.g., for the comparison of births by place of occurrence and by place of usual residence of mother in order to judge adequacy and geographic scope of medical-care facilities. The tabulation by place of previous residence (at a specified time in the past) would provide useful information on the sources and direction of migration between civil divisions, and also on the characteristics of migrant and non-migrant populations.

Illustration LB-1. LIVE BIRTHS BY PLACE OF OCCURRENCE*

PLACE OF OCCURRENCE	NUMBER
Total	
Urban	
Rural	
City or town A a/	
.	
.	
.	
City or town Z a/	
Major civil division A a/	
Urban	
Rural	
Minor civil division a a/	
Urban	
Rural	
Minor civil division b a/	
Urban	
Rural	
(etc.)	
Major civil division B a/	
Urban	
Rural	
Minor civil division a a/	
Urban	
Rural	
Minor civil division b a/	
Urban	
Rural	
(etc.)	
.	
.	
.	
Major civil division Z a/	
Urban	
Rural	
Minor civil division a a/	
Urban	
Rural	
(etc.)	

a/ Name of city, town, major civil division or minor civil division.

Optional extensions

Illustration LB-1a. Live births cross-classified by place of usual residence* of mother and by place of occurrence*

Place of occurrence	Total	Place of usual residence of mother			
		Major civil division A a/	Major civil division B a/	.....	Major civil division Z a/
Total		Note: Place of occurrence and Place of usual residence should refer to at least the major civil divisions of each country and their urban/rural components and should be extended to such other civil divisions and their urban/rural components as may be required for national use.			
Major civil division A a/					
Major civil division B a/					
.					
.					
.					
Major civil division Z a/					

a/ Name of major civil division.

Illustration LB-1b. Live births cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of mother

/As in illustration LB-1a with Place of previous residence of mother (at a specified time in the past) substituted for Place of occurrence./

LB-2 LIVE BIRTHS BY ATTENDANT AT BIRTH*

Classification

A. Attendant:
1. physician
2. midwife
3. nurse
4. other paramedical personnel
5. lay person
6. not stated

Optional extensions

LB-2a Live births by place of occurrence* classified by resident status of mother,* and cross-classified by attendant at birth* and hospitalization

Classification

A. Place of occurrence: (see LB-1)

B. Residence of mother:
1. same as place of occurrence
2. other

C. Attendant at birth: (see LB-2)

D. Hospitalization
1. hospital
2. other institution
3. private home
4. other

LB-2b Live births cross-classified by birth-weight,* attendant at birth* and hospitalization

Classification

A. Birth-weight: expressed in grammes so as to make possible classification in 500-gramme intervals

B. Attendant at birth: (see LB-2)

C. Hospitalization: (see LB-2a)

Use of tabulations:

For gauging developments in public health and medical practice. The tabulation by place of occurrence cross-classified by attendant at birth and hospitalization provides information useful for the evaluation of the utilization of medical-care facilities and resources. The statistics on live birth by birth-weight as well as by hospitalization and attendant at birth are of great use in evaluating, e.g., the need for medical services in the case of low birth-weight infants.

Illustration LB-2. LIVE BIRTHS BY ATTENDANT AT BIRTH*

Total	Attendant at birth					
	Physician	Midwife	Nurse	Other paramedical personnel	Lay person	Not stated

Optional extensions

Illustration IB-2a. LIVE BIRTHS BY PLACE OF OCCURRENCE* CLASSIFIED BY RESIDENT STATUS OF MOTHER,* AND CROSS-CLASSIFIED BY ATTENDANT AT BIRTH* AND HOSPITALIZATION

Place of occurrence and hospitalization	Total	Resident status of mother													
		Same as place of occurrence							Other						
			Attendant at birth							Attendant at birth					
		Total	Physician	Midwife	Nurse	Other paramedical personnel	Lay person	Not stated	Total	Physician	Midwife	Nurse	Other paramedical personnel	Lay person	Not stated
Total country.....															
Hospital.....															
Other institutions....															
Private home.....															
Other.....															
Major civil division A[a/].															
(as for Total country)															
Major civil division B[a/].															
(as for Total country)															
.															
.															
.															
Major civil division Z[a/].															
(as for Total country)															

Note: Place of occurrence should refer to at least the major civil divisions of each country and their urban/rural components and should be extended to such other civil divisions and their urban/rural components as may be required for national use.

a/ Name of major civil division.

Illustration LB-2b. LIVE BIRTHS CROSS-CLASSIFIED BY BIRTH-WEIGHT,* ATTENDANT AT BIRTH* AND HOSPITALIZATION

Hospitalization and attendant at birth	Total	Birth weight			.....		
		Under 501 grammes	501-1,000 grammes	1,001-1,500 grammes		5,001 grammes or more	Not stated
Total							
Hospital							
Physician . . .							
Midwife							
Nurse							
Other paramedical personnel . .							
Lay person . .							
Not stated . .							
Other institutions . .							
(as for hospital)							
Private home . .							
(as for hospital)							
Other							
(as for hospital)							

LB-3 LIVE BIRTHS BY MONTH OF OCCURRENCE*

Classification

A. Month of occurrence:
1. January
2. February
3. March
4. April
.
.
.
.
12. December

Use of tabulations:

To establish time series and seasonal patterns important for short-term forecasting and deseasonalization of data.

Illustration LB-3. LIVE BIRTHS BY MONTH OF OCCURRENCE*

Month	Number
Total	
January	
February	
March	
April	
.	
.	
.	
December	

LB-4 LIVE BIRTHS CROSS-CLASSIFIED BY SEX* AND LEGITIMACY STATUS*

Classification

A. Sex:
1. male
2. female

B. Legitimacy status:
1. legitimate
2. illegitimate
3. not stated

Use of tabulations:

To ascertain levels and changes in illegitimate birth rates that are of importance to public health and welfare policies and programmes. Further cross-classification of legitimacy status with such items as age of mother (illustration LB-5c), birth order (illustration LB-7c), place of birth of mother (illustration LB-5h), and age of father (illustration LB-6d), would render useful analytical measures descriptive of patterns of illegitimacy.

Illustration LB-4. LIVE BIRTHS CROSS-CLASSIFIED BY SEX* AND LEGITIMACY STATUS*

Legitimacy status	Both sexes	Male	Female
Total			
Legitimate			
Illegitimate			
Not stated			

LB-5 LIVE BIRTHS BY AGE* OF MOTHER

Classification

A. Age of mother:
1. under 15 years
2. 15-19
3. 20-24
.
.
.
9. 50 and over
10. not stated

B. Age of mother:
1. single years up to 29
2. up to 35
3. up to 49

Optional extensions

LB-5a Live births cross-classified by age* of mother and by sex* of child

Classification

A. Age of mother: (see LB-5)

B. Sex of child:
1. male
2. female

LB-5b Live births cross-classified by age* of mother and by birth order* (see LB-7 and LB-7a-g)

LB-5c Live births cross-classified by age* of mother and by legitimacy status* of child

Classification

A. Age of mother: (see LB-5)

B. Legitimacy status: (see LB-4)

LB-5d Life births cross-classified by age* and by literacy status (or by educational attainment) of mother

Classification

A. Age of mother: (see LB-5)

B. Educational attainment categories: (see paras. 179-180)

C. Literacy status:
1. literate
2. illiterate
3. not stated

LB-5e Live births cross-classified by age* and by ethnic and/or nationality groups of mother

Classification

A. Age of mother: (see LB-5)

B. Ethnic and/or nationality groups: (see paras. 185-186)

LB-5f Live births cross-classified by age* of mother and by age of father

Classification

A. Age of mother: (see LB-5)

B. Age of father: (see LB-6)

LB-5g Live births cross-classified by age* and place of birth of mother

Classification

A. Age of mother: (see LB-5)

B. Place of birth: 1. native born

(a) major civil division

2. foreign born: each continent, each country within continent, which is the birthplace of a significant number of foreign born, all other countries (combined) in each continent, continent unknown.

LB-5h Live births cross-classified by age* and by place of birth of mother, for each legitimacy status* of child

Classification

A. Age of mother: (see LB-5)

B. Place of birth: (see LB-5g)

C. Legitimacy status: (see LB-4)

Use of tabulations:

Information on the age of persons subject to a vital event is essential for analytical purposes. Tabulation of live births by age of mother or father, both alone and in conjunction with such other items as birth order, legitimacy, occupation, and migrant status is essential to the study of fertility and fertility differentials. It is also requisite to the computation of replacement rates and to various population projections of significance in the formulation of welfare and social policy objectives, and in the study of consumption patterns.

Illustration LB-5. LIVE BIRTHS BY AGE* OF MOTHER

Total	Age of mother (in years)			.....		
	Under 15	15-19	20-24		50 and over	Not stated
	Note: The classification of age of mother may be optionally extended to show single years of age up to 29, 39 or 49 years.					

Optional extensions

Illustration LB-5a. Live births cross-classified by age* of mother and by sex* of child

Sex	Total	Age of mother (in years)			.....		
		Under 15	15-19	20-24		50 and over	Not stated
Both sexes							
Male							
Female							

Illustration LB-5b. Live births cross-classified by age* of mother and by birth order*

/See illustrations LB-7 and LB-7a. For further optional extensions including cross-classifications of additional topics, see illustrations LB-7 b-g./

Illustration LB-5c. Live births cross-classified by age* of mother and by legitimacy status* of child

Legitimacy status of child	Total	Age of mother (in years)			.....		
		Under 15	15-19	20-24		50 and over	Not stated
Total							
Legitimate							
Illegitimate . . .							
Not stated							

Illustration LB-5d. Live births cross-classified by age* and by literacy status (or by educational attainment) of mother

Literacy status (or educational attainment) of mother	Total	Age of mother (in years)			.....	50 and over	Not stated
		Under 15	15-19	20-24			
Total							
Literate							
Illiterate							
Not stated							
(or)							
Total							
First level of education not completed							
First level completed							
Second level started but not completed .							
Second level completed							
Third level started but not completed .							
Third level completed							
Special education (not classified by level)							
Level not stated . .							

Illustration LB-5e. Live births cross-classified by age* and by ethnic and/or nationality group of mother

Ethnic and/or nationality group of mother	Total	Age of mother (in years)			.....		
		Under 15	15-19	20-24		50 and over	Not stated
Total							
/Each national and/or ethnic group for which separate information is required/							
All others.							
Not stated							

Illustration LB-5f. Live births cross-classified by age* of mother and by age* of father

Age of father (in years)	Total	Age of mother (in years)			.....		
		Under 15	15-19	20-24		50 and over	Not stated
Total							
Under 20							
20-24							
25-29							
.							
.							
.							
55 and over							
Not stated							

Illustration LB-5g. Live births cross-classified by age* and place of birth of mother

Place of birth of mother	Total	Age of mother (in years)			.....		
		Under 15	15-19	20-24		50 and over	Not stated
Total							
Native born							
Major civil division A a/							
Major civil division B a/							
Major civil division C a/							
.							
.							
.							
Major civil division Z a/							
Foreign born							
Africa							
Country A a/							
Country B a/							
.							
.							
.							
Country Z a/							
All other countries							
Country not stated							
America, North (as above)							
America, South (as above)							
Asia (as above)							
Europe (as above)							
Oceania (as above)							
Continent not stated							

a/ Name of major civil division or country.

Illustration LB-5h Live births cross-classified by age* and by place of birth of mother, for each legitimacy status* of child

/As in illustration LB-5g, for each category of legitimacy status. For categories, see illustration LB-4/

LB-6 LIVE BIRTHS BY AGE* OF FATHER

Classification

A. Age of father:
1. under 20 years
2. 20-24
3. 25-29
.
.
.
9. 55 and over
10. not stated

Optional extensions

LB-6a Live births cross-classified by age* and by occupation of father

Classification

A. Age of father: (see LB-6)

B. Occupation: (see paras. 205-206)

LB-6b Live births cross-classified by age* and by type of activity of father

Classification

A. Age of father: (see LB-6)

B. Type of activity:
1. economically active
   a. employed
   b. unemployed
      i. total
      ii. seeking work for first time
2. not economically active
3. not stated

LB-6c Live births cross-classified by age* of father and legitimacy status* of child

Classification

A. Age of father: (see LB-6)

B. Legitimacy status: (see LB-4)

LB-6d Live births cross-classified by age* and place of birth of father

Classification

A. Age of father: (see LB-6)

B. Place of birth: (see LB-5g)

LB-6e Live births cross-classified by age* and ethnic and/or nationality group of father

Classification

A. Age of father: (see LB-6)

B. Ethnic and/or nationality groups (see paras. 185-186)

LB-6f Live births cross-classified by age* and by literacy status (or by educational attainment) of father

Classification

A. Age of father: (see LB-6)

B. Literacy status: (see LB-5d)

C. Educational attainment: (see paras. 179-180)

Use of tabulations:

The discussion of the uses of these tabulations is set forth under LB-5.

Illustration LB-6 LIVE BIRTHS BY AGE* OF FATHER

Total	Age of father (in years)			.....		
	Under 20	20-24	25-29		55 and over	Not stated

Illustration LB-6a. Live births cross-classified by age* and by occupation of father

Occupation of father	Total	Age of father (in years)			.....		
		Under 20	20-24	25-29		55 and over	Not stated
Total							
Major group 0/1		Note: Classification of occupation should be according to, or convertible to, International Labour Organisation International Standard Classification of Occupations, (ISCO 1966), at least to the minor (two-digit) groups.					
Minor group 0-1							
Minor group 0-2/0-3 . . .							
(etc.)							
Major group 2							
Minor group 2-0							
Minor group 2-1							
.							
.							
.							
Major group X							
Minor group X-1							
Minor group X-2							
Minor group X-3							
Armed Forces							

Illustration LB-6b. Live births cross-classified by age* and by type of activity of father

Type of activity of father	Total	Age of father (in years)			.....		
		Under 20	20-24	25-29		55 and over	Not stated
Total							
Economically active . . .							
Employed							
Unemployed							
of which seeking work for the first time. .							
Not economically active .							
Not stated							

Illustration LB-6c. Live births cross-classified by age* of father and by legitimacy status* of child

Legitimacy status of child	Total	Age of father (in years)			....		
		Under 20	20-24	25-29		50 and over	Not stated
/As in illustration LB-4/							

Illustration LB-6d. Live births cross-classified by age* and place of birth of father

Place of birth of father	Total	Age of father (in years)			.....		
		Under 20	20-24	25-29		55 and over	Not stated
/As in illustration LB-5g/							

Illustration LB-6e. Live births cross-classified by age* and ethnic and/or nationality group of father

Ethnic and/or nationality group of father	Total	Age of father (in years)			.....		
		Under 20	20-24	25-29		55 and over	Not stated
/As in illustration LB-5e/							

Illustration LB-6f. Live births cross-classified by age* and by literacy status (or by educational attainment) of father

Literacy status (or educational attainment) of father	Total	Age of father (in years)			.....		
		Under 20	20-24	25-29		55 and over	Not stated
/As in illustration LB-5d/							

LB-7 LIVE BIRTHS BY AGE* OF MOTHER, AND BY LIVE-BIRTH ORDER*

Classification

A. Age of mother: (see LB-5)

B. Birth order:
1. first
2. second
.
.
.
.
9. ninth
10. tenth and over
11. not stated

Optional extensions

LB-7a Live births cross-classified by age* of mother and by total-birth order*

Classification

A. Age of mother: (see LB-5)

B. Birth order: (see LB-7)

LB-7b Live births cross-classified by age* of mother, by live-birth order* and by sex* of child

Classification

A. and B.: (see LB-7, A and B)

C. Sex of child:
1. male
2. female

LB-7c Live births cross-classified by age* of mother, by live-birth order* and legitimacy status* of child

Classification

A. and B.: (see LB-7, A and B)

C. Legitimacy status: (see LB-4)

LB-7d Live births cross-classified by age* of mother and by live-birth order* for each category of educational attainment of mother

Classification

A. Age of mother: (see LB-5)

B. Birth order: (see LB-7)

C. Educational attainment categories: (see paras. 179-180)

LB-7e Live births cross-classified by age* of mother and by live-birth order* for each ethnic and/or nationality group of mother

Classification

A. Age of mother: (see LB-5)

B. Birth order: (see LB-7)

C. Ethnic and/or nationality groups: (see paras. 185-186)

LB-7f Live births cross-classified by age* of mother and by live-birth order* for each occupational group of mother

Classification

A. Age of mother: (see LB-5)

B. Birth order: (see LB-7)

C. Occupations: (see paras. 205-206)

LB-7g Live births cross-classified by age* of mother and by live-birth order*, for each type of activity of mother

Classification

A. Age of mother: (see LB-5)

B. Birth order: (see LB-7)

C. Type of activity: (see LB-6b)

Use of tabulations:

Live-birth order - that is order of the present live birth in relation to all previous live-births, whether nuptial or extra-nuptial - is an important indicator of current fertility pattern, particularly when tabulated in conjunction with birth order by age of mother: a combination that permits much more refined analysis of fertility changes and much more sensitive fertility projections than is the case when one or the other of these two variables is used alone. Additional value for analysis and forecasting lies in tabulating live birth order (or, better still, live birth order by age of mother) in combination with various socio-economic variables, e.g., economic activity, occupation, schooling, and migrant status.

Illustration LB-7. LIVE BIRTHS CROSS-CLASSIFIED BY AGE* OF MOTHER AND LIVE-BIRTH ORDER*

Age of mother (in years)	Total	Live-birth order					
		First	Second	.....	Ninth	Tenth and over	Not stated
Total							
Under 15							
15-19							
20-24							
.							
.							
.							
50 and over							
Not stated							

Optional extensions

Illustration LB-7a. Live births cross-classified by age* of mother and by total-birth order*

/As in illustration LB-7 with "Total-birth order" substituted for "Live-birth order"/

Illustration LB-7b. Live births cross-classified by age* of mother, by live-birth order* and by sex* of child

/As in illustration LB-7, for each sex of child/

Illustration LB-7c. Live births cross-classified by age* of mother, by live-birth order* and by legitimacy status* of child

/As in illustration LB-7, for each category of legitimacy status. For categories, see illustration LB-4./

Illustration LB-7d. Live births cross-classified by age* of mother and by live-birth order* for each category of educational attainment of mother

/As in illustration LB-7, for each category of educational attainment. For categories, see illustration LB-5d./

Illustration LB-7e. Live births cross-classified by age* of mother and by live-birth order* for each ethnic and/or nationality group of mother

/As in illustration LB-7, for each category of ethnic and/or nationality group. For categories, see illustration LB-5e./

Illustration LB-7f. Live births cross-classified by age* of mother and by live-birth order* for each occupational group of mother

/As in illustration LB-7, for each occupational group. For occupational groups, see illustration LB-6a./

Illustration LB-7g. Live births cross-classified by age* of mother and by live-birth order*, for each type of activity of mother

/As in illustration LB-7, for each type of activity. For types of activity, see illustration LB-6b./

LB-8 LEGITIMATE* LIVE BIRTHS BY DURATION OF MARRIAGE*

Classification

A. Duration of marriage:
1. under 1 year
2. 1 year
3. 2 years
.
.
.
10. 9 years
11. 10-14 years
12. 15-19 years
13. 20 years and over
14. not stated

(The interval "under 1 year" may also be broken down by months)

Optional extensions

LB-8a Legitimate* live births cross-classified by duration of marriage* and by live-birth order*

Classification

A. Duration of marriage: (see LB-8)

B. Birth order: (see LB-7)

LB-8b Legitimate* live births cross-classified by duration of marriage* and by age* of mother

Classification

A. Duration of marriage: (see LB-8)

B. Age of mother: (see LB-5)

LB-8c Legitimate* live births cross-classified by duration of current marriage* and by live-birth order* for each age* (present) of mother

Classification

A. Duration of marriage: (see LB-8)

B. Birth order: (see LB-7)

C. Age of mother: (see LB-5)

Use of tabulations:

Duration of marriage in combination with age of mother, birth order, and so forth, adds considerably to the analysis of fertility, particularly with regard to family formation. Information on duration of marriage is also useful for the analysis of family planning practice.

Illustration LB-8. LEGITIMATE* LIVE BIRTHS BY DURATION OF MARRIAGE*

	Duration of marriage (in years)							
Total	Under 1	1	2	.....	9	10-14	15-19	20 and over	Not stated

Optional extensions

Illustration LB-8a. Legitimate* live births cross-classified by duration of marriage* and by live-birth order*

		Duration of marriage (in years)								
Live-birth order	Total	Under 1	1	2	.....	9	10-14	15-19	20 and over	Not stated
/As in illustration LB-7/										

Illustration LB-8b. Legitimate* live-births cross-classified by duration of marriage* and by age* of mother

Age of mother (in years)	Total	Duration of marriage (in years)								
		Under 1	1	2	.....	9	10-14	15-19	20 and over	Not stated
/As in illustration LB-5/										

Illustration LB-8c. Legitimate* live births cross-classified by duration of current marriage* and by live-birth order* for each age* (present) of mother

/As in illustration LB-8a, with "Duration of current marriage" substituted for "Duration of marriage", for each age group of mother. For age groups, see illustration LB-5./

LB-9 LIVE BIRTHS CROSS-CLASSIFIED BY LIVE-BIRTH ORDER* AND BY INTERVAL SINCE LAST PREVIOUS LIVE BIRTH* TO MOTHER

Classification

A. Birth order:

1. second birth
2. third birth
.
.
.
5. sixth
6. seventh and over

B. Interval since last birth:

1. under 12 months
2. 12-17 months
3. 18-23 months
4. 24-29 months
5. 30-under 36 months
6. 36-under 48 months
7. 48 months-under 5 years
8. 5-under 10 years
9. 10 years and over

Use of tabulations:

This information is helpful in the study of fertility patterns and family planning practices. It is also of interest in social work and welfare policy and, in connexion with mortality data, in medical research.

Illustration LB-9. LIVE BIRTHS CROSS-CLASSIFIED BY LIVE-BIRTH ORDER* AND BY INTERVAL SINCE LAST PREVIOUS LIVE BIRTH* TO MOTHER

Live-birth order of last live birth	Total	Interval between last and previous live-birth (in months and years)								
		Under 12 months	12-17 months	18-23 months	24-29 months	30-35 months	3 yrs.	4 yrs.	5-9 yrs.	10 yrs. and over
Total		last birth in 1914	83	82	—					
Second . . .										
Third . . .										
.										
.										
.										
Sixth . . .										
Seventh . . and over .										

Y extend to higher

LB-10 LIVE BIRTHS BY BIRTH-WEIGHT*

Classification

A. Birth-weight: (see LB-2b)

Optional extensions

LB-10a Live births cross-classified by birth-weight* (or by gestational age) and by occupation of mother

Classification

A. Birth-weight: (see LB-2b)

B. Occupation of mother: (see paras. 205-206)

LB-10b Live births cross-classified by birth-weight and by gestational age

Classification

A. Birth-weight: (see LB-2b)

B. Gestational age:
1. under 28 weeks
2. 28-31 weeks
3. 32-35 weeks
4. 36-39 weeks
5. 40 weeks and over

Use of tabulations:

Birth-weight is an essential piece of information for various studies of mortality and child and maternal health. Statistics of live births by birth-weight are of great use in evaluating the need of medical services for the proper care of low birth-weight infants. On a residence basis, such statistics can reveal relationships between environmental factors and the incidence of low birth-weight as geographic patterns in distribution of low birth-weight among live-born infants. Such information can also be used in assessing the relation of certain pre-puerperal conditions (e.g. economic activity of mother) to the incidence of low birth-weight.

Illustration LB-10. LIVE BIRTHS BY BIRTH-WEIGHT*

	Birth weight							
Total	Under 501 grammes	501-1,000 grammes	1,001-1,500 grammes	1,501-2,000 grammes	2,001-2,500 grammes	.....	5,001 grammes or more	Not stated

Optional extensions

Illustration LB-10a. Live births cross-classified by birth-weight* (or by gestational age) and by occupation of mother

Occupation of mother	Total	Birth weight					....		
		Under 501 grammes	501-1,000 grammes	1,001-1,500 grammes	1,501-2,000 grammes	2,001-2,500 grammes		5,001 grammes or more	Not stated
/As in illustration LB-6a/		Note: If data on "birth weight" are not available "gestational age" may be substituted. For gestational age groups, see illustration LB-10b below.							

Illustration LB-10b. Live births cross-classified by birth-weight* and by gestational age

Gestational age (in weeks)	Total	Birth weight					.....		
		Under 501 grammes	501-1,000 grammes	1,001-1,500 grammes	1,501-2,000 grammes	2,001-2,500 grammes		5,001 grammes or more	Not stated
Total									
Under 28 weeks . . .									
28-31 weeks.									
32-35 weeks.									
36-39 weeks.									
40 weeks and over .									

DE-1 DEATHS BY PLACE OF OCCURRENCE*

Classification

A. Place of occurrence: 1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

Optional extension

DE-1a Deaths by place of occurrence* classified by resident* status of decedent and cross-classified by hospitalization and by type of certification*

Classification

A. Place of occurrence: (see DE-1)

B. Residence of decedent:
1. same as place of occurrence
2. other

C. Hospitalization:
1. hospital
2. other institution
3. private home
4. other

D. Certification:
1. medical
2. other
3. not stated

Use of tabulations:

This information is needed for studying the geographic distribution of death. The comparison of deaths by place of occurrence and place of residence is of interest, for example, to administrative medicine (as in planning for medical facilities) and in epidemiology. The tabulation by place of occurrence, residence of decedent, hospitalization, and certification can provide an indicator of the relative use of medical care facilities in different geographic subdivisions, and the geographic pattern in the quality of cause-of-death certification. It also provides a means of measuring the proportion of non-resident deaths occurring in an area.

Illustration DE-1. DEATHS BY PLACE OF OCCURRENCE*

/As in illustration LB-1/

Optional extension

Illustration DE-1a. Deaths by place of occurrence* classified by resident* status of decedent and cross-classified by hospitalization and by type of certification*

Place of occurrence and hospitalization	Total	Resident status of decedent							
		Same as place of occurrence				Other			
		Total	Type of certification			Total	Type of certification		
			Medical	Other	Not stated		Medical	Other	Not stated
/as in illustration LB-2a/									

DE-2 DEATHS BY PLACE OF USUAL RESIDENCE* OF DECEDENT

Classification

A. Place of usual residence: 1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

Optional extensions

DE-2a Deaths cross-classified by place of residence* of decedent and by place of occurrence*

Classification

A. Place of usual residence: (see DE-2)

B. Place of occurrence: (see DE-1)

DE-2b Deaths cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of decedent

Classification

A. Place of usual residence: (see DE-2)

B. Place of previous residence (at a specified time in the past): (see paras. 116-119)

Use of tabulations:

A reference tabulation for comparison with DE-1 and for computation of resident death rates. Such local tabulations are of value for administrative purposes and for study of geographic differentials in mortality. As with births, information on place of previous residence at a specified time in the past would provide data useful for the study of migratory movement between civil divisions and of the characteristics of migrants. Such information can also be useful in certain epidemiological studies.

Illustration DE-2. DEATHS BY PLACE OF USUAL RESIDENCE* OF DECEDENT

/As in illustration LB-1 with "Place of usual residence" substituted for "Place of occurrence"/

Optional extensions

Illustration DE-2a Deaths cross-classified by place of usual residence* of decedent and by place of occurrence*

/As in illustration LB-1a with "Place of usual residence of decedent" substituted for "Place of usual residence of mother"/

Illustration DE-2b Deaths cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of decedent

/As in illustration LB-1a with "Place of previous residence (at a specified time in the past)" substituted for "Place of occurrence" and "Place of usual residence of decedent", for "Place of usual residence of mother"/

DE-3 DEATHS BY MONTH OF OCCURRENCE*

Classification

A. Month of occurrence:
1. January
2. February
3. March
4. April
.
.
.
.
12. December

Use of tabulations:

To study seasonal incidence of death; also to de-seasonalize mortality data with the view to using seasonally adjusted data in forecasting, in measuring progress, and in identifying significant deviations from "normal" seasonal patterns.

Illustration DE-3 DEATHS BY MONTHS OF OCCURRENCE*

/As in illustration LB-3/

DE-4 DEATHS BY SEX* AND AGE*

Classification

A. Sex:
1. male
2. female
3. not stated

B. Age:
1. under 1 year
2. single year to 4 years
3. 5-year groups from 5 to 84 years
4. 85 years and over
5. not stated

B'. Age:
1. under 1 year
2. 1-4 years
3. 10-year groups from 5 to 74 years
4. 75 years and over
5. not stated

B''. Age:
1. under 1 year
2. 1-14 years
3. 15-44 years
4. 45-64 years
5. 65 years and over
6. not stated

Optional extensions

DE-4a Deaths cross-classified by age* and marital status* for each sex*

Classification

A. Age:
1. under 15 years
2. 15-19 years
3. 20-24 years
4. 25-34 years
5. 35-44 years
.
.
.
10. 85 and over
11. not stated

B. Marital status:
1. single, never married
2. married
3. widowed, not remarried
4. divorced, not remarried
5. separated (legally)

C. Sex:
1. male
2. female

DE-4b Deaths of married* persons cross-classified by age* of decedent and age of surviving spouse, for each sex*

Classification

A. Age: (see DE-4a)

B. Sex:
1. male
2. female

DE-4c Deaths of married* persons cross-classified by age* and by duration of current marriage, for each sex*

Classification

A. Age: (see DE-4a)

B. Duration of marriage: (see LB-8)

C. Sex:
1. male
2. female

DE-4d Deaths cross-classified by age* and type of activity of decedent

Classification

A. Age:
1. under 15 years
2. 15-19 years
3. 20-24 years
4. 25-34 years
5. 35-44 years
6. 45-54 years
7. 55-64 years
8. 65 and over
9. not stated

B. Type of activity:
1. economically active
   a. employed
   b. unemployed
      i. total
      ii. seeking work for first time
2. not economically active
3. not stated

DE-4e Deaths cross-classified by age* and occupation, for each sex*

Classification

A. Age: (see DE-4d)

B. Occupation: (see paras. 205-206)

C. Sex:
1. male
2. female

DE-4f Deaths cross-classified by age* and ethnic and/or nationality group of decedent

Classification

A. Age:
1. under 5 years
2. 5-14 years
3. 15-24 years
.
.
.
.
8. 65 years and over
9. not stated

B. Ethnic and/or nationality groups: (see paras. 185-186)

DE-4g Deaths cross-classified by age* and by literacy status (or educational attainment) for each sex*

Classification

A. Age: (see DE-4d)

B. Literacy status:
1. literate
2. illiterate

C. Educational attainment: (see paras. 179-180)

D. Sex:
1. female
2. male

DE-4h Female deaths cross-classified by age* and number of live-born issue

Classification

A. Age:
1. under 15 years
2. 15-19 years
3. 20-24 years
.
.
.
9. 50 years and over
10. not stated

B. Number of live-born issue:

1. zero
2. one
3. two
.
.
.
10. nine
11. 10 and over
12. not stated

Use of tabulations:

Information on age of decedent is essential for analytical purposes. Either alone or cross-classified by other characteristics, such as marital status, occupation, and number of live-born issue (in the case of females), age is basic to the entire public health programme. It is also necessary to the construction of life tables and net reproduction rates. And it is useful (in conjunction with the other components of change) for demographic forecasting by the component method. Some of the related "optional" expansions extend the earlier mentioned possibilities to items like labour force and occupation-specific life tables, for example.

Illustration DE-4 DEATHS CROSS-CLASSIFIED BY AGE* AND SEX*

Age (in years)	Both sexes	Male	Female	Not stated
All ages				
Under 1				
1				
2				
3				
4				
5-9				
10-14				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54				
55-59				
60-64				
65-69				
70-74				
75-79				
80-84				
85 and over				
Not stated				

Optional extensions

Illustration DE-4a. Deaths cross-classified by age* and marital status* for each sex

Sex and Marital status	All ages	Age (in years) Under 15	15-19	20-24	25-34	35-44	. . .	85 and over	Not stated
Male									
Total									
Single									
Married									
Widowed									
Divorced									
Separated . . .									
Female									
(as for Male)									

Illustration DE-4b. Deaths of married* persons cross-classified by age* of decedent and age of surviving spouse, for each sex*

Age (in years) of surviving spouse	All ages	Age (in years) Under 15	15-19	20-24	25-34	35-44	. . .	85 and over	Not stated
		Male decedent							
Female									
All ages									
Under 15									
15-19									
20-24									
25-34									
35-44									
.									
.									
.									
85 and over . .									
Not stated . . .									
		Female decedent							
Male									
(as for Female)									

Illustration DE-4c. Deaths of married* persons cross-classified by age* and by duration of current marriage, for each sex*

Sex and duration of current marriage	All ages	Age (in years)					. . .	65 and over	Not stated
		Under 15	15-19	20-24	25-34	35-44			
Male									
/classification of "duration of marriage" as in illustration LB-8/									
Female									
(as for Male)									

Illustration DE-4d. Deaths cross-classified by age* and type of activity of decedent

Sex and type of activity	All ages	Age (in years)					. . .	65 and over	Not stated
		Under 15	15-19	20-24	25-34	35-44			
Male									
/classification of "type of activity" as in illustration LB-6b/									
Female									
(as for Male)									

Illustration DE-4e. Deaths cross-classified by age* and occupation for each sex*

Sex and occupation	All ages	Age (in years)					. . .	65 and over	Not stated
		Under 15	15-19	20-24	25-34	35-44			
Male									
/classification of "occupation" as in illustration LB-6a/									
Female									
(as for Male)									

Illustration DE-4f. Deaths cross-classified by age* and ethnic and/or nationality group of decedent

Sex and ethnic and/or nationality group	All ages	Age (in years)								
		Under 5	6-14	15-24	25-34	35-44	45-54	55-64	65 and over	Not stated
Male										
/classification of "ethnic and nationality group" as in illustration LB-5f/										
Female										
(as for Male)										

Illustration DE-4g. Deaths cross-classified by age* and by literacy status (or educational attainment) for each sex*

Sex and literacy status (or educational attainment)	All ages	Age (in years)								
		Under 15	15-19	20-24	25-34	35-44	45-54	55-64	65 and over	Not stated
Male										
/classification of "literacy status or educational attainments" as in illustration LB-5e/										
Female										
(as for Male)										

Illustration DE-4h. Female deaths cross-classified by age* and number of live-born issue

Number of live-born issue	Total	Age (in years)			. . . . .		
		Under 15	15-19	20-24		50 and over	Not stated
Total							
0							
1							
2							
. . . . .							
. . . . .							
. . . . .							
9							
10 and over							
Not stated							

DE-5. DEATHS CROSS-CLASSIFIED BY MONTH OF OCCURRENCE* AND SELECTED CAUSES* OF DEATH

Classification

A. Month of occurrence:
1. January
2. February
3. March
4. April
.
.
.
12. December

B. Causes of death: selected underlying causes (see para. 218)

Use of tabulations:

Permits study of the seasonal pattern of major causes of death useful in medical and epidemiological research and also in planning for public health facilities.

Illustration DE-5. DEATHS CROSS-CLASSIFIED BY MONTH OF OCCURRENCE* AND SELECTED CAUSES* OF DEATH

8th Revision Number	Cause of death	Total	Months											
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	(selected causes of death)													

Note: Classification of cause of death should be according to the Eighth (1965) Revision of the International Classification of Diseases.

DE-6 DEATHS CROSS-CLASSIFIED BY AGE* AND BY CAUSE* FOR EACH SEX*

Classification

A. Age: (see DE-4)

B. Cause of death: (see para. 218)

Optional extensions

DE-6a Deaths cross-classified by age,* by occupation and by cause* of death, for each sex*

A. Age: (see DE-4d)

B. Occupation: (see paras. 205-206)

C. Cause of death: (see DE-6)

D. Sex: 1. male
2. female

Use of tabulations:

Cause of death is one of the most important items on the statistical report on mortality. The dependence of public health authorities on vital statistics stems largely from their reliance - in the absence of reliable and comprehensive morbidity data - on cause-of-death statistics as indicators of the health of the population and as guides for public health policies. Cause-of-death statistics are also necessary in formulation of insurance (private and social programmes, pension plans, etc.). The opticnal extensions of this tabulation make it possible to broaden the analysis to include problems specific to occupations and to the development of social and welfare policies to protect workers in given occupations against health hazards.

Illustration DE-6 DEATHS CROSS-CLASSIFIED BY AGE* AND BY CAUSE* OF DEATH FOR EACH SEX

List B number	Sex and cause of death (detailed list numbers are shown in parentheses)	All ages	Age (in years)																
			Under 1	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	.....	75-79	80-84	85 and over	Not stated
	Male																		
	All causes.....																		
B 1	Cholera (000)...																		
B 2	Typhoid fever (001).....																		
.	.																		
.	.																		
.	.																		
BE50	All other external causes (E 960-E-999)																		
	Female																		
	(as for Male)																		

Note: Classification of cause of death should be according to the Eighth (1965) Revision of the International Classification of Diseases, at least to the "List of 50 Causes for Tabulation of Mortality (List B)".

Illustration DE-6a. DEATH CROSS-CLASSIFIED BY AGE,* BY OCCUPATION AND BY CAUSE* OF DEATH, FOR EACH SEX*

List B number	Occupation, sex and cause of death	All ages	Age (in years)								
			Under 15	15-19	20-24	25-34	35-44	45-54	55-64	65 and over	Not stated
	All occupational groups										
	Male.....										
	[classification of cause of death as in illustration DE-6]										
	Female.....										
	[classification of cause of death as in illustration DE-6]										
	Major group 0/1										
	(as for All occupational groups)										
	[each minor (two digit) group for which separate information is required]										
	.										
	.										
	.										
	Major group X										
	(as for All occupational groups)										
	[each minor (two digit) group for which separate information is required]										
	Armed forces										
	(as for All occupational groups)										

Note: Classification of occupation should be according to, or convertible to, International Labour Organisation, International Standard Classification of Occupations (ISCO 1966).

DE-7 DEATHS CROSS-CLASSIFIED BY TYPE OF CERTIFICATION* AND CAUSE* OF DEATH

Classification

A. Type of certification: 1. medical
2. other
3. not stated

B. Cause of death: (see DE-6)

Use of tabulation:

Primarily to assist in the interpretation and evaluation of the preceding information on mortality.

Illustration DE-7. DEATHS CROSS-CLASSIFIED BY TYPE OF CERTIFICATION* AND CAUSE* OF DEATH

List B number	Cause of death (Detailed list numbers are shown in parenthesis)	Type of certification			
		Total	Medical	Other	Not stated
	Total.....	Note: Classification of causes of death should be according to the Eighth (1965) Revision of the International Classification of Diseases, at least to the "List of 50 Causes for Tabulation of Mortality (List B)".			
B-1	Cholera (001).....				
.	.				
.	.				
.	.				
B-50	All other external causes (E960-E999).....				

INFANT DEATHS

ID-1 INFANT DEATHS (UNDER ONE YEAR OF AGE) BY PLACE OF OCCURRENCE*

Classification

A. Place of occurrence: 1. major civil division) a. urban/rural
2. minor civil division)
3. principal city or town

Use of tabulation:

Like DE-1, this tabulation is needed for studying the geographic distribution of infant deaths. For example, comparison of infant deaths by place of occurrence and place of residence of mother is of interest in administrative medicine (in planning for medical facilities).

Illustration ID-1. INFANT DEATHS (UNDER ONE YEAR OF AGE) BY PLACE OF OCCURRENCE*

/as in illustration LB-1/

ID-2 INFANT DEATHS (UNDER ONE YEAR OF AGE) BY PLACE OF RESIDENCE* OF MOTHER

Classification

A. Place of residence of mother: 1. major civil division) a. urban/rural
2. minor civil division)
3. principal city or town

Use of tabulation:

This is the basic tabulation for computing infant mortality rates. It is useful as a general indicator of the quality and extent of available child health services and as a measure of the sanitary conditions existing in an area or country. It is also needed for certain medical and public health research, and as an indicator measuring progress in reducing infant mortality.

Illustration ID-2. INFANT DEATHS (UNDER ONE YEAR OF AGE) BY PLACE OF RESIDENCE* OF MOTHER

/as in illustration LB-1 with "Place of residence of mother" substituted for "Place of occurrence"/

ID-3 INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE* AND BY SEX*

Classification

A. Age:
1. Under 1 day
2. 1 day
3. 2 days
4. 3 days
5. 4 days
6. 5 days
7. 6 days
8. 7-13 days
9. 14-20 days
10. 21-27 days
11. 28 days to under 2 mos.
12. 2 months
.
.
.
21. 11 months
22. not stated

A':
1. under 1 day
2. 1-6 days
3. 7-27 days
4. 28-under 3 months
5. 3-5 months
6. 6 months-under 1 year
7. not stated

A'':
1. under 7 days
2. 7-27 days
3. 28 days-under 1 year
4. not stated

Optional extensions

ID-3a Infant deaths (under one year of age) cross-classified by age* and legitimacy status, for each sex*

Classification

A. Age: (see ID-3)

B. Legitimacy status:
1. legitimate
2. illegitimate
3. not stated

C. Sex:
1. male
2. female

ID-3b Infant deaths (under one year of age) cross-classified by age*, and by year of birth*, for each sex*

Classification

A. Age: (see ID-3)

B. Year of birth: Applicable calendar year

C. Sex:
1. male
2. female

Use of tabulations:

These classifications are in accordance with the World Health Organization's recommendations for special statistics for infant mortality. They are of

particular interest in the study of neo-natal mortality, which is of great importance within the context of the analysis of perinatal mortality. The optional extensions ID-3a and ID-3b are provided as a source of information to measure the incidence of infant mortality by age, sex, and legitimacy status, all of which are of considerable usefulness to the work of public health and welfare agencies. The proposed extension of the tabulation on age and sex to year of birth of infant would permit calculation of a more refined infant mortality rate, relating infant deaths to the corresponding group of live births (to, that is, the actual population-at-risk). For periods including a population census, such tabulations would also yield information necessary for the calculation of life tables.

Illustration ID-3. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE* AND BY SEX*

Age (in days and months)	Both sexes	Male	Female
Total			
Under 1 day			
2 days			
3 days			
4 days			
5 days			
6 days			
7-13 days			
14-20 days			
21-27 days			
28 days-1 month			
2 months			
.			
.			
11 months			
Not stated			

Illustration ID-3a. Infant deaths (under one year of age) cross-classified by age* and legitimacy status, for each sex*

Age (in days and months)	Legitimacy status and sex								
	Legitimate			Illegitimate			Not stated		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
/As in illustration ID-3/									

Illustration ID-3b. Infant deaths (under one year of age) cross-classified by age*, and by year of birth*, for each sex*

Age (in days and months)	Sex and year of birth					
	Both sexes		Male		Female	
	19__	19__	19__	19__	19__	19__
/As in illustration ID-3/						

ID-4 INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE* AND BY MONTH OF OCCURRENCE*

Classification

A. Age:
1. under 28 days
2. 28 days to under 1 year
3. not stated

B. Month of occurrence:
1. January
2. February
.
.
.
12. December

Use of tabulations:

These data are used for studying seasonal patterns of neo-natal and infant mortality rates, and also for "de-seasonalizing" data in order to provide earlier and more reliable signals of change in the data that were not seasonally adjusted. Such data can also reveal anomalies in the incidence of infant death.

Illustration ID-4. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE* AND BY MONTH OF OCCURRENCE*

Age	Total	Month of occurrence			
		Jan.	Feb.	.....	Dec.
Total					
Under 28 days					
28 days-under 1 year					
Not stated					

ID-5 INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY CAUSE* OF DEATH AND BY SEX*

Classification

A. Cause of death: selected underlying causes (see para. 218)

B. Sex: 1. male
2. female

Optional extensions

ID-5a Infant deaths (under one year of age) cross-classified by selected causes* of death and by age*, for each sex*

Classification

A. Cause of death: selected underlying causes (see para. 218)

B. Age: (see ID-3)

C. Sex: 1. male
2. female

ID-5b Infant deaths (under 28 days of age) cross-classified by selected cause* of death and by age*, for each sex*

Classification

A. Cause of death: selected underlying causes (see para. 218)

B. Age:
1. under 1 day
2. 1 day
3. 2 days
4. 3 days
.
.
7. 6 days
8. 7-13 days
9. 14-20 days
10. 21-27 days
11. not stated

C. Sex:
1. male
2. female

Use of tabulations:

Useful for the identification of medical and epidemiological factors contributing to infant mortality; essential in medical research and for social and public health policy. The extension of the tabulation to include age would provide a basis for a more thorough study of infant mortality.

Illustration ID-5. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY SELECTED CAUSES* OF DEATH AND BY SEX*

International list number	Cause of death	Both sexes	Male	Female
	All causes.....			
	/selected causes of death/	Note: Classification of cause of death should be according to the Eighth (1965) Revision of International Classification of Diseases.		

Illustration ID-5a. Infant deaths (under one year of age) cross-classified by selected causes* of death and by age*, for each sex*

International list number	Sex and cause of death	All ages	Age						
			Under 1 day	1-6 days	7-27 days	28 days - 2 mos.	3-5 months	6-11 months	Not stated
	Male								
	All causes....		Note: Classification of cause of death should be according to the Eighth (1965) Revision of the International Classification of Diseases.						
	/selected causes of death/								
	Female								
	(as for male)								

Illustration ID-5b. Infant deaths (under 28 days of age) cross-classified by selected cause* of death and by age*, for each sex*

International list number	Sex and cause of death	All ages	Age (in days)							
			Under 1	1	....	6	7-13	14-20	21-27	Not stated
	Male									
	All causes....		Note: Classification of cause of death should be according to the Eighth (1965) Revision of the International Classification of Diseases.							
	/selected causes of death/									
	Female									
	(as for male)									

FOETAL DEATHS

FD-1 FOETAL DEATHS BY PLACE OF OCCURRENCE*

Classification

A. Place of occurrence: 1. major civil division) a. urban/rural
2. minor civil division)
3. principal city or town

Optional extension

FD-1a Foetal deaths by place of occurrence* classified by resident status of woman* cross-classified by hospitalization and by type of certification

Classification

A. Place of occurrence: 1. major civil division) a. urban/rural
2. minor civil division)
3. principal city or town

B. Residence of woman: 1. same as place of occurrence
2. other

C. Hospitalization 1. hospital
2. other institution
3. private home
4. other

D. Type of certification 1. medical
2. other

Use of tabulations:

The use of this tabulation is similar to that of DE-1.

Illustration FD-1. FOETAL DEATHS BY PLACE OF OCCURRENCE*

/as in illustration LB-1/

Optional extension

Illustration FD-1a. Foetal deaths by place of occurrence* classified by resident status of women* cross-classified by hospitalization and by type of certification

/as in illustration DE-1a with "Resident status of woman" substituted for "Resident status of decedent"/

FD-2 FOETAL DEATHS BY SEX* AND BY GESTATIONAL AGE*

Classification

A. Sex:
1. male
2. female

B. Gestational age:
1. under 20 weeks
2. 20-27 weeks
3. 28-31 weeks
4. 32-35 weeks
5. 36 weeks
6. 37-39 weeks
7. 40 weeks and over
8. not stated

Optional extension

FD-2a Foetal deaths cross-classified by gestational age* and by cause of death, for each sex*

Classification

A. Gestational age: (see FD-2)

B. Cause of death: List of 100 Causes for Tabulation of Perinatal Morbidity and Mortality (List P) (see para. 218)

C. Sex:
1. male
2. female

FD-2b Foetal deaths cross-classified by gestational age* and by occupation of woman

Classification

A. Gestational age: (see FD-2)

B. Occupation of woman: (see paras. 205-206)

FD-2c Foetal deaths cross-classified by gestational age* and by birth-weight

Classification

A. Gestational age: (see FD-2)

B. Birth-weight: expressed in grammes so as to make possible classification in 500-gramme intervals

Use of tabulations:

For medical research in the distribution of foetal death by gestational age; also in the study of pregnancy wastage. Detailed analysis of foetal deaths by gestational age in relation to additional variables such as cause of foetal death, birth-weight, occupation of woman, etc. would help to improve the understanding of the problems of pregnancy wastage and related questions, and would be useful in the study of low birth weight in infants.

Illustration FD-2. FOETAL DEATHS BY SEX* AND BY GESTATIONAL AGE*

Sex	Total	Gestational age (in weeks)							
		Under 20	20-27	28-31	32-35	36	37-39	40 and over	Not stated
Both sexes									
Male									
Female									

Optional extensions

Illustration FD-2a. Foetal deaths cross-classified by gestational age* and by cause of death, for each sex*

List P number	Sex and cause of death (detailed list numbers are shown in parentheses)	Total	Gestational age (in weeks)							
			Under 20	20-27	28-30	32-35	36	37-39	40 and over	Not stated
	Male									
P 1	All causes		Note: Classification of cause of death should be according to the Eighth (1965) Revision of the International Classification of Diseases, "List of 100 Causes for Tabulation of Perinatal Morbidity and Mortality (List P)".							
.	Chronic rheumatic heart disease (760.0). . .									
.	.									
	.									
	.									
P 100	Other external causes (remainder of E800-E999).									
	Female (as for Male)									

Illustration FD-2b. Foetal deaths cross-classified by gestational age* and by occupation of woman

Occupation of woman	Total	Gestational age (in weeks)							
		Under 20	20-27	28-31	32-35	36	37-39	40 and over	Not stated
Total . . . . . (occupational classification as in illustration LB-6a)									

Illustration FD-2c. Foetal deaths cross-classified by gestational age* and by birth-weight

Birth-weight	Total	Gestational age (in weeks)							
		Under 20	20-27	28-31	32-35	36	37-39	40 and over	Not stated
Total									
Under 501 grammes .									
501-1,000 grammes .									
1,001-1,501 grammes									
.									
.									
.									
4,500-5,001 grammes									
5,001 grammes or more									
Not stated.									

FD-3 LATE FOETAL DEATHS CROSS-CLASSIFIED BY SEX* AND LEGITIMACY STATUS* OF FOETUS

Classification

A. Sex:
1. male
2. female

B. Legitimacy status:
1. legitimate
2. illegitimate
3. not stated

Use of tabulations:

This information is useful in the study of foetal mortality and its changes over time, and also in the analysis of the possible significance for the incidence of foetal death of socio-economic and psychological factors related to illegitimacy. This problem is of concern, among others, to health and welfare authorities.

Illustration FD-3. FOETAL DEATHS CROSS-CLASSIFIED BY SEX* AND LEGITIMACY STATUS* OF FOETUS

/as in illustration LB-47

FD-4 LATE FOETAL DEATHS CROSS-CLASSIFIED BY AGE* OF WOMAN AND LEGITIMACY STATUS* OF CHILD, FOR EACH SEX

Classification

A. Age of woman: (see LB-5)

B. Legitimacy status: (see FD-3)

C. Sex: 1. male
2. female

FD-4a Late foetal deaths cross-classified by age* and ethnic and/or nationality group of woman

Classification

A. Age of woman: (see LB-5)

B. Ethnic and/or nationality group: (see paras. 185-186)

FD-4b Late foetal deaths cross-classified by age* and by place of birth of woman, for each legitimacy status* of foetus

Classification

A. Age of woman: (see LB-5)

B. Place of birth: (see LB-5g)

C. Legitimacy status: (see FD-3)

FD-4c Legitimate* late foetal deaths cross-classified by age* of woman and duration of marriage*

Classification

A. Age of woman: (see LB-5)

B. Duration of marriage: (see LB-8)

Use of tabulations:

The inclusion of age of woman in FD-4b increases the research potential indicated in FD-3 above, in addition to making it possible to analyse the effect of age of woman on the risk of delivery of a dead foetus.

Illustration FD-4. LATE FOETAL DEATHS CROSS-CLASSIFIED BY AGE* OF WOMAN AND LEGITIMACY STATUS* OF FOETUS, FOR EACH SEX

Legitimacy status and sex	Total	Age of woman (in years)					
		Under 15	15-19	20-24	.....	50 and over	Not stated
Legitimate							
Both sexes							
Male							
Female							
Illegitimate							
(as for Legitimate)							
Not stated							
(as for Legitimate)							

Optional extensions

Illustration FD-4a. Late foetal deaths cross-classified by age* and ethnic and/or nationality group of woman

/ās in illustration LB-5e with "woman" substituted for "mother"/

Illustration FD-4b. Late foetal deaths cross-classified by age* and by place of birth of woman, for each legitimacy status* of foetus

/ās in illustration LB-5h with "woman" substituted for "mother"/

Illustration FD-4c. Legitimate* late foetal deaths cross-classified by age* of woman and duration of marriage*

/ās in illustration LB-8b with "woman" substituted for "mother"/

FD-5 LATE FOETAL DEATHS CROSS-CLASSIFIED BY AGE* OF WOMAN AND BY TOTAL BIRTH ORDER*

Classification

A. Age of woman: (see LB-5)

B. Birth order: (see LB-7)

Use of tabulations:

This is useful in medical research into women's histories of foetal death, particularly as to the possibility of a "proneness" to foetal death.

Illustration FD-5. LATE FOETAL DEATHS CROSS-CLASSIFIED BY AGE* OF WOMAN AND BY TOTAL BIRTH ORDER

/as in illustration LB-7a with "woman" substituted for "mother"/

LIVE BIRTHS AND FOETAL DEATHS

LB and FD-1 CONFINEMENTS CROSS-CLASSIFIED BY TYPE OF BIRTH* AND STATUS OF ISSUE (LIVE BORN OR BORN DEAD)

Classification

A. Type of birth:
1. single
2. multiple:
   a. twin
   b. triplet
   c. quadruplet
   etc.

B. Status of issue:
1. single
   a. live birth
   b. foetal death
2. twin
   a. 2 live births
   b. 1 live birth and 1 foetal death
   c. 2 foetal deaths
3. triplet
   a. 3 live births
   b. 2 live births and 1 foetal death
   c. 1 live birth and 2 foetal deaths
   d. 3 foetal deaths

Optional extensions

LB and FD-1a Confinements cross-classified by birth order* and by birth-weight for each type of birth*

Classification

A. Birth order: (see LB-7)

B. Birth-weight: (see LB-2b)

C. Type of birth: (see LB and FD-1)

LB and FD-1b Confinements cross-classified by type of birth* and by age* of mother/woman for each sex*

Classification

A. Type of birth: (see LB and FD-1)

B. Age of mother/woman: (see LB-5)

C. Sex: 1. male
2. female

Use of tabulations:

The statistical use of information on type of birth is almost completely restricted to public health and medical objectives, and to genetics. Type-of-birth data are of importance in studying the relative incidence of live births and foetal deaths among plural issue. Analyses based on this item, together with birth order, birth-weight, age of mother/woman, etc., may reveal factors related to foetal death of one or more of the members and thus enable consideration to be given to eliminating, or at least minimizing the effect of these factors.

Illustration LB and FD-1. CONFINEMENTS CROSS-CLASSIFIED BY TYPE OF BIRTH* AND STATUS OF ISSUE (LIVE BORN OR BORN DEAD)

Total issue	Type of birth and status of issue								
	Single		Set of twins			Set of triplets			
	1 live-born	1 still-born	2 live-born	1 live-born 1 still-born	2 still-born	3 live-born	2 live-born 1 still-born	2 still-born 1 live-born	3 still-born

Illustration LB and FD-1a. Confinements cross-classified by birth order* and by birth-weight for each type of birth*

Type of birth and birth order	Total	Birth weight			.....		
		Under 501 grammes	501-1,000 grammes	1,001-1,500 grammes		5,001 grammes or more	Not stated
Single births							
Total							
First							
Second							
.							
.							
.							
Ninth							
Tenth and over. .							
Multiple births							
(as for Single births)							

Illustration LB and FD-1b. Confinements cross-classified by type of birth* and by age* of mother/woman for each sex*

Type of birth and sex	Total	Age of mother/woman (in years)			.....		
		Under 15	15-19	20-24		50 and over	Not stated
Single births							
Both sexes							
Male							
Female							
Multiple births							
(as for Single births)							

MA-1 MARRIAGES BY MONTH OF OCCURRENCE*

Classification

A. Month of occurrence: 1. January
2. February
.
.
.
12. December

Use of tabulation:

To establish seasonal patterns in family formation which is of interest in certain socio-cultural studies, and also for the analysis and projection of consumption patterns, as in marketing research.

Illustration MA-1. MARRIAGES BY MONTH OF OCCURRENCE*

/as in illustration LB-3/

MA-2 MARRIAGES BY PLACE OF USUAL RESIDENCE* OF GROOM

Classification

A. Place of usual residence: 1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

Optional extensions

MA-2a Marriages, cross-classification by place of usual residence* of groom and by place of occurrence*

Classification

A. Place of usual residence: (see MA-2)

B. Place of occurrence: 1. major civil division)
2. minor civil division) a.a. urban/rural
3. principal city of town

MA-2b Marriages cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of groom

Classification

A. Place of usual residence: (see MA-2)

B. Place of previous residence
(at a specified time in the past): (see paras. 116-119)

Use of tabulations:

As for MA-1, and also to study geographic differentials in patterns of family formation. The place of previous residence (at a specified time in the past) is a useful item of information in the analysis of migration.

Illustration MA-2. MARRIAGES BY PLACE OF USUAL RESIDENCE* OF GROOM

/ās in illustration LB-1 with "Place of usual residence of groom" substituted for "Place of occurrence"/

Optional extensions

Illustration MA-2a. Marriages, cross-classified by place of usual residence* of groom and by place of occurrence*

/ās in illustration LB-1a with "Place of usual residence of groom" substituted for "Place of usual residence of mother"/

Illustration MA-2b. Marriages, cross-classified by place of usual residence* and place of previous residence (at a specified time in the past) of groom

/ās in illustration Lb-1a with "Place of usual residence of groom" substituted for "Place of occurrence" and "Place of previous residence (at a specified time in the past" for "Place of usual residence of mother"/

MA-3 MARRIAGES CROSS-CLASSIFIED BY AGE* OF BRIDE AND BY AGE* OF GROOM

Classification

A. Age:

1. under 15 years
2. 15-19 years
3. 20-24 years
.
.
.
12. 65-69 years
13. 70-74 years
14. 75 years and over
15. not stated

Optional extension

MA-3a Marriages cross-classified by ethnic and/or national group and age* of bride and groom separately

A. Age: (see MA-3)

B. Ethnic and/or nationality groups: (see paras. 185-186)

Use of tabulations:

The age at which persons marry has a bearing on future fertility patterns and, through that, on the eventual population structure of a country. Information on age at marriage is also relevant to the study of age-specific patterns of family formation, a matter of practical importance to planning activities relating to such matters as consumption patterns and school facilities and teaching personnel.

Illustration MA-3. MARRIAGES CROSS-CLASSIFIED BY AGE* OF BRIDE AND BY AGE* OF GROOM

Age of groom (in years)	All ages	Age of bride (in years)			.....				
		Under 15	15-19	20-24		65-69	70-74	75 and over	Not stated
All ages . . .									
Under 15 . .									
15-19 . . .									
20-24 . . .									
.									
.									
.									
60-64 . . .									
65-69 . . .									
70-74 . . .									
75 and over									
Not stated .									

Optional extension

Illustration MA-3a. Marriages cross-classified by ethnic and/or nationality group and age* of bride and groom separately

Ethnic and/or nationality group	All ages	Age (in years) Under 15	15-19	20-24	...	65-69	70-74	75 and over	Not stated
	BRIDE								
Total									
/each national and/ or ethnic group for which separate information is required/									
All others									
Not stated									
	GROOM								
Total									
/each national and/ or ethnic group for which separate information is required/									
All others									
Not stated									

MA-4 MARRIAGES CROSS-CLASSIFIED BY PREVIOUS MARITAL STATUS* OF BRIDE AND BY PREVIOUS MARITAL STATUS* OF GROOM

Classification

A. Previous marital status:
1. single
2. widowed
3. divorced
4. other
5. not stated

Optional extension

MA-4a Marriages cross-classified by previous marital status* and by age* of bride and groom separately

Classification

A. Previous marital status: (see MA-4)

B. Age: (see MA-3)

MA-4b Marriages cross-classified by number of previous marriages of bride and by number of previous marriages of groom

Classification

A. Number of previous marriages:
1. zero
2. one
3. two
4. three
5. four and over

Use of tabulations:

Previous marital status of the bride and groom is an essential item of information for the analysis of nuptiality patterns. It is useful in demographic and social studies of family patterns, and also as an indicator of family stability. The introduction of "age" into the "previous-marital-status" tabulation increases the significance of this item considerably - for the analysis of marriage patterns, and also for the analysis of fertility.

Illustration MA-4. MARRIAGES CROSS-CLASSIFIED BY PREVIOUS MARITAL STATUS* OF BRIDE AND BY PREVIOUS MARITAL STATUS* OF GROOM

Previous marital status of bride	Total marriages	Previous marital status of groom				
		Single	Widowed	Divorced	Other	Not stated
All marriages						
Single						
Widowed						
Divorced						
Other						
Not stated						

Optional extensions

Illustration MA-4a. Marriages cross-classified by previous marital status* and by age* of bride and groom separately

Age (in years)	Total marriages	Previous marital status				
		Single	Widowed	Divorced	Other	Not stated
	BRIDE					
All ages						
Under 15						
15-19						
20-24						
.						
.						
.						
65-69						
70-74						
75 and over						
Not stated						
	GROOM					
All ages . . . . . (as for BRIDE)						

Illustration MA-4b. Marriages cross-classified by number of previous marriages of bride and by number of previous marriages of groom

Number of previous marriages of groom	Total	Number of previous marriages of bride				
		0	1	2	3	4 or more
Total						
0						
1						
2						
3						
4 or more						

MA-5 MARRIAGES CROSS-CLASSIFIED BY LITERACY STATUS (OR EDUCATIONAL ATTAINMENT) OF BRIDE AND GROOM

Classification

A. Literacy status:
1. literate
2. illiterate
3. not stated

B. Educational attainment: (see paras. 179-180)

Use of tabulations:

Information on literacy or educational attainment of brides and grooms would provide data on cultural differences in marriage rates that could be of use to sociological analysis, and also to the study of family planning problems.

Illustration MA-5. MARRIAGES CROSS-CLASSIFIED BY LITERACY STATUS (OR EDUCATIONAL ATTAINMENT) OF BRIDE AND GROOM

Literacy status of groom	Total	Literacy status of bride		
		Literate	Illiterate	Not stated
Total				
Literate				
Illiterate				
Not stated				

(or)

Educational attainment of groom	All levels of education	Educational attainment of bride		.....		
		First level started but not completed	First level completed		Special education (not classified level)	Level not stated
All levels of education						
First level started but not completed						
First level completed						
Second level started but not completed						
Second level completed						
Third level started but not completed						
Third level completed						
Special education (not classified by level)						
Level not stated						

MA-6 MARRIAGES BY OCCUPATION OF GROOM

Classification

A. Occupation of groom: (see paras. 205-206)

Use of tabulations:

Like literacy or educational attainment, occupation can be used as an indicator of socio-economic level. As such, and particularly in combination with age, this information is of interest in the study of differential patterns of family formation.

Illustration MA-6. MARRIAGES BY OCCUPATION* OF GROOM

Occupation of groom	Number
Total	Note: Classification of occupation should be according to, or convertible to, International Labour Organisation International Standard Classification of Occupations (ISCO, 1966), at least to the minor (two-digit) groups.
Major group 0/1	
Minor group 0-1	
Minor group 0-2/0-3 . . . . . (etc.)	
Major group 2	
Minor group 2-0	
Minor group 2-1	
.	
.	
.	
Major group X	
Minor group X-1	
Minor group X-2	
Minor group X-3	
Armed forces	

MA-7 MARRIAGES BY TYPE OF MARRIAGE*

Classification

A. Type of marriage:
1. civil
2. religious
3. customary

Use of tabulations:

The categorization here is an attempt to present a complete picture of the several kinds of "unions" either recognized by a country's laws or made available through its customs. The direct use of such information is primarily in sociological analysis, particularly with respect to family formation (and dissolution) and fertility. But to the extent that differentials in such areas of behaviour are associated with different types of marriage, there will also be implications in the frequencies of different types of marriage for the development of health and family planning programmes, and also for population structure and population forecasting.

Illustration MA-7. MARRIAGES BY TYPE OF MARRIAGE*

Type of marriage	Number
Total	
Civil	
Religious	
Customary	

DIVORCES

DI-1 DIVORCES BY PLACE OF OCCURRENCE*

Classification

A. Place of occurrence:
1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

Use of tabulations:

Place of occurrence of divorce is primarily of importance for reasons of administrative control. However, where different regions or jurisdictions of a country have different divorce laws or procedures (as is often the case in federations), information on divorce by place of occurrence will be necessary, also, to the analysis of "migratory divorce", i.e., of the extent to which persons in one jurisdiction obtain divorces in another, presumably because of a difference in relative availability of this procedure.

Illustration DI-1. DIVORCES BY PLACE OF OCCURRENCE*

/as in illustration LB-1/

DI-2 DIVORCES BY PLACE OF USUAL RESIDENCE* OF HUSBAND

Classification

A. Place of usual residence:
1. major civil division)
2. minor civil division) a. urban/rural
3. principal city or town

Optional extension

DI-2a Divorces cross-classified by place of usual residence* and by place of previous residence (at a specified time in the past) of husband

Classification

A. Place of usual residence: (see DI-2)

B. Place of previous residence (at a specified time in the past): (see paras. 116-119)

Use of tabulations:

This information is primarily of use in sociological analysis particularly where there are regional differences in culture and socio-economic status. However, as with data by place of occurrence, data on place of usual residence can be used, where applicable, in the study of "migratory divorce". They can also be used in the calculation of such basic measures for the analysis of nuptiality as nuptial survival rates among different marriage cohorts.

Illustration DI-2. DIVORCES BY PLACE OF USUAL RESIDENCE* OF HUSBAND

/as in illustration LB-1 with "Place of usual residence of husband" substituted for "Place of occurrence"/

Optional extension

Illustration DI-2a. Divorces cross-classified by place of usual residence* and by place of previous residence (at a specified time in the past) of husband

/as in illustration LB-1a with "Place of usual residence of husband" substituted for "Place of occurrence", and "Place of previous residence (at a specified time in the past) of husband" for "Place of usual residence of mother"/

DI-3 DIVORCES CROSS-CLASSIFIED BY AGE* OF WIFE AND AGE* OF HUSBAND

Classification

A. Age:

1. under 15 years
2. 15-19 years
3. 20-24 years
.
.
.
12. 65-69 years
13. 70-74 years
14. 75 years and over
15. not stated

Optional extension

DI-3a Divorces cross-classified by ethnic and/or nationality group and age* of divorcees, tabulate separately for husband and wife

Classification

A. Ethnic and/or nationality groups: (see paras. 185-186)

B. Age: (see DI-3)

Use of tabulations:

To establish age patterns of divorced couples; in the sociological study of age and age differences between husbands and wives as factors in the stability or instability of marriages.

Illustration DI-3. DIVORCES CROSS-CLASSIFIED BY AGE* OF WIFE AND BY AGE* OF HUSBAND

Age of husband (in years)	All ages	Age of wife (in years)							
		Under 15	15-19	20-24	.....	65-69	70-74	75 and over	Not stated
All ages . . .									
Under 15 . .									
15-19 . . .									
20-24 . . .									
.									
.									
.									
65-69 . . .									
70-74 . . .									
75 and over									
Not stated .									

Optional extension

Illustration DI-3a. Divorces cross-classified by ethnic and/or nationality group and age* of divorcees, tabulate separately for husband and wife

Ethnic and/or nationality group	All ages	Age (in years) Under 15	15-19	20-24	.....	65-69	70-74	75 and over	Not stated
					WIFE				
Total									
/each national or ethnic group for which separate information is required/									
All others . .									
Not stated . .									
					HUSBAND				
Total									
/each national and/or ethnic group for which separate information is required/									
All others . .									
Not stated . .									

DI-4 DIVORCES CROSS-CLASSIFIED BY DURATION OF MARRIAGE* AND AGES* OF DIVORCEES; TABULATE SEPARATELY FOR HUSBAND AND WIFE

Classification

A. Duration of marriage:

1. under 1 year
2. 1 year
3. 2 years
.
.
.
10. 9 years
11. 10-14 years
12. 15-19 years
13. 20 years and over
14. not stated

B. Age: (see DI-3)

Optional extensions

DI-4a Divorces cross-classified by age* at marriage of wife and by age* at marriage of husband

Classification

A. Age: (see DI-3)

DI-4b Divorces cross-classified by year of marriage* and age* at marriage of divorcees; tabulate separately for husband and wife

Classification

A. Year of marriage: individual calendar year for not less than 15 years and not more than 20 years, then by quinquennia, e.g. 1951-1955, 1946-1950, before 1946.

B. Age: (see DI-3)

Use of tabulations:

To enable a more complete study of marital instability by making it possible to include duration of marriage as an additional explanatory variable. Also for the study of the duration of marriages in cases of divorce involving women of child-bearing age - an important element to understanding the effect of marital instability on the potential fertility of the population.

Illustration DI-4. DIVORCES CROSS-CLASSIFIED BY DURATION OF MARRIAGE* AND AGES* OF DIVORCEES; TABULATE SEPARATELY FOR HUSBAND AND WIFE

Duration of marriage (in years)	Age (in years)								
	All ages	Under 15	15-19	20-24	.....	65-69	70-74	75 and over	Not stated
	WIFE								
Total									
Under 1									
1									
2									
.									
.									
.									
9									
10-14									
15-19									
20 and over									
Not stated									
	HUSBAND								
Total									
(as for WIFE)									

Optional extensions

Illustration DI-4a. Divorces cross-classified by age* at marriage of wife and by age* at marriage of husband

/as in illustration DI-3 with "Age at marriage of husband" substituted for "Age of husband" and "Age at marriage of wife" for "Age of wife"/

Illustration DI-4b. Divorces cross-classified by year of marriage* and age* at marriage of divorcees; tabulate separately for husband and wife

Year of marriage	All ages	Age at marriage (in years)			.....				
		Under 15	15-19	20-24		65-69	70-74	75 and over	Not stated
	WIFE								
Total . . . . . /individual calendar year for not less than 15 years and not more than 20 years, then by quinquennia, e.g., 1951-1955, 1946-1950, before 1946/									
	HUSBAND								
Total . . . . . (as for WIFE)									

DI-5 DIVORCES CROSS-CLASSIFIED BY NUMBER OF DEPENDENT CHILDREN* AND DURATION OF MARRIAGE*

Classification

A. Number of children:

1. none
2. one child
3. two children
.
.
.
8. seven children and over
9. not stated

B. Duration of marriage: (see DI-4)

Optional extensions

DI-5a Divorces cross-classified by number of dependent children* and year of marriage*

Classification

A. Number of children (see DI-5)

B. Year of marriage: (see DI-4a)

Use of tabulations:

Provision of still further refinement permitting the study of the effect of dependent children on marital stability; also important in the administration of social policy in so far as this policy must cope with providing assistance to children from "broken homes".

Illustration DI-5. DIVORCES CROSS-CLASSIFIED BY NUMBER OF DEPENDENT CHILDREN* AND DURATION OF MARRIAGE*

Duration of marriage (in years)	Total number of divorces	Total number of children	Number of divorces with					
			0 children	1 child	2 children	....	7 children and over	Not stated
Total . . . /classification of duration of marriage as in illustration DI-4/								

Optional extensions

Illustration DI-5a. Divorces cross-classified by number of dependent children* and year of marriage*

/as in illustration DI-5 with "Year of marriage" substituted for "Duration of marriage"/

DI-6 DIVORCES CROSS-CLASSIFIED BY LITERACY STATUS (OR EDUCATIONAL ATTAINMENT) OF DIVORCEES

Classification

A. Literacy status:
1. literate
2. illiterate
3. not stated

B. Educational attainment: (see paras. 162-163)

Use of tabulations:

For the sociological analysis of the possible relation of literacy or educational attainment to the stability of marriages.

Illustration DI-6 DIVORCES CROSS-CLASSIFIED BY LITERACY STATUS (OR EDUCATIONAL ATTAINMENT) OF DIVORCEES

/as in illustration MA-5 with "husband" substituted for "groom" and "wife" for "bride"/

DI-7 DIVORCES CROSS-CLASSIFIED BY OCCUPATION OF HUSBAND AND BY OCCUPATION OF WIFE

Classification

A. Occupation: (see paras. 205-206)

Optional extension

DI-7a Divorces cross-classified by occupation and by age* of husband

Classification

A. Occupation: (see paras. 205-206)

B. Age: (see DI-3)

Use of tabulations:

To provide data for study, similar to DI-6, of the effect of socio-economic level on the stability of marriage.

Illustration DI-7. DIVORCES CROSS-CLASSIFIED BY OCCUPATION OF HUSBAND AND BY OCCUPATION OF WIFE

Occupation of husband	Total divorces	Occupation of wife							
		Major group 0/1			Major group 2			.....	Armed forces
		Minor group			Minor group				
		0-1	0-2/ 0-3	(etc.)	2-0	2-1	(etc.)		
Total divorces . . .									
Major group 0/1 .									
Minor group 0-1 .									
Minor group 0-2/ 0-3 . . .									
(etc.)									
Major group 2. . .									
Minor group 2-0 .									
Minor group 2-1 .									
(etc.)									
.									
.									
.									
Major group X . .									
Minor group X-1 .									
Minor group X-2 .									
Minor group X-3 .									
Armed forces . . .									

Note: Classification of occupation should be according to, or convertible to, International Labour Organisation International Standard Classification of Occupations (ISCO, 1966), at least to the minor (two-digit) groups.

Optional extension

DI-7a. Divorces cross-classified by occupation and by age* of husband

Occupation of husband	Total divorces	AGE (in years) of husband							
		under 15	15-19	20-24	.....	65-69	70-74	75 and over	Not stated
/As in illustration DI-7/									

DI-8 DIVORCES CROSS-CLASSIFIED BY NUMBER OF PREVIOUS MARRIAGES OF HUSBAND AND NUMBER OF PREVIOUS MARRIAGES OF WIFE

Classification

A. Number of previous marriages:
1. zero
2. one
3. two
4. three
5. four or more

Use of tabulations:

For the sociological analysis, separately for males and females, of previous marriage-histories of divorcees, and also as an indicator of possible divorce "proneness".

Illustration DI-8. DIVORCES CROSS-CLASSIFIED BY NUMBER OF PREVIOUS MARRIAGES OF HUSBAND AND BY NUMBER OF PREVIOUS MARRIAGES OF WIFE

/as in illustration MA-4b with "husband" substituted for "groom" and "wife" for "bride"/

2. For data collected by sample field survey

(a) Extent and objective of tabulations

270. As was pointed out in paragraph 77, the topics to be selected for investigation by field survey depend on the country's needs; on the scope, purpose and type of survey; and on the available resources.

271. For a list of topics see paragraph 83 (in chapter III). To these recommended topics there corresponds a series of tabulations (summarized below in some detail) limited to such tabulations of live births and deaths as will produce demographic indicators of levels of living. For additional tabulations see list in paragraph 268.

(b) List of tabulations

272. The suggested basic tabulations of vital events collected by sample field survey are set forth below. For specifications and illustrations of the relevant tabulations see paragraph 269.

LIVE BIRTHS

1. LIVE BIRTHS BY PLACE OF USUAL RESIDENCE OF MOTHER
2. LIVE BIRTHS BY MONTH OF OCCURRENCE
3. LIVE BIRTHS BY SEX
4. LIVE BIRTHS CROSS-CLASSIFIED BY AGE OF MOTHER AND BY SEX OF CHILD
5. LIVE BIRTHS CROSS-CLASSIFIED BY PLACE OF USUAL RESIDENCE AND BY PLACE OF PREVIOUS RESIDENCE (AT A SPECIFIED TIME IN THE PAST) OF MOTHER

DEATHS

6. DEATHS BY MONTH OF OCCURRENCE
7. DEATHS CROSS-CLASSIFIED BY SEX AND BY AGE
8. DEATHS CROSS-CLASSIFIED BY PLACE OF USUAL RESIDENCE AND BY PLACE OF PREVIOUS RESIDENCE (AT A SPECIFIED TIME IN THE PAST) OF DECEDENT

INFANT DEATHS

9. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY AGE AND BY SEX
10. INFANT DEATHS (UNDER ONE YEAR OF AGE) CROSS-CLASSIFIED BY PLACE OF USUAL RESIDENCE AND BY PLACE OF PREVIOUS RESIDENCE (AT A SPECIFIED TIME IN THE PAST) OF MOTHER

V. THE CIVIL REGISTRATION METHOD AS A SOURCE OF DATA ON VITAL STATISTICS

A. The fundamental role of a civil registration system

273. Every country should strive to establish an efficient civil registration system. The many advantages of such a system may be summarized as follows.

1. Legal and protective advantages to individuals

274. As indicated in chapter I, the safeguarding of human rights with respect to social status and benefits, particularly amongst children and youth, requires that each vital event be registered. However valuable they may be for analytical purposes, none of the other techniques described in the following chapters can meet this requirement. In the case of sample registration schemes, it is only one segment of the population that is covered, while in the case of the remaining measures, the operations are in principle purely statistical.

2. Administrative advantages

275. Full registration also has certain administrative advantages not found in any other system. For some administrative purposes it is necessary to keep records on an individual basis, as with death by cause, and the number and identity of persons requiring maternal and child care, for example. And only with full registration is it possible to meet the frequent needs for data for small civil or geographic divisions; for data derived in some other manner must be based either on sample inquiries or on analytical techniques involving assumptions that render the estimates derived from these data unsuitable for application to smaller population areas.

3. Statistical advantages

276. A comprehensive civil registration system has a number of statistical advantages over other methods of obtaining vital statistics. It generates records which are relatively free from certain types of response error and which are not subject to sampling error; it provides statistical data for planning, administration and research at whatever geographic or administrative level is required; it is by nature, continuous; it is relatively inexpensive because the statistics are a by-product of an administrative process; it can record data which might not be obtainable in a field inquiry (such as weight at birth or cause of death); and it provides an inventory of events which can be evaluated against other records and against census data, and which can be used as a starting point for more intensive studies of fertility, morbidity and mortality.

B. The characteristics of the civil registration method

277. Although the characteristics of a general system of vital statistics suggested in chapter II apply in substance to the civil registration method, some points will be repeated here in order to give a comprehensive review of the statistical requirements of the civil registration method. 1/

1. Definition of registration method

278. Civil registration may be defined as the continuous, permanent, compulsory recording of the occurrence and characteristics of vital events as defined in paragraph 46, and as provided through decree of regulation, in accordance with the legal requirements in each country. Civil registration is carried out primarily for the value of the legal documents as provided by law. However, the usefulness of these records as a source of statistics is becoming increasingly recognized.

279. The term, "registration method", refers to the procedure employed in gathering the basic observations upon which vital statistics are based. It is used in contradistinction to both the term, "enumeration method", which refers to the means used to produce population and other census or survey statistics, and the term, "administrative method", which refers to the method by which statistics are produced as a by-product of management controls (as, for example, in the case of statistics of foreign trade that are developed from ships' manifests or customs declarations).

280. Vital statistics are incidence, not prevalence, statistics. That is, they are statistics which provide a measure of the occurrence of certain events during a specified period of time and which, moreover, provide this measure on a current basis. Experience has shown the registration method to be the only reliable one for obtaining a continuous and current record of events occurring throughout a period. In order to ensure both the current nature of the statistics and their accuracy with respect to dates and characteristics, the registration record should be completed as soon as possible after the occurrence of the event. The simplest and quickest way of accomplishing this end is to require the informant to provide the information as soon as the event occurs.

281. The continuous aspect of registration implies also that the procedure is permanent. Registration maintained for short periods and then allowed to lapse will not produce vital statistics which are useful as current incidence statistics.

1/ The characteristics specified below are essentially the same as those presented in the Principles for a Vital Statistics System, and they are presented here in the same abbreviated form. They are given in the Handbook of Vital Statistics Methods, in the expanded form analogous to the presentation of the content of other chapters of these revised "Recommendations".

282. Continuous, permanent recording of vital events can best be ensured by means of legislation which makes registration compulsory. Such legislation should also provide sanctions to ensure fulfillment of this obligation. Thus, it will be seen that the registration method is characterized not only by the continuous character of its observations, but also by its compulsory nature. Both provisions are fundamental to its successful operation.

2. Confidentiality of the registration records

283. Safeguards of the confidentiality of legal matters should be provided. However, such provisions should not be so rigid as to exclude the use of the records for special studies - under proper control of course. Considering the wide administrative uses made of good civil registration records (see para. 17) especially in countries with population registers, it is difficult to make the same guarantee of confidentiality that can be made in connexion with purely statistical inquiries. Such control as may be needed can be effected by co-ordination between the agencies holding relevant records: as, for example in a study of mortality differentials in the United States in which each of the agencies involved co-operated by extracting the pertinent data from its own records without breach of confidentiality. 2/

3. Designation of responsibilities

284. Responsibility for the establishment or development of a civil registration system should lie with an agency or agencies of a national government.

285. The assignment of functions should be accompanied by a clear designation of duties and responsibilities with respect to registration, recording, custody of records, statistical reporting, collection, compilation, analysis, presentation and dissemination of data, and the critical inspection and evaluation of the system.

286. In organizing and administering a civil registration system it is essential to give thought to the relationship between the registration function and the statistical function. The two functions are generally performed under the auspices of different ministries of the Government. Registration is a function of the registration offices and is under the jurisdiction of either the ministry of interior, the ministry of local government, the ministry of health, or, in some instances, ecclesiastical authorities. The statistical function for vital events, on the other hand, is primarily under the jurisdiction of the country's statistical services, which may be constituent parts of the ministries of economy, finance or commerce, or of the ministry of health. In general, the compiling agencies rarely have more than a co-ordinating management function involving

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2/ "Methods used in a current study of social and economic differentials in mortality" by Evelyn M. Kitagawa and Philip M. Hauser in Emerging Techniques, in Population Research: Proceedings of a Round Table at the Thirty-Ninth Annual Conference of the Milbank Memorial Fund, 18-19 September 1962, Milbank Memorial Fund, 1963.

the collection of raw materials. It is important, therefore, that a structure of detailed responsibilities be established. The choice of such an administrative structure will be largely determined by national conditions. To operate successfully, this structure must furnish a clearly spelled out specification of functions and responsibilities of the various agencies of the Government involved in the registration of vital events and in the compilation of vital statistics.

4. Co-ordination

287. The clear delineation of duties mentioned in paragraph 285 should be supplemented by arrangements for the co-ordination of needs and services among the official agencies concerned with the registration of events for legal purposes, those responsible for compiling facts for statistical purposes, and those that use these data for administrative or analytic purposes in connexion with economic and social matters, or for planning, operating and evaluating public health programmes.

288. Co-ordination with respect to coverage, definitions, classification schemes and tabulation programmes should also be maintained with the authorities responsible for the census of population, sample demographic surveys, population registers, migration statistics, public health statistics, and with the agencies responsible for social and economic statistics in general.

289. The co-ordinating mechanism established to achieve these objectives should have a direct relationship with the agency responsible for the general co-ordination of the national system of statistics and with that responsible for planning economic and social development.

290. The area in which it is most important to achieve co-ordination is that within the vital-statistics system itself or, in other words, between the agencies most directly concerned with the production and use of vital statistics. Production of vital statistics, including registration of vital events, may be the responsibility of local government, ecclesiastical, health, judicial, or statistical authorities. The main consumers of vital statistics are health and social-welfare services, both in and out of government, commercial interests, and demographers, economists, and sociologists, both governmental and private. Irrespective of which governmental agencies have administrative responsibility for vital records and statistics, it is essential to maintain a close liaison among all services concerned in order to eliminate and avoid any duplication of effort. Consideration must also be given to the needs of the various private agencies and governmental departments which will use the resulting statistics, in order that provision may be made for the collection of the original data in a form that will meet the requirements of these users. Classification and tabulation will, of course, depend on the extent and scope of the data, but within these limitations, the tabulation programme should be designed in terms of the needs of consumers.

5. Compulsory nature of registration

291. The foundation of every statistical system is legislation which authorizes a governmental agency to produce statistics, and defines the powers and resources

which that agency may use to carry out this responsibility. In the case of the vital-statistics system, there is usually such an authorizing law, frequently the general "statistics act", but there is, in addition, legislation providing for the registration function itself.

292. In accordance with priorities established under paragraphs 41-44, registration of every vital event occurring within the boundaries of the country should be made legally compulsory, for every group of the population, and parallel provision should be established for enforcement of this requirement. The efficiency with which these provisions operate or may be presumed to operate should not be a factor in their establishment.

293. The compulsion or legal obligation to register a vital event is the basic premise of the entire civil registration system. When registration is voluntary rather than compulsory, there can be no assurance of complete or accurate vital records or statistics.

294. Provision for uniform registration throughout the country is desirable, even when compliance with the registration law is apt to vary in quality among different regions or sectors of the population. The limitation of compulsory registration to a segment of the population, however large this segment may be, is not recommended, except in countries where very primitive conditions prevail. Where there are variations in the cultural level of the population, arrangements can be made for a simpler type of registration document, as, for example, might be used among people of a lower literacy level. This registration document should contain a minimum number of items of information. Where compliance with registration requirements is still at an early stage of development, adjustments can be made at the statistical collection or tabulation levels so as to safeguard the quality of the resulting statistics.

6. Incentives to registration

295. Incentives should be established to stimulate and encourage compliance with the compulsory registration law.

296. The best incentives to register are, of course, the privileges and rights, enjoyment of which is contingent upon proof of registration. The enjoyment of rights contingent upon attainment of a certain age, for example often requires proof of one's date of birth. Privileges such as being allowed to enter school or to obtain permission to work - especially in certain industries or in government civil service - are often contingent upon such proof, as is the obligation to serve in, or the right to be excused from service in, the armed forces; the right to apply for a licence such as that required to operate a motor vehicle or to carry firearms; and the right to enter certain professions, marry without parental consent, vote, qualify for social-security pensions payable only at a specified age, enter into legal contracts, and establish those inheritance rights contingent upon age.

297. Other incentives of lesser importance are the free proof of registration and the provision of free registration (see para. 335).

298. Another type of incentive is the imposition of a penalty for failure to comply with the obligation to register. If registration is compulsory under law, then failure to register should be punishable by law.

299. It is recognized that the principle of penalizing failure to comply with registration laws may not always be invoked; for the order to invoke it would require knowledge that an event had actually occurred, that registration of this event was wilfully neglected, and that continued delinquency is to be expected - all of which may be difficult to establish legally. The threat of penalty may also be a deterrent to compliance with a registration requirement at some later date on the part of persons who, for whatever reason, did not register the event during the period specified by the law. None the less, it would seem necessary to have at least the legal basis for prosecution if general compliance with the law is to be achieved.

7. Organization for registration at local and national levels

300. When a country's geography and administrative organization permit, responsibility for the registration of vital events should be vested in official local agencies which are directly dependent, in so far as registration matters are concerned, on a national office which can co-ordinate, unify, supervise, and promote registration efficiency to the degree necessary to satisfy both legal and statistical needs.

301. Although it is recognized that administrative efficiency is not the sole factor determining the type of organization for registration which a country might establish, it seems clear that, under some circumstances, there would be advantages to the centralization of registration under a national authority. Other factors being equal, centralized control would almost surely facilitate standardization of forms, procedures and methods. If properly administered, it should also stimulate improved registration by means of technical co-ordination, advice and assistance to registrars. The uniform interpretation of the registration law, the development of comparable procedures of a specified standard of excellence, the adherence to a definite time schedule of reporting - all can be established and maintained more easily through a system of national control.

302. Countries which lack national control of registration must devise substitute systems of co-ordination and methods of promotion to achieve improvement and standardization of procedures and results.

303. To sum up, it may be said that the type of organization adopted for registration purposes must accord with the conditions in each country and also be established upon the existing governmental structures, in order to take advantage of the administrative machinery already established. The facilities of the health department may be employed to assist in registration, as is done in many countries where it is the medical personnel involved who must notify the registrar of the occurrence of a birth or death. Similarly, several countries draw upon the assistance the church can lend by forbidding baptism to take place without prior civil registration.

8. Number and size of primary registration units

304. Local registration offices should be established in adequate numbers and in such locations as will ensure that they are easily accessible to the public, and they should be kept open for business during convenient hours, so that the informant may comply with the registration requirements within the time allowed by the law. If, for administrative reasons, it is impossible to extend the office hours of registrars beyond the normal business day, consideration might be given to allowing persons to absent themselves from their places of employment for purposes of registration.

305. The size of the primary registration unit should be such that the registrar in charge can give to that unit the attention required to produce good registration.

306. Accessibility. It is a maxim that the provision of a registration office easily accessible to every segment of the population is the first step in securing complete registration. If an individual must travel a long distance at some inconvenience and expense to himself in order to register an event, he will tend to neglect registration entirely or, at best, to delay it.

307. If the registration office is open for only certain hours of the day or only on certain days of the week, its accessibility to the public is seriously limited, and compliance on the part of the informant is that much less to be expected. It is noteworthy that some civil codes specify that the civil register shall be open for business at all hours of the day or night.

308. Manageability. From the registrar's point of view, and in the interests of improving registration, the size of the registration unit in terms of both area and population density should be such that the registrar can give to that unit the attention required to produce good registration. Such "attention" may involve keeping informed by one way or another of all the events occurring in the area, or simply handling expeditiously all requests for registration, searches and certified copies. For a superintendent registrar, it may mean being able to check on, or examine periodically, the work of subordinate registrars. For every registrar, it means being informed of the events which have occurred, recording these accurately and promptly in the official registers, and completing and transmitting on schedule the statistical reports for which he is responsible.

9. The registrar - his duties and responsibilities with respect to registration

309. The duties and responsibilities of the registrar (or his equivalent) at the local, intermediate, and national levels should be codified. The registrar should take responsibility as appropriate for: recording the specified information regarding vital events; ensuring compliance with the registration law; ensuring the accuracy and completeness of each record; adopting such measures as are required to inform the public of the necessity, procedures and requirements for effecting registration, and the value of vital statistics; taking custody of records; and recording and reporting data for statistical purposes.

310. Where there are difficulties of distance, terrain or transport which prevent informants from visiting the registration office to register vital events, provision should be made for the registrar to carry out his functions on an

itinerant basis, preferably by making regular rounds of the households in his registration unit to register such events as may have occurred since his last visit.

311. In areas where registration is seriously deficient, the provisions mentioned above should be interpreted as including all of the activities concerned with promotion, supervision and evaluation to the degree necessary to raise the efficiency of the system; such as: activities designed to raise the professional status of the registrars themselves 3/ and to ensure adequate numbers of registration offices, training of registration officers and the preparation of manuals of instruction for their use, the preparation of mass publicity programmes in the vernacular, securing support from local leaders in influencing local opinion, the encouragement of control of burial grounds to ensure that burial permits are issued, the regular supervision of registration records and statistical reports compiled in registration offices, and the development of evaluation procedures designed to measure the degree of completeness. 4/ The considerable support necessary for carrying on these activities can in most instances be provided by the statistical service and the health department.

312. On the registration side, the registrar is responsible for becoming aware of and receiving reports on all live births, deaths, stillbirths, marriages and divorces, as well as any other vital events that may be legally registrable in his area. He must be familiar with the registration law and assume responsibility for its interpretation and for securing compliance with it. He must publicize his office, as well as the obligations of the public, in such a way as to obtain complete and prompt registration. The registrar must complete (often in duplicate or triplicate) a written record describing each event; he must examine these records critically and have them certified for accuracy by the informant, take steps to correct inexact data or to obtain additional information if required, assume custody of the legal records, provide for searches of files and the issuance of certified copies of records, issue burial permits, make complaints against those who fail to register, and perform any other registration function the law may place upon the office of the registrar.

313. To meet statistical needs, the registrar must complete a statistical report on each vital event registered. It is his duty to transmit these reports to the one or more authorities charged with the compilation of vital statistics; and to do so according to a schedule which will allow him to secure the maximum number of registrations, to check and verify the completeness and accuracy of reported data and, at the same time, allow the statistical authorities sufficient time to produce from the reports current vital statistics, adequate to meet all needs. The registrar may also be required to inform local health authorities of the occurrence of certain vital events such as live births, and deaths from certain causes.

10. Improving the efficiency of registrars

314. The position of "registrar" should be one of local prestige and responsibility, and remunerated sufficiently to attract competent personnel. The

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3/ The lack of status of registrars has been cited as a major cause of difficulty. See Fourth Inter-American Statistical Conference, Washington, D.C., November 5-16, 1962, Final Report (OAS Official Records, OAS/SER.C/VI.6.4), p. 48.

4/ See chapter VII: Evaluating a Vital Statistics System.

post of registrar should be one of importance in the community so that registration is an acknowledged and willingly accepted obligation among the public.

315. To produce good registration, the registrar must have such standing in the community as will induce and enable him to carry out his responsibilities faithfully, inform himself of all vital events by co-operative arrangements with persons who are in a position to have this knowledge - such as personnel in hospitals, clinics, and health centres, funeral directors, church personnel, and court clerks - and, at the same time, be a servant in the public-service sense.

316. The national registration authority or its equivalent should take such steps as are necessary to provide guidance and instruction for registrars in carrying out their responsibilities. The registrar, like every other individual entrusted with a responsibility, requires guidance or instruction as to the manner in which that responsibility is to be executed. He must be instructed with respect to the terms of the law under which he operates and the policies adopted in the interpretation of that law; he must be aware of his prerogatives as well as his duties; and must be told how to do his job, and be given the tools - for example, the forms necessary for registration - that will enable him to do it. All of the instructions a registrar requires should be incorporated conveniently into a single manual which he can keep on his desk at all times.

317. The problem of keeping instruction manuals abreast of current developments can be solved by adopting a loose-leaf type of publication to which leaves may be added or from which they may be deleted, as occasion arises. Such a system makes it possible for the central office to keep local registrars supplied with current information and to do this inexpensively. It also provides ready-made co-ordinating mechanism in that there will be a constant need for the central office to keep in touch with the local units.

318. Since local registrars are at the administrative periphery of the registration system, there is value in having a system of inspection or review to ensure that the various units follow instructions and carry out their responsibilities in an acceptable manner. Inspection of the registers is one effective method of improving the efficiency of the registrar, especially if it can lead to the introduction of improved procedures; another is the interchange among registrars of their work-practice experience.

319. A method of training which can be utilized either alone or in conjunction with the issuance of manuals is the technique of bringing a number of registrars together for group instruction in the elements of their work, or to introduce them to new forms and procedures.

320. Guidance to registrars can also be provided by regular visits to local offices of consultants from the headquarters office.

321. The establishment of a professional association of registrars for the purpose of exchanging views on the administration of registration as well as its problems is still another method by which the status and work of registrars may be improved. By definition, such associations would be limited in their deliberations to consideration of problems which have their origin in registration, those requiring co-ordinated effort would remain within the competence of conferences with broader membership. The technique is especially useful when the registration organization for vital statistics is not centralized. In such cases, some means

must be found to form the registrars into a single group with a unified purpose. National associations of registrars might tend to exclude the local official, but the technique is certainly applicable at any level - national, provincial, or local. At one or all of these levels, associations of registrars might prove to be the answer to the need for co-ordination in a decentralized system.

11. Designation of legally responsible informant

322. The raw data of vital statistics usually have their origin in one person - the informant. The informant is the individual whose responsibility, designated by law, is to report to the registrar the fact of the occurrence of a vital event, together with certain of its characteristics. Only on the basis of his report may the event be legally registered by the registrar.

323. Not only must the informant provide information for registration purposes, but he also must provide such data as are required for purely statistical purposes. Sometimes these two sets of data are identical, but often they are not. The informant should be the person best equipped to provide all the facts and to provide them accurately within the time period allowed and at the place specified in the law.

324. In order that the informant may fulfil all these requirements, it is important that he should be clearly and unequivocably designated so that one and only one person will have primary responsibility for providing the information needed for registration.

325. Responsibilities with respect to informing the registration authorities of the occurrence of an event should be clearly and unequivocably designated by law or regulation, and publicized to the degree necessary to establish familiarity with the legal obligations.

326. In most cases in which there is a need for a substitute or alternate informant to take responsibility for providing information to the registrar this need is related to the character of the place where the event occurred. In some countries it is customary to provide that when a birth or death occurs in a hospital or other institution, the administrator of the establishment must assume responsibility for registration. In places where health units are well established, the sanitary inspector or the midwife may take the duty of registering the event. These provisions are primarily matters of convenience to be decided according to national circumstances.

327. In connexion with the registration of a birth, death, or stillbirth, it is important to note that the informant's function is one of declaration. This is not to be confused with the supplementary function of medical certification of live birth or of cause of death or stillbirth. The declaration of the fact of birth or death is obligatory or compulsory for a designated informant in every economically developed country in the world; but the certified cause of death or stillbirth is not universally registrable information, although it is a statistical item in almost every country. Usually the responsibility for reporting the occurrence of a death falls on a lay person, while the responsibility for certifying the cause of death devolves upon the attending physician or, in his absence, upon the coroner who examined the body.

328. Provision should be made for delegation of authority in certain circumstances as required by reason of literacy, topography, place where event occurs, and so forth.

329. As far as possible, medical certification of cause of death should be the responsibility of the attending physician.

12. Place where registration is to be made

330. Each vital event should be registered in the primary registration unit in which it occurred.

331. The place of residence should always be reported (see paragraph 245) and if the registered event concerns a resident of a locality other than that where the event occurred, it is desirable also to make such arrangements as are required to inform the registrar of the place of residence concerning the event.

332. The choice of the place where registration is to be made depends on national practice, on local custom, and on environmental factors peculiar to each country, but generally registration in the place of occurrence will facilitate compliance, minimize the chance of error and delay, and increase the usefulness of the resulting records. This obligation does not preclude arrangements for reallocation of records or notifications to place of residence, or the necessity of tabulating data by place of residence.

333. There are certain definite advantages in registering an event where it occurs. It might reasonably be assumed, for example, that an event would be more likely to get registered within the legal time-limit if it were done in the place where it occurred. The use of vital records for public-health activities at the local level is also facilitated by "place-of-occurrence" registration. This is especially true in cases of death from communicable disease, where certain measures must be undertaken without delay in the area from which the death is reported. Registration by place of residence, if different from the place of occurrence, would not only introduce a time lag which could be dangerous in its results, but would also complicate the delineation of the geographic area for control activities. It should also be noted that the police investigation of violent deaths or those taking place under suspicious circumstances depends on place-of-occurrence registration. This is so because of the jurisdictional questions involved, which would make extremely difficult the prompt police actions required if registration were in the place of residence of the deceased.

13. Cost of current registration

334. In recognition of the fact that the registration of vital events is a legal and obligatory function prescribed by the State, and one which should be facilitated rather than hindered, it is recommended that the registration of vital events, as prescribed by law, be free of charge to the person making the registration, if legal provisions with respect to such items as time are complied with.

335. As an incentive to registration, it may be desirable in some countries to furnish an initial proof of registration to the informant - again without charge.

336. This recommendation does not preclude the imposition of a fee for late (delayed) registrations, i.e., those effected after the expiration of the statutory period, or for searches of the registers and the certification of true copies. What it proposes is that free registration be provided if all provisions of the law with respect to time and other requirements are met. The provision of free registration may thus be used as an incentive for achieving complete and prompt registration. In addition, it is suggested that the initial proof of registration be furnished free as a further incentive to register. Many countries may not find this second incentive necessary or desirable, but in other cases such a provision may prove highly advantageous. (See also para. 297).

14. Time allowed for current registration

337. In order to enforce the obligation to register vital events, it is necessary that there be a limit on the time allowed for the informant to comply with the law. It is for this reason that almost every national registration law includes a specification on the statutory time allowed for current registration, i.e., a precise designation of the time period within which the informant must make his declaration to the registrar.

338. The maximum period to be allowed between the occurrence and the obligatory registration of a vital event should be determined with respect to all the contributory factors operating in the country and should be as short as is consistent with facilitating the current and accurate registration of all necessary facts.

339. Prompt registration of all vital events, and especially of live births, is important from several standpoints. First, the chance of securing accurate information from an informant decreases with the passage of time. This, as has been pointed out previously, is one of the prime reasons for recommending establishment of a registration system to collect data on vital events instead of depending on surveys to gather such information long after the events have occurred. Facts recalled from memory can never be as valid as data recorded immediately upon their occurrence. Provision of extended periods for effecting registration tends to encourage default or, at best, foster incomplete and inaccurate reporting. It is axiomatic that the shorter the period of time allowed to elapse between the occurrence of an event and its registration (and the stricter the enforcement of the requirement), the more accurate will be the information obtained.

340. Notwithstanding the importance of immediate registration in fostering complete and accurate coverage, in providing current case registers, and in promoting current statistics, it is an acknowledged fact that considerations of national topography, climate, communications, culture, and so forth, must be taken into account in determining the maximum time periods which should be allowed by law for the registration of vital events. In countries where communications and transportation facilities are poor, where registration offices are far apart, and where seasonal changes bring hardship, registration periods of short duration may only discourage compliance. This is especially true when the expiration of the period for legal registration brings with it a severe fee for late registration and perhaps special court procedures for securing registration. The need for flexibility in the law governing the time allowed

for registration is exemplified by the fact that certain countries provide for two periods: one for events occurring in urban or settled areas, and another for events which take place in more isolated parts of the country.

341. Every civil registration system should recognize the inevitability of delayed or late registration, that is, those registrations which can be effected through regular registration procedures but which are made after the expiration of the standard registration period. Provision should be made for registering these events in a way which will discourage repetition, but not discourage registration.

15. Form and content of the registration records

342. Separate registers should be maintained for each type of event on which data are to be collected by the registration method. This will promote completeness and accuracy in the individual items of information and develop efficiency of operation in registering and reporting for statistical purposes.

343. In order to ensure uniformity throughout the country, the form and content of the registration record should conform to a national standard established by the national agency which controls or co-ordinates registration. Such standardization should not, of course, prejudice the right of sub-national authorities to add important items of local interest or administrative value.

344. The desirability of establishing a national standard is based on the need to obtain at least a minimum of uniform data for every segment of the population. Not only is it advantageous for the legal record of a vital event to be nationally uniform, but the content and definitions employed in the register also directly influence the corresponding items on the statistical report, and the necessity of standardization in this respect cannot be over-emphasized.

345. It must be emphasized that there is a distinction between the content of the legal registration record and the additional particulars required for statistical purposes. This distinction is important because the additional information required for statistical purposes is often confidential in character, and it both helps the registrar and allays the fears of informants if this distinction can be brought out clearly at the time of registration.

346. The trend toward statistical reports which contain items of information not in the register is prompted by a number of factors, one of which is the legislative restrictions which make changing the registers a laborious, lengthy, and sometimes impossible task. In some cases, reference in the registers to items of information such as race or legitimacy is forbidden by law, but these items can be asked for statistical purposes so long as the identity of the person involved is not disclosed. In such cases, a statistical report separate from the register solves the difficulty.

347. Another factor which may influence the trend toward independent and more extensive statistical reports on vital events is the practical difficulty of including in the established registers all the items of information considered necessary for statistical purposes.

348. The information in the registers must be as correct, complete and legible as the registrar can make it. Accuracy is essential not only because the

information recorded at the time of registration becomes part of a legal document but also because it is the foundation of vital statistics. Errors incorporated at the registration stage will either be perpetuated, or they will be the cause of complicated correction procedures detrimental to the records and troublesome to the individual concerned.

349. Illegible records are as much to be avoided as incorrect information. Unless the data in the record can be understood readily and correctly, there will be danger of erroneous interpretation as the record is deciphered by various individuals for different purposes. The need for legibility is particularly important in respect of names, addresses, and the identifying characteristics required for indexing, not only for ease of indexing but to obviate the possibility of duplicate registrations.

350. When the registration record is the only source of information for statistical purposes (i.e., when there is no separate and distinct statistical report), provision should be made for obtaining information on at least the priority topics listed in paragraph 71.

16. Definition of each topic on the registration record

351. Each topic on the registration record should be defined, clearly and unambiguously, in accordance with the relevant definitions given in paragraphs 86-230.

352. The designated definitions should be printed either on the registration record itself or in the form of separate instructions, in order that they may be easily available at all times to the registrar responsible for interpreting them.

353. The establishment of definitions and standards for registration should be a function of the central registration office. However, as most registered data are potentially the basic material of vital statistics, the instructions for recording must also be in absolute conformity with the concepts employed by the statistical authorities.

C. Recording, reporting and collecting of civil registration data for statistical purposes

1. Statistical reporting - coverage

354. A statistical report should be made on every event which is legally registered, whether registration takes place within the period prescribed for current registration or is delayed, and regardless of the procedure by which the legal record is established. The aim of this recommendation is completeness of reporting, irrespective of anything other than the occurrence of the event. Unless such total statistical reporting is a corner-stone of the vital-statistics system, the resulting statistics will always be deficient.

2. Statistical-reporting area: geographic and ethnic aspects

355. Every geographic area or ethnic group for which registration records are available should be included in the statistical-reporting area, and emphasis should be placed on statistical recording and reporting of all events which occur, irrespective of either the completeness of registration coverage or the extent of data available.

356. As far as practicable, qualitative or quantitative indications of the degree of completeness of registration should be given for each geographic reporting area (See chapter VII, Evaluating a Vital Statistics System) and also, where pertinent, for various significant segments of the population (e.g., various ethnic groups).

357. This principle relates especially to the tendency on the part of some countries to limit statistical reporting to areas for which they assume registration and reporting are moderately complete. There are several reasons why reports from every geographic area and ethnic group should be collected. One of these is the need for vital statistics, tabulated for every geographic area, for use in connexion with plans and programmes for the improvement of statistics. The establishment of certain criteria of completeness as a prerequisite to tabulation is an accepted method of improving the adequacy of the resulting statistics, but this should not be a bar to general reporting. Exclusion of an area or a group of the population from the obligation to report will not tend to stimulate completeness of registration or reporting in the area, but will act as a depressant, instead.

358. A second reason for unrestricted reporting is that even fragmentary data for certain areas are better than none, especially as an aid to public-health programmes where the need may be for individual reports, or where even approximate figures for small geographic subdivisions can be useful.

3. Organization for collection of statistical reports

359. Reports on vital events for statistical purposes should be collected centrally by the agency which is responsible for the statistical compilation.

360. If it is desirable to have data on a sub-national basis, as well, provision should be made either for channelling original statistical reports through local, state or provincial departments of government, or for supplying these agencies with copies of these reports.

361. The channel through which the registrar transmits his reports to the statistical service and the form in which these reports reach the national level are dependent on a variety of factors. First among these factors is the organizational or administrative pattern of the vital-statistics system. In countries where statistical compilation is the responsibility of a sub-national geographic area, such as a state or province, rather than of the national government, it is evident that the statistical reports on vital events will first pass from the local registrar to the state or provincial office. At this sub-national office, they may be copied, or compilations made from them before transmission to the national office. In any case, there is an intermediate step between the registrar and the national statistical service where compilation is the responsibility of a sub-national area. There may or may not be such an intermediary step in countries where the peripheral registration offices depend directly upon the central government.

4. Control of receipt of statistical reports

362. Every possible administrative procedure should be employed for controlling the prompt receipt by the central vital statistical office of statistical reports from every reporting area. This is to ensure the possibility of making current tabulations that will be adequate in terms of completeness of geographic and ethnic coverage, timeliness and detail.

363. A strict time schedule should be established that will take into account the characteristics of the country in terms of topography, communications, and so forth, as well as the provisions for channelling original reports or copies thereof to intermediate offices. (See para. 360.)

364. The central vital-statistics office is recognized as the collecting agency with the responsibility for promptly obtaining a statistical report from every reporting area on every vital event which has occurred. The right of the office to insist on, and to control, prompt reporting is based on its obligation to prepare current tabulations of vital statistics adequate in respect to timeliness and coverage and detailed enough to meet the variety of needs served by such statistics.

365. Not only is it essential that reports be received promptly so that statistical processing can begin, but every delay in reporting decreases the potential effectiveness of the query programme for correcting and accounting for deficiencies. The more time allowed to elapse between registration and querying, the less chance there will be of either locating the informant or of obtaining from him the correct or necessary additional information.

366. To establish a proper time schedule for reporting, it will be necessary to consider not only the theoretical desirability of current reporting but also, from a practical standpoint, the characteristics of the country which may well militate against prompt reporting. Poor communication and transportation facilities, isolation of parts of the country by climatic conditions, and so forth, will all need to be taken into consideration in determining a realistic schedule, as will the number of intermediate receipts and dispatches of reports.

367. Once the schedule is established, the receiving office must diligently control the receipt of reports. Control must be exercised both for promptness and for completeness and accuracy of reporting. Not only must reports be received on time, but care must be exercised to see that returns are received from every geographic reporting unit, and that the frequencies reported are consistent with those reported during equivalent reporting periods in the past.

5. The duties and responsibilities of the registrar with respect to recording and reporting statistical information

368. The legal definition of the responsibilities of the registrar should specify that he has duties with respect to recording and reporting information for statistical purposes in addition to his responsibilities for filing legal records of events.

369. Whether the specified procedure provides that he transmit to the statistical authorities a duplicate of the original legal record or an independent statistical

form, this report should be as complete and accurate as he can make it (see para. 348). The coverage in terms of events should similarly be complete and timely.

370. The method used by the registrar to produce the statistical report will have a bearing on its potential accuracy. If the statistical report is prepared as a draft before any entry is made in the register and if it is read through and its reliability certified by the informant, it is probable that either the draft itself or a copy of it will be the most accurate statistical report the registrar can produce. Moreover, if the copying of the draft, when required, is done by photographic methods rather than by transcription, the result will tend to be more accurate.

371. It may be concluded, therefore, that the basic responsibility of the registrar to produce an accurate and complete statistical report of each vital event can best be met by: interrogation of the informant, recording of the information on the draft statistical report, subsequent review and verification of the recorded data by the informant, and - if reproduction of the draft is necessary - duplication of the report by the most accurate method available.

6. Improvement of completeness and accuracy of data reported for statistical purposes

372. An appropriate continuous querying procedure should be established and maintained with respect to all data collected for statistical purposes - and in particular with respect to terms of doubtful significance used in reporting causes of death. This is for the purpose of clarifying the facts concerning the event and of educating the informant and the recording agent regarding reporting requirements, in order that the resulting statistics may be improved.

373. Continuous training and instruction of both registrars and medical personnel for the purpose of improving basic data is an important element of an effective vital statistics system.

374. After reports have been received and their aggregate number compared for control purposes with former receipts, a critical examination of each report should be undertaken. Close scrutiny or "editing" of the reports has as its ultimate object the improvement of data reporting by questioning inconsistent, inappropriate, or obscure answers, and by noting where information has not been given on the reports. This process of repeated questioning is known as "querying". In many instances, the new information received may substantially improve the statistical results. In other instances where the quality of reporting is already high, there may be no material improvement in the statistics as the result of these activities, since these additions to the data might not be significant. In the latter instances, the objective of these activities is to educate the informant and to promote better reporting so that the quality of the future statistics will be maintained and to the extent possible, improved.

375. The importance of being in a position to query items of information has already been stressed. Assuming that the appropriate organizational pattern for compilation of statistics has been established, querying procedures should be a routine administrative function, set up on a comprehensive or sampling basis

according to the needs of individual countries and the problem areas within countries. It may be expedient and possible for most, if not all, of these queries to take place below the national level, but the important point is that provision be made for a critical central review and that steps be taken to improve reporting by educational and promotional activities.

7. Form and content of the statistical report for a vital event

376. The forms of the statistical report for a vital event should be uniform within the entire country. The standardization of format is even more important in connexion with the statistical report than it is in connexion with the legal register. Such standardization is an important factor, also, in achieving greater efficiency in statistical processing.

377. Moreover national uniformity of reports on each event will be of help in standardizing instructions to registrars, an aspect which should not be overlooked when establishing the design for statistical reports.

378. The advantage of uniformity of size, shape and layout of statistical reports cannot be overrated. Uniformity tends to simplify processing and the arrangement and filing of records; the reports can be manually counted with greater ease; and they can be edited and coded more speedily and accurately.

379. To ensure flexibility and efficiency, each statistical report should be designed for use with only one type of vital event. The individual document should provide adequate space for the response to the information item required on each event.

380. Separate statistical reports for each type of event will promote efficiency in reporting for statistical purposes, and will tend to bring about completeness and accuracy of individual items of information.

381. The list of topics to be included in the statistical reports should be determined on the basis of a detailed study of the country's needs and of the ultimate uses to which the vital statistics will be put.

382. The content of the statistical report should be in accordance with the recommendations set forth in paragraph 71.

8. Definition of the topics on the statistical reports

383. Each item on the statistical report should be accompanied by a clear, explicit, and simple definition for the guidance of the person recording the information.

384. Definitions of topics suggested for inclusion in the statistical reports are given in paragraphs 86-230.

VI. THE ROLE OF SAMPLING IN COLLECTING AND PROCESSING OF DATA FOR VITAL STATISTICS

385. This entire chapter is devoted to a review of the role of sampling in the collection and processing of vital statistics. The role of sampling in the evaluation of vital statistics data is not included here but is presented in chapter VII together with discussion of the other aspects of evaluation.

386. The present chapter does not deal with the principles and methodology or operational aspects of sampling, nor does it consider whether the advantages of sampling (for example, reduced cost, improvement in timeliness of statistics, achievement of higher quality) will result from the applications cited. For the theoretical considerations, such as preparation of valid estimates (especially in developing countries), the standard texts should be consulted. 1/

A. Collection of data for vital statistics

387. Theoretically, sampling can be applied to the collection of data on all types of vital events. However, for events of low incidence such as foetal deaths, divorces, annulments, etc., any effective sample size would have to be quite large. On the other hand, applications concerned with processing (including tabulation) may be appropriate in connexion with statistics of all of the events mentioned irrespective of their incidence.

388. In accordance with the distinction introduced in chapter IV, the discussion of the application of sampling to the collection of vital statistics will be in two parts: the one pertaining to a situation in which there exists a comprehensive civil registration system, the other, to a situation in which civil registration is lacking or deficient.

1. Where a comprehensive civil registration system exists

(a) Investigation of supplemental topics

389. Because every vital event which occurs among the population should be registered for legal purposes, civil registration must be universal in the area under investigation; it is therefore evident that the legal aspects of registration are not applicable to sampling. However, the recommendations for topics to be investigated by civil registration in a vital statistics system, as set forth in chapter III, constitute an extended list, some items of which it may not be convenient or advisable to cover completely in the legal register. Moreover, the legal provisions may be such as to preclude the addition of topics

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1/ See also "Conducting the household survey", chapter IX of the Handbook of Household Surveys, and the report on the Inter-Regional Workshop on Methodology of Demographic Sample Surveys.

not specifically authorized in the law. In such instances, sampling may prove of great utility in the investigation of topics not included in the legal records but required for producing the full gamut of tabulations recommended.

390. Such topics could be investigated in a sample of registration units or in a sample of relevant events as they are registered in the registration units. In the first instance, each informant in the registration units comprising the sample would be asked to supply the additional information, which would then be entered on the statistical report (but not, of course, in the legal register). In the second case, the informant for the events selected in the sample of events would be asked to supply the information on the additional topics. Since in most countries the statistical report is not an exact replica of the legal record, no difficulty should arise in implementing either of the above suggestions.

391. Topics which lend themselves to this method of investigation are those relating to minority groups (ethnic (or national) groups); migrant status (place of previous residence, duration of residence, place of residence at a specified time in the past); economic characteristics: educational characteristics; interval since last previous live birth to mother; legitimacy; maternal data on infant deaths, etc.

(b) Sample of registration units

392. The establishment of a sample of registration units need not be considered solely in connexion with countries where the civil registration system is deficient (see para. 390). Even where good basic vital statistics are derived from information recorded in civil registers, a sample registration area scheme can serve a useful purpose.

393. It has already been noted (in para. 389 above) that a sample area can serve for the investigation of topics which can neither be included in the civil register nor investigated on a 100 per cent basis in a statistical supplement. In addition, sample registration areas can provide a means of getting special tabulations more quickly and cheaply, and they can provide a proving ground for testing new procedures before these are incorporated into the national system. Sample registration areas can also be used to produce current population statistics.

(c) Record-based surveys

394. The scope of demographic research on vital events is necessarily confined to the kinds of information that are available. As vital statistics registers can normally contain only a limited amount of peripheral or background information, sample surveys offer an important means of enriching and enhancing the data obtained from these registers.

395. The sampling frame for such an inquiry will be the civil registers themselves. From these a systematic sample of records can be drawn to be followed back (or followed forward to the informant) for the collection of additional or supplementary information on the event under consideration.

396. A number of representative sample surveys linked to the death register have been carried out (mainly by mail) in the United States as part of the national

mortality sample survey instituted in 1961.[2/] Among the topics covered have been hospital utilization, household composition and socio-economic variables, morbidity and disability during last year of life, and the cost of medical care. Another sample survey programme, the national natality survey, which was set up in 1963, has obtained supplementary data on the radiological examination history of mothers, pregnancy histories, congenital malformations, etc.

(d) Record linkage

397. Alternatively, the procedure described in paragraph 395, may involve the collation of records generated by a sample survey with other records in order to merge the two sources of information on the one event. Such merging, which is known as "record linkage" brings together information from two or more separate documents with the object of consolidating facts concerning an individual or an event which are not available on any of the records separately. Since such an operation is better suited to inquiries at a fairly modest scale, sampling from the records is required to keep down the size of the operation. This sample may be representative or it may be purposively chosen. One major limitation of this method of data collection is, of course, the limitation on geographic detail it can produce.

398. A record-linked pilot study of relatively modest size and objectives has been carried out in a purposive sample in Canada (Province of British Columbia) where family groups have been identified by linking individual birth records to records of marriages of the parents on the basis of such common information as names of husband and wife, their birthplaces and their ages. Linkage was effected automatically by electronic computer. 3/ Though these linkages were established primarily to implement studies on population genetics, it is obvious that the technique is equally useful in providing the statistics required for furthering demographic research. Studies of child-spacing following stillbirth and infant death, for example, can be carried out by linking births, marriages and deaths into family groups. Family reproductive histories can also be developed in this way by linking, for example, such information as relationship of birth order to duration of marriage. 4/

399. An example of considerable interest is the record-linked investigation of economic and social differentials in mortality in the United States which the University of Chicago conducted in co-operation with the National Vital Statistics Division and the Bureau of the Census. By individual matching of a national sample of death registrations with persons enumerated in the 1960 census, it becomes possible to collate the information on each death record with all the relevant variables enumerated on the census schedules and by this means to study differentials associated with geographic area, place of birth and ethnic group,

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2/ Design of Surveys Linked to Death Records: A Description of Methods Used in Conducting Surveys Linked to the Death Record, by Monroe G. Sirken, James W. Pifer, Morton L. Brown, U.S. Department of Health, Education and Welfare, Public Health Service, National Center for Health Statistics, National Vital Statistics Division, September 1962.

3/ See The Use of Vital and Health Statistics for Genetic and Radiation Studies, sessions V, VI, VII.

4/ Precedents for this type of study are documented in "Methods of Using Old Documents to Study Population Trends in the Past" by T. H. Hollingworth, in Proceedings of the World Population Conference, Belgrade 1965, important amongst which is the work of Louis Henry and other French demographers using parish registers as their source.

income, occupation, education, family status and housing type, social and economic factors for selected cause of death, and various relationships among the social and economic factors. 5/ A similar study was undertaken by the National Center for Health Statistics with the co-operation of the state vital statistics offices, to analyse infant mortality in the United States in greater depth. Birth and death certificates were linked for each infant who was born in the United States in 1960 and who died before reaching one year of age. By combining information from the live birth records and the death records raw data were provided for a study of infant mortality among a cohort of infants born alive in the United States in 1960; also the number of variables available for study was greatly increased. In addition to place of residence, colour and sex, other pertinent variables such as mother's age, order of birth, birth weight, and period of gestation were made available for the study. 6/

400. Also of significance is the inter-American mortality study of 1962-64 in which a sample of registered deaths in urban areas was followed back to the households of the decedents and to the hospital records and autopsy findings to augment the information on cause of death. 7/

2. Where a civil registration system is lacking or deficient

401. Where civil registers do not yet exist or are insufficiently reliable, and where efforts to improve this situation are being made but resources are limited, sampling can be applied to advantage at the level of data collection, specifically, (a) by delimiting a registration area of reasonable size, (b) by establishing a sample of households to be surveyed or (c) by a combination of these.

(a) Sample registration areas

402. Since every event encountered in the area should be registered, the sample will by necessity have to be a 'registration area sample' of a size commensurate with the resources available for its development. Such a miniature system could form the nucleus around which a national vital statistics system could be developed. By its limited size, it could provide an administratively feasible means of using limited developmental resources more effectively than could be done if these resources were spread thinly over the whole country. It could also provide a proving ground for procedures. If it is a probability sample, it might conceivably also produce estimates of vital rates.

5/ "Methods Used in a Current Study of Social and Economic Differentials in Mortality" by Evelyn M. Kitagawa and Philip M. Hauser in Emerging Techniques.

6/ A study of infant mortality from linked records: Method of Study and Registration Aspects. Vital and Health Statistics. PHS Pub. No. 1000-Series 20-No.7. Public Health Service. National Center for Health Statistics, Washington, D.C., U.S. Government Printing Office, Feb. 1970.

7/ Patterns of Urban Mortality: Report of the Inter-American Investigation of Mortality by Ruth Rice Puffer and G. Wynne Griffiths (Pan-American Health Organization publication), Washington, 1967.

(i) Purpose area sample

403. The simplest application of area sampling to the development of civil registers is possibly the "pilot" - "demonstration" or "model" - registration scheme. This can be established in various strata, for example, in the capital city, in urban areas, or in selected regions or districts: wherever, in short the criteria of feasibility and operational convenience are met, the administrative facilities and staff are available: and where it is believed that success may be achieved with relative ease and speed. On the other hand, if there are administrative or other obstacles to the selection of a probability sample of areas, the purposive sample may be the preferred method (see para. 405 below).

404. The aim of establishing this purposive sample in areas where obstacles are considered surmountable is to gain experience, both for the staff in the enforcement of civil registration and for the population in meeting the requirements. Such demonstration areas are useful for both promotion and improvement of the system, provided they are organized in accordance with the normal registration conditions and procedures appropriate to the country as a whole. Under these conditions it may also be possible to measure changes in particular rates in particular areas, provided suitable information on the population base is available (see para. 418). However, it must be emphasized that estimates thus obtained for this particular type of area is under no circumstances to be applied to other areas, e.g., to areas on higher levels of geographic aggregation.

(ii) Probability area sample

405. The procedure by which the United States developed its civil registration system may be regarded as essentially one of purposive sampling somewhat along the above lines: similarly in the Kenya 8/ sample vital registration scheme and in the many instances, such as in Ghana, where a system has been instituted for administrative reasons in special areas, particularly in urban areas or pilot zones.

406. Where a system of sample registration areas is contemplated as a means of promoting development of a comprehensive civil registration system in the long run and of obtaining interim estimates of vital rates in the short run, it is recommended that the selected areas constitute a probability rather than a purposive sample. This is in accordance with the objective of obtaining estimates of the rate of population growth with minimal delay, as an aid to development planning, while at the same time promoting registration for the legal and administrative advantages which it confers.

407. Such a sample registration area is not a substitute for complete nation-wide registration, but if it is a well-controlled subsystem, it can often provide better data, and also measure the completeness of registration in the full system, serve as a testing and experimental laboratory, and set standards of excellence for the entire system.

8/ "Experiments in Vital Registration and Sample Surveys of Births and Deaths in Kenya" (United Nations document E/CN.14/CAS.4/VS/8).

408. Recent attempts and studies involving probability samples of registration areas include: (1) the Sample Registration Scheme (SRS) of births and deaths initiated in 1964-65 in India; 9/ (2) the Population Growth Estimation (PGE) experiment conducted in Pakistan during 1962-1965; 10/ (3) the Survey of Population Change (SPC) from 1964 to 1967 in Thailand; 11/ (4) the Turkish Demographic Survey (TDS) initiated in 1965; 12/ (5) the Liberian Population Growth Survey initiated in 1969; 13/ (6) a sample vital registration experiment in southern Peru in 1958; 14/ and, (7) the Malawi Population Change Survey initiated in 1970. 15/

(iii) Sampling units

409. Ideally, the sample should be a probability sample of areas in which the sampling unit is the primary registration unit or a combination of these units. The units should be chosen with probabilities proportionate to population size.

410. The use of the registration unit as the sampling unit is meant to ensure that the efforts put into establishing the registration system will contribute directly to the provision of good vital statistics under all collection procedures. The sample should be expanded to include additional registration units as resources become sufficient for this purpose.

9/ Sample Registration of Births and Deaths in India, An Experimental Study (Rural: 1964-65), Registrar General, Ministry of Home Affairs, New Delhi, 6 July 1968.

10/ "Vital Rates in East and West Pakistan: Tentative Results from the PGE Experiment", The Pakistan Development Review, vol. IV, Winter, 1964, No. 4, pp. 734-759.

11/ Technique to Measure Population Growth: Survey of Population Change in Thailand (paper presented to the World Population Conference, Belgrade 1965).

12/ The Turkish Demographic Survey: An Outline of Its Goals, Contents, Control Methods and Implementation by Nusret H. Fisek, Yasar Heperkan, Zeki Avaralioglu, and John Rumford. 1st edition, October 1964. School of Public Health, Ankara, Turkey.

13/ Liberian Population Growth Survey, handbook 1969, 1st Edition, October 1969, Department of Planning and Economic Affairs, Liberia.

14/ "Sample Vital Registration Esperiments" by Joseph A. Cavanaugh (paper presented to the International Population Union Conference, New York, 1961).

15/ The Malawi Population Change Survey, unpublished report on a mission to Malawi, 30 September-28 October 1970, by J. G. C. Blacker, Regional Adviser in Demographic Statistics, Economic Commission for Africa.

411. There should be enough registration units in the sample to constitute a sample population large enough to provide estimates of the vital events at an acceptable magnitude of error at the national level and separately for urban and rural areas. A possible alternative version, requiring greater resources but with certain administrative and substantive advantages would be to institute civil registration at the 100 per cent level in urban areas while covering rural areas by means of a smaller sample repeated at regular intervals.

(iv) Organization of a sample registration area scheme

412. In all essential respects, the principles of organization for a sample registration scheme are identical with those proposed in chapter V for a comprehensive civil registration system. Sampling does introduce some variation in detail, however.

413. It is first desirable to enact legislation giving the broad structure required for a comprehensive civil registration system, setting out the duties of the registrar and the provisions for legal documentation, etc. Actual implementation of the legislation can then be effected through regulations under the act. This arrangement will make it possible for all persons who wish to register an event to do so under uniform provisions, though active promotion of registration would be restricted to the areas in the probability sample. The legal arrangements should be flexible enough to permit the introduction of modifications suggested by later experience. For all areas selected in the sample, full-scale registration procedures should be implemented and the registrar should have power to effect legal registration of the events reported.

(v) Duties of the registrar

414. The duties of the registrar in a sample registration system should include all of those required in a comprehensive civil registration system (see para. 309). In addition, the registrar should make special efforts to promote registration by every possible form of publicity, and by personal contacts with traditional leaders in the community and any other persons of status who might by example and influence help others to see the advantages of registration. The registrar should either be "itinerant" himself or send an agent to visit each household as often as is possible, on a continuous basis, for the purpose of inquiring into recent vital events and arranging for registration. Schools can play an important part in the development of the system by instructing pupils in the advantages of registration and establishing some means of liaison which could channel information given by children concerning vital events in their homes through the teacher to the registrar. If it is believed that part-time activities are sufficient for the work of registration, it may be simpler to appoint the teacher as registrar.

(vi) Continuity

415. In order to provide continuity in the supply of data from the system, statistical compilations should be undertaken on a regular basis and on the standards proposed in chapter IV just as in a comprehensive system of registration. The validity of the estimates of vital rates from the data so compiled will, of course, be affected by the size of the sample.

(vii) Events to be registered and their definition

416. Theoretically, all of the vital events set forth in paragraph 38 may be registered in a sample registration scheme. As in a comprehensive system, however, priority should be accorded the registration of live births, deaths, foetal deaths, marriages and divorces. The definitions of these events should be identical with the definitions given in chapter II.

(viii) Topics to be investigated in respect of each vital event and the definitions of these topics

417. Each country must decide, on the basis of its resources, the range of topics to be included. Efforts should be made, within the limits of these resources, to investigate at least as many of the first-priority topics listed in chapter III as pertain to local needs and conditions and also such additional topics as are of special local interest. In the selection of topics the limitations of sampling for geographic detail must, of course, be kept firmly in mind. The definition of each topic should coincide or be at least consistent with those set forth in paragraphs 86-230.

(ix) Population-at-risk

418. If a census or sample survey has recently been taken the population of the sample area at the time of its selection will be known. With this base line, post-censal estimates of population can be constructed on the basis of the births and deaths registered in the area in order to adjust the base-line figures - provided net migration has been minimal.

419. If results of a census or survey are not available, the population-at-risk will need to be estimated. This should preferably be done by means of a census-type investigation yielding not only an estimate of the base population but also a list of every member of the population-at-risk in the sample.

420. Alternatively, a survey could be carried out in a subsample of the sample registration area, and repeated at frequent enough intervals to keep the base figure up to date.

(b) Sample field surveys

421. Not all countries which need to develop vital statistics systems can afford a scientifically designed sample registration system as a forerunner to a comprehensive system, even though registration is acknowledged to be the ultimate goal. Moreover, very often the need for a measure of the population growth rate, or at least for an estimate of crude birth and death rates, is so urgent that a short-cut, interim method of collecting the information must be resorted to. In such cases, information on births and deaths (and on other vital events) can be obtained by interviewing a single household member in a sample of households.

422. The objective in such cases is to inquire of the household regarding events which occurred in that household. This may be done by either a multi-subject survey or a uni-subject survey. Since all household surveys need to obtain

information on the demographic status of the population under study that is, on the number and characteristics of individuals and on the size and composition of households, it would be reasonable to add to these topics those required to describe the dynamics of population, in other words, the incidence of vital events. Especially is this true in areas facing limitations of resources and shortages of trained staff. Here the introduction of a "demographic schedule" into a multi-subject household survey is a particularly fruitful practice.

423. Where the multi-subject survey covers too small a sample to yield statistically reliable vital rates, it is recommended that a uni-subject demographic survey be carried out, instead.

424. Such a uni-subject survey may be undertaken by means of (a) a single-round, wholly retrospective method, (b) a multi-round, comparative or follow-up method, (c) continuous (repeated) observations 16/ 17/ or (d) a combination of these techniques. (For discussions of these techniques, see paras. 434-457.)

425. The schemes for improving registration in a sample of areas in Pakistan, Thailand, India, Turkey, Liberia, Peru and Malawi (see para. 408) all include additional provision for parallel household surveys. Estimates of birth and death rates (and, hence, of population growth rates) obtained from sample field surveys are available for at least 34 countries throughout the world, 26 of which are in Africa, where civil registration is notably deficient. In addition to these large-scale surveys, there are numerous examples of surveys conducted at the subnational level.

426. Sample registration schemes may be associated with sample surveys which, in addition to providing estimates of the vital rates can provide a check of completeness of registration in the sample areas (by matching of events on a one-to-one basis) (see chapter VII, Evaluating a Vital Statistics System).

427. Disadvantages: Despite its apparent simplicity, the field survey method of generating an independent list of births or deaths for the purpose of estimating corresponding rates is, like any other method, subject to many sources of error. The overriding disadvantages are those of any interview survey, namely, dependence on (a) the willingness of the informant to give information, (b) his knowledge of the events in question, and (c) his ability to remember well enough to place the events correctly in time and space. For a discussion of these problems in multi-subject surveys, see Handbook of Household Surveys. 18/

(i) Organization for surveying

428. It seems likely that where surveys are required for the direct estimation of vital rates, for evaluation of the operation of a sample registration scheme, or

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16/ "Continuous" or repeated observations differ in principle from follow-up surveys only in that the former imply more frequent rounds or observations.

17/ An example of methodological interest is the pilot scheme in Senegal described in "Repeated Demographic Observation in a Rural Area in Senegal, Method and First Results", by Pierre Cantrelle (paper presented to the World Population Conference, Belgrade, 1965).

18/ Pp. 20-24.

for providing the base population for estimation of vital rates from a sample registration scheme, the need for such surveys will be more or less continuous. In view of these considerations and of the needs for surveys of manpower, health, etc., it is recommended that a permanent survey organization be set up whenever and wherever resources permit.

(ii) Co-ordination

429. The survey organization may be most effectively located in the central statistical service; but, irrespective of administrative arrangements, it should operate in close co-ordination with the agency or agencies responsible for general statistical integration and for integration of the concepts, definitions, classifications and tabulations employed in the vital statistics system. One of its principal functions should be the application of rigorous sampling standards and interview techniques to the acquisition of data required by interested agencies.

430. Where co-ordination is sufficiently effective, sample surveys designed to provide statistics on vital events and their characteristics may be incorporated into multi-subject surveys. Such broadening of the field of reference can permit wider study of vital events and the interrelations of the economic, social and psychological factors which influence them. However, because of the difficulty in obtaining reliable data, it is not desirable that surveys of vital events be greatly extended in scope.

(iii) Sample design

431. Considerations of flexibility suggest that an area (cluster) sample is the most efficient all-purpose design in the present context, even though it necessitates substantial increases in sample size because of the effects of intra-class correlation. In the case of a sample registration scheme, area (cluster) sampling is necessitated by the fact that the sampling unit must be a registration unit. Different considerations apply in the case of demographic surveys in which vital events are investigated in a sample of households, but even here, the area (cluster) sample is preferred (a) for estimating the rate of population growth in the interval since a previous survey; (b) for evaluation of completeness of coverage in a census or comprehensive or sample registration scheme; and (c) for the operation of a multi-round comparative or follow-up survey. The reasons are the same in each case. First, area sampling is simpler because the listing and sampling operations, and the corresponding training of enumerators and preparation of sectors on sampling for the manuals, is avoided. Second, new households entering the areas can be recorded and households which have become extinct between the two operations can, at least in principle, be taken into account. Moreover, the process yields fringe benefits because the data on households arriving and departing may be compiled as estimates of migration in and out of the sample areas.

432. Whenever estimation of vital rates is involved, the sample size should be large enough to permit estimation of rates at acceptable levels of error, at least for the national area and separately for urban and rural areas.

433. If detailed cross-classifications are contemplated, it will, of course, be necessary to increase sample size accordingly.

(iv) Single-round, fully restrospective sample surveys

434. In surveys of this type, information is recorded on vital events which occurred to members of the sampled household during the interval of time specified in the inquiry. The time-reference of the inquiry should be a fixed period, preferably the 12 months preceding the inquiry.

435. This method of recording is appropriate to the investigation of events other than deaths. For deaths, a modification must be made so as to record deaths, in the reference period, of persons who were household members at the time of their death. Especially in single-round surveys special arrangements must be made to cover deaths in one-person households, which by virtue of the death, disappear from the population.

436. This does not impair the general consistency of the approach with the definition of the household recommended for census purposes, 19/ that is, the question is to be asked of persons who are members of the household at the time of the survey. If the definition of the household is for any reason modified to include persons who were members at some particular time during the past year, but who are not members at the moment of the inquiry, it will be necessary to alter the questioning accordingly. For example, the question on births during the past 12 months should relate also to women who have been removed from the household during this period by death or divorce. However, the question on births and deaths in the household as constituted at the time of the inquiry is the preferred approach (see Topic 4, para. 91 and Topic 6, para. 94).

(v) Multi-round, comparative or follow-up surveys

437. The distinctive feature of follow-up surveys is that information on vital events, and also on migration, is obtained by the process of noting all changes that take place between successive surveys in the composition of households in the areas sampled. 20/

438. The follow-up technique may be combined advantageously with the single-round, fully retrospective method, each acting as a check on the accuracy of the other. The first round of the follow-up survey could then be essentially identical, in content and in definitions with a single-round, fully retrospective survey. While providing the initial enumeration of household members in the sample areas, it could provide a first estimate of the crude rates of birth, death and marriage and also data on lifetime fertility of women.

439. At the second round, which should take place three or six months later, depending on feasibility, in order to permit the easiest calculation of annual estimates, each household member enumerated in the first round should be recorded as either present or absent. In the case of absentees, the record should then

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19/ Principles and Recommendations for the 1970 Population Censuses, paras. 146-147 and 213.

20/ Obviously, the advantages will be neutralized if mobility of household is substantial.

show whether the absentee is (a) temporarily absent; (b) permanently living elsewhere (that is, has emigrated); or (c) now dead. In the case of a death, the event should be used for the subsequent statistical compilations only if the decedent was still a member of the household at the time of his death. If he was not, the presumption is that his death will have been recorded elsewhere. In the case of persons not recorded at the initial enumeration, the record should show whether the newly enumerated person (a) is a temporary visitor; (b) has become a resident of the household (that is, has immigrated); or (c) is a child born in the interval between the survey rounds. Events occurring in the interval to temporary visitors should not be included.

440. If, as recommended, the initial enumeration recorded the marital status of household members, the second round of the survey may also be designed to check into this so that an assessment may be made of the rate of marriage and of changes of marital status during the interval between visits.

441. In each instance in which a birth is recorded, the date and place of birth should be noted; and for each death, the date and place of death. The information on place of death will provide circumstantial evidence that the enumerator has attempted to ascertain whether persons no longer present were dead or had migrated. It will also be useful if a check of death registers is contemplated as an evaluation procedure. Place of birth will provide a check on responses. For immigrants and emigrants, place of previous residence and place of present residence, respectively, should be recorded in order (a) to show as definitely as possible whether migration actually did take place and (b) to permit a tabulation by direction of movement, if that is desired. For operational simplicity, these "places of residence" might be reduced to four categories: (a) elsewhere in the same sample area, (b) elsewhere in the same district, (c) in another district in the same country, (d) abroad.

442. The inventory of births and deaths experienced by household members in the interval since the preceding visit omits those of children born to household members when these children died before the second visit. Detection of such cases requires a retrospective question which should be addressed to all women members of the household. Where any adult woman in the household is reported as having died in the interval between visits, it is necessary to check whether she too may have had a live-born child in the interval, while still a member of the household, and whether the child is dead. Failure to record both births and deaths of such children would lead to understatement of the rates.

443. It is recommended that at each round of a follow-up survey, a summary statement be included showing total live births and total deaths in each household in the last 12 months. This summary will be a reconciliation of (a) replies to retrospective questions and (b) the checking-off process by which household members are accounted for. Its usefulness is indicated by the need to investigate every possible avenue for obtaining correct replies.

444. Provision should be made for enumerating households newly resident in the area, together with the vital events experienced by these households during the past 12 months. 21/ Otherwise, this element of the population will be completely

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21/ This information may be entered in the household summary statement referred to in paragraph 439.

omitted from the survey. Also, special efforts will be required to trace extinct and dispersed households. Deaths in one-person households are a particularly troublesome source of omission. The questioning of neighbours, local officials, and so on is thus an essential element in the follow-up procedure of a survey. 22/

445. If the survey is to continue further, the procedures should be comparable at each later round with those adopted for the second round, with the dates of each visit determining the interval used in the calculation of annual estimates.

446. In designing surveys of the follow-up type, the interval between visits may be as much as 12 months without necessitating any change in the principle outlined above; however, it may be necessary to change the sample size to take account of differences in the number of observations. If the timing of the rounds is not such that the same populations are observed for a total period of 12 months, steps must be taken to ensure that the results are not vitiated by possible seasonal variations in births and deaths. Usually this can be accomplished by staggering the enumeration of the different survey areas over a 12-month period.

(vi) Continuous (repeated) observation

447. This is an extension of the concept of the multi-round or follow-up survey. It consists of a system of "continuous" (repeated) observation in which the enumerator or the registrar visits each household in his area at frequent intervals (every month, if practicable) to record events as closely as possible to the time of their occurrence. The method may be used in connexion with sample surveys or in connexion with a (sample) civil registration scheme. In the latter case the operations of the enumerator or of the itinerant registrar are similar to those of a continuous observation of household members. If this system is independent of the household interviews, the accuracy check gains much in validity.

448. The data to be recorded or registered would in principle be the same as the data on births and deaths collected in the sample survey or entered in the registration record.

(c) Combination of sample registration area and sample field survey techniques

449. Experience in censuses and surveys conducted in many localities over many years has demonstrated that it is extremely difficult, if not impossible, to obtain reliable information about vital events occurring during a given reference period by inquiring about such events in a single retrospective interview. Repeated interviews with the same respondents have been tried as a method of obtaining more reliable results, but there is clear evidence that reliance on such surveys results in significantly underestimating of the number of vital events occurring in the population surveyed. 23/

450. Improved estimates should be possible if information on vital events is collected twice, and independently for the same units of observation, either by replication of the same procedure or by using a different procedure altogether.

22/ At the tabulation stage, and for the calculation of vital rates, a distinction may be made with advantage between households present at each round, households which have immigrated and households which have emigrated.

23/ CENTO Symposium on Demographic Statistics: Karachi, Pakistan, 5-12 November 1968.

This is termed the "dual-record system". The method recommended as the most reliable involves using a sample registration scheme (see paras. 402-420) in combination with a sample survey scheme (see paras. 421-447) and then combining the results by means of one-to-one matching of the events recorded with each method.

451. Theoretically, the process of matching produces four classes of "matches" and "non-matches": (a) those recorded in both the register and the survey; (b) those recorded in the register but not in the survey; (c) those recorded in the survey but not in the register; and finally, (d) a group - of unknown size - not caught by either procedure. Errors of duplication would theoretically be detected either in the matching process itself or as a consequence of it.

452. One advantage of this procedure, in addition to the elimination of errors of duplication, is that it can lead to a qualitative understanding of the sources of distortion in the various sets of records; to an understanding that is, of the extent and nature of misreporting and under-reporting among the various sectors of the population. A further advantage in the present context is that application of the Chandrasekaran-Deming formula to the three classes of events (a), (b) and (c) above permits an estimation of the size of the fourth class (d) and thus affords the possibility of adjusting the recorded number of events in a way that provides an adjusted estimate of the relevant vital event. 24/ The adjustment so provided would also provide a measure of the degree of completeness of the registration and of the field survey reports of events.

453. However, there are a number of difficulties and disadvantages associated with the Chandrasekaran-Deming formula. For one thing, the formula rests on the dubious assumption that omissions from the survey and those from the registration scheme are entirely independent. In addition, the matching operation poses peculiarly intractable problems and will almost certainly involve an additional field exercise to elucidate "doubtful matches". Moreover, the whole procedure is laborious, costly and time-consuming.

454. In view of the difficulties of utilizing this approach, it is recommended that publication of the "best figure", i.e., the total of investigated events derived by matching from a combined sample registration/survey approach, should always be accompanied by (a) the number of matched cases, (b) the number of registered but not surveyed cases and (c) the number of surveyed but not registered cases. And, in addition, it should be stated explicitly that a number of cases may not have been discovered by either method, whether registration or survey.

455. The success of the matching procedure plays such an important role in the combined approach that special efforts should be made to follow up the non-matched cases in the field by whatever means are feasible in order to reduce their number to a minimum. If the number of unmatched events persists at a high level, the methodology and procedure should be re-examined.

24/ "On a Method of Estimating Birth and Death Rates and the Extent of Registration" by C. Chandrasekaran and W. E. Deming in Journal of the American Statistical Association, vol. 44, No. 245, March 1949.

456. Despite the problems of matching events, recent experiments have led to increased emphasis on the statistical usefulness of carrying out two independent operations of registration and of field surveys in order to attain more accurate results.

457. Examples of particular interest are the Population Growth Estimation (PGE) experiment in Pakistan, the Survey of Population Change (SPC) in Thailand and the Demographic Survey in Turkey (TDS), each of which aims particularly at providing reliable estimates of population growth rates for areas within each of the countries, using both the registration method (on a sample basis in Pakistan and Turkey) and the follow-up survey method. 25/ In the Thailand survey, use is made of the normal current registers in the sample areas, whereas in the Pakistan and Turkey surveys, special registrars were appointed for the sample areas. The Indian Sample Registration Scheme also makes use of special registrars, but unlike the others, it does not apply the Chandrasekaran-Deming formula for estimating rates.

B. Processing of vital statistics

458. As the methods of processing vital statistics are the same for those collected from civil registers as for those from sample surveys, no distinction on this basis is made below.

1. Quality control (sample verification)

459. Wherever mass clerical operations are involved, quality control techniques based on sampling are applicable. Hence, quality control or sample verification could be used in connexion with: (a) transcription of statistical reports from civil registers when this is done manually; (b) editing for consistency and completeness of items on reports from both registers and interview surveys; (c) coding of items on reports from registers and surveys; (d) transcribing manually or mechanically to, for example, the compilation record, tally-sheets or punch cards; (e) verification by hand, or machine-checking of correctness of distributions; and (f) computations of rates, ratios and other indices.

2. Tabulations

(a) Advance tabulations

460. Systematic sampling of records from registers may be used to compile advance tabulations of vital statistics for current needs. This procedure is similar to that set forth in paragraph 395 except that a smaller sample will ordinarily suffice, since usually only data for larger populations can be obtained quickly enough to justify such an undertaking. Any results obtained in this way will, of course, be provisional - to be superseded by final tabulations. 26/

25/ "Field Experience in Estimating Population Growth Rates", by Patience Lauriat, Demography, 1967, vol. 4, No. 1.

26/ This is a procedure used in the United States where a 10 per cent sample of deaths is systematically selected each month by each State, transcribed and forwarded to the national office in advance of the regular reports of death for the month in question. Immediately upon receipt at the national level, this sample of deaths is coded, tabulated and analysed especially with respect to selected causes of death. Provisional national mortality data are thus supplied far in advance of the regular tabulations. They are published as the Current Mortality Sample (CMS).

(b) Final tabulations

461. Where the civil registration system is the source of vital statistics, the desired data can sometimes be obtained by processing only a sample of registration records, rather than the whole file. Reference is made above to advance tabulations being made on a sample of records; the proposal here is that the processing of only a sample of records may be used also to produce final results. Such a system could reduce the cost of processing and make data available more promptly. However, the system would seem practicable only at the level of the nation or larger administrative units; for at lower levels it is questionable whether the sample could be sufficiently smaller than the universe as to make the reduction effective, taking into account the geographic detail required and the low incidence of such events as certain causes of death, foetal deaths, and divorces. It is likely that this particular application of sampling would be useful only where the numbers of births and deaths were very large.

(c) Tabulations for special purposes

462. The use of a sample of records for special tabulations needed for research or special programmes (for example, for public health purposes) is related to the record-based surveys mentioned above. Special studies often require more detailed coding of cause of death, of socio-economic characteristics, or of fertility data than can be economically or reliably produced by a routine tabulation programme. Processing of a small sample of records could produce the needed cross-tabulations at a minimum cost and presumably with better quality.

463. If a sample registration or sample field survey system is in operation, this, too, could be utilized to obtain special and complex tabulations not appropriate for inclusion in the national tabulation programme.

VII. EVALUATING A VITAL STATISTICS SYSTEM

A. Types of evaluation techniques

464. Though there are a number of non-statistical aspects of a vital statistics system that should be periodically evaluated, the present chapter is confined to questions of evaluating the reliability of statistical data derived from the system - such as questions of organization, recruitment and training, and adequacy of instructions for recording data.

465. Responsibility for the establishment and execution of methods for critical evaluation of the vital statistics system should be vested in a designated authority.

466. Provision for critical evaluation of the efficiency of all procedures, from the creation of the legal records to the compilation of the statistical publications themselves, is an essential element of a good system of vital statistics. The provision of appropriate methods for evaluating the various facets of the system, and for constant vigilance to see to it that approved methods are applied and that any necessary remedial action is taken, is a primary function of the offices responsible for vital statistics.

467. Techniques for evaluating the completeness and accuracy of vital statistics should constitute a standard part of the vital statistics system and be applied irrespective of whether the data are obtained from civil registration records or collected in (sample) field inquiries.

468. Evaluation of the reliability of vital statistics involves (1) measuring the quantitative accuracy with which vital events are either (a) registered or (b) reported in a survey, and (2) measuring the qualitative accuracy with which the characteristics of the events are reported by the informant and inscribed or recorded by the registrar or interviewer.

469. Errors in the quantitative accuracy or completeness of coverage of vital statistics may arise from under- or over-reporting, with either the registration or the field survey method. In the case of the registration method, the probability is that omissions will far exceed duplications; and, in fact, in most developing countries, registration is frequently grossly deficient, if not altogether lacking. Duplications do actually occur, however, when delayed registrations are made upon request without checking whether the birth was registered earlier. In the case of field surveys, over-reporting of vital events may arise from errors in placing the event correctly in regard to the cut-off point of the time-reference period, and also from double-reporting of individual events due to such factors as the mobility of households. Nevertheless, the over-all tendency is toward omissions rather than duplications; omissions arising from total failure to recall events which occurred some time before the date of the survey. 1/

1/ Recall Lapse in Demographic Inquiries by R. K. Som, Asia Publishing House, Bombay.

470. Detection of errors and assessment of their extent, may be accomplished in two ways which for convenience may be designated as the direct and the indirect methods.

471. The direct method is the more fundamental and refined one. It consists of checking the individual entries of the register or other type of record against corresponding records from an independent source in order to discover any omissions. The method is analogous to a postcensal field check of the population census whereby a set of independent records is produced in such a way as to be considered more accurate than the originals and therefore capable of being used to produce adjustments in the original records. The method is also analogous to the matching of two independent sets of records for estimating parameters from the joint evidence (see para. 450). 2/

472. The indirect method of detecting and possibly assessing the extent of errors consists in (1) scrutinizing for plausibility and consistency the statistical results derived from the records and comparing these for compatibility with corresponding numerical data from another time period or from a similar geographical area and (2) comparing results with corresponding aggregates and rates obtained from an independent source.

473. In principle, one could take the view that the importance of refined measurement techniques varies inversely with the degree of under-registration; that precision is necessary only in those areas where registration is relatively complete, but there is appreciable variation on a geographic or ethnic basis. In practice, however, an effort should always be made to evaluate the reliability of vital statistics. Almost any analysis of vital statistics can make use of the indirect method as this is the method that gives those first rough approximations of accuracy that are so useful in focusing the direct evaluation procedures. Tests based on direct matching are required, in turn, to determine the reasons for under- or over-reporting and the degree of any geographic or ethnic variation; and to do this with enough precision to enable remedial measures to be effectively employed.

1. The role of sampling in evaluating vital statistics

474. Sampling plays a major role in the evaluation of vital statistics data, especially as regards the use of the direct method. Since this method involves the matching of individual records, the advantages of economy through sampling are important in reducing the burden of work. For this matching it is obviously necessary to have two independent sets of records, one of which may be established for a sample of the universe under study. For example, the reports of births and/or deaths in a sample field survey may be matched one-to-one to the records of these same events in the civil registers. The registration system might also

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2/ For additional details on methodology, see: Methods of Estimating Basic Demographic Measures from Incomplete Data; Demographic Yearbook 1961 (United Nations publication, Sales No.: 62.XIII.1), pp. 1-10; Handbook of Population and Housing Census Methods: Vol. V, Methods of evaluating population and housing results, with particular attention to methodology of ad hoc post-enumeration sample field surveys (United Nations publication, will be in press late 1972); Handbook of Vital Statistics Methods.

be built on a sampling basis (i.e. on a sample of registration units). If this is the case, the registration of births and deaths must be comprehensive within each of the units selected, for otherwise the matching process becomes inoperative.

475. Alternatively, a sample drawn from the registers might be matched to other records of the same events, such as those of baptisms or of the issuance of burial permits. Or the register might be used as a frame for the selection of sample households which could be followed back and interviewed in regard to births and deaths, with a check then made as to whether the events reported in the interviews are also recorded in the registers. Other examples of the applications of sampling are included in the sections on evaluating quantitative and qualitative aspects of vital statistics coverage.

476. Sampling, as such, is not employed in the application of the indirect method of checking the reliability of vital statistics because the indirect method depends on the comparison of aggregates and rates. However, because the data reflected in these aggregates and rates may have been collected for a sample of the universe, the indirect method of checking may in that sense be dependent on sampling. When this is the case, the sampling error will have to be taken into account in judging the acceptability of the estimates of the vital rates.

2. Application of evaluation techniques

477. Since applicability of the evaluation measures can be demonstrated most effectively in terms of live births and deaths, the methods described below will be set forth mainly in terms of those two events. The evaluation of the completeness of the marriage records is complicated by the fact that only legal marriages are recorded in the civil registers. In the developing countries, it will frequently be evident from census results on marital status that many more persons report themselves as "married", than could have resulted solely from the number of legally recorded marriages. The excess consists in part of persons living in consensual or common law unions, of whatever degree of permanence. In this connexion, it is interesting to note that women often exceed men in the numbers recorded as "married" and "consensually married", perhaps because of a tendency amongst women who are in fact divorced, widowed or separated to report themselves as "married", while amongst similarly situated males, there is a tendency for the reports to show marital status as "single". Low marriage rates are consistent with low proportions of the population reported as "married" (conversely with high percentages reported as "single"). Under these circumstances, "completeness" in the sense used here is not applicable to marriage records. All that can be done is to verify that the calculated marriage rates are consistent with low proportions reported as "married" in the census, and with corresponding levels of illegitimacy. The discussion of the evaluation methods below is directed to birth, death and marriage reports. However, these evaluation methods can be extended to reports on other vital events, namely, foetal deaths, divorces, adoptions, legitimations, recognitions, annulments and legal separations.

478. The techniques of evaluation are described in terms of quantitative (coverage) errors and qualitative (content) errors separately. However, certain tests of coverage may also act as tests of content as for example, in the testing of completeness of birth registration, where errors may be detected in the statements of date of birth (age) of young children reported in censuses or surveys.

B. Quantitative (coverage) errors

Completeness of registration and of reporting of vital events in a survey

479. The recommended evaluation technique is the direct matching of individual events in two or more independent sets of records. This method has already been referred to in paragraph 471 where the question of adjusting estimates of vital rates was discussed. The adjustment technique depends on the availability of the four categories of matched events: (a) events recorded in both register and survey; (b) events recorded in register but omitted from survey; (c) events reported in survey but omitted from register; (d) a group of unknown size which has escaped being listed in either the register or the survey, and the application thereto of the Chandrasekaran-Deming formula (para. 452). The experience of Pakistan, Thailand and Turkey, mentioned in paragraph 457, in matching events reported in a survey to events that were registered demonstrates the usefulness of the matching process for evaluating the completeness of reports of births and deaths as well as for correcting estimated rates.

480. A variation of considerable interest is the use of the population census to generate a set of "infant cards", one for each child born in a specified period before the census, which can be checked back to the birth registers to establish the sets of "matched" events required for evaluating the completeness of these registers. Similar procedures may be used in respect of deaths. The use of the census to obtain one of the required lists of events to be matched, has occurred in a number of countries: the United States, Yugoslavia, Ceylon and India, 3/ for example.

481. A further variation is the matching of events registered or reported in a survey of records, such as those for hospitals, school enrolment, baptisms or burials. Even where such lists are only partially complete, they can reveal omissions or duplications.

482. Where interview surveys of a sample of households have been utilized for collecting vital statistics, it is a matter of special importance to develop adequate methods for direct evaluation of the completeness or accuracy of the data obtained.

483. Where a registration system is in operation, even if it covers only part of the country or if it functions but imperfectly, experience indicates that direct checks undertaken by matching registration lists with household survey returns, along the general methodological lines indicated above, can be useful in evaluating the survey data and are essential for making reliable estimates of birth and death rates.

484. Where registration records are lacking or completely inadequate for the purpose, a sample field check of the main survey will have to be undertaken. One possibility is a re-survey of a subsample of the original units, which could be merely a replication of the original survey. Another possibility is the use of interpenetrating networks of subsamples, a method analogous to the post-censal field check of a census.

485. Despite the emphasis on the direct method of evaluating the completeness of reporting of vital data, the indirect method should also be employed, both in

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3/ Handbook of Vital Statistics Methods, pp. 205-207.

regard to registration data and in regard to events reported in field surveys. In fact, the evaluation checks frequently amount to a check of mutual consistency in these two types of data. Some of the applications of the indirect checks are:

(i) Comparison of the number of births and deaths registered in a given period with the number registered in another period. Marked fluctuations would suggest a need to investigate sources of error in the data.

(ii) Comparison of the total number of persons enumerated at two successive censuses. If the two censuses were reliable, and if the vital and migration records were complete, the total intercensal increase of population should equal the balance of intercensal births and immigrants as against intercensal deaths and emigrants (the "balancing equation"). 4/ In the developing countries, these conditions are usually not fulfilled, but, where defects in migration statistics are unimportant because migration itself is not a factor of importance in population change, the total intercensal increase may be sufficiently accurate to suggest the order of the total increase, and may thus be compared with the balance of births and deaths (a) from registered events and (b) as estimated by the application of a rate of natural growth derived from sample surveys. Though the comparison may not be expected to yield any precise measure of error, it may be very useful in promoting efforts to increase completeness of coverage of vital events.

(iii) Comparison of the annual number of births registered or reported in a survey in a particular area with the number of children of corresponding age enumerated in a census or survey in a given year. This reveals incompleteness of registration (or errors of content, such as, in this instance, misstatements of age). However, this technique is of limited use in developing countries because of underenumeration of infants and children and misstatements of age. This last comparison is of course more precise if deaths by age have been taken into account before comparing the numbers of the events registered with the numbers enumerated. In this case, lack of consistency between the two sets of data may reflect errors in the numbers of births or deaths, as well as in statements of age.

(iv) In evaluating the completeness of reporting of births and deaths in field surveys, indications of omissions (or the reverse), can be obtained from a cross-classification of the reported events by date of occurrence and date of inquiry. Because this classification may reveal a tendency for the number of reported events to decrease as the time interval extends (which is more typical on present evidence than the reverse tendency), the evaluation process may need to be

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4/ See Methods of Appraisal of Quality of Basic Data for Population Estimates (United Nations publication, Sales No.: 56.XIII.2) for illustrations of the use of the balancing equation.

expanded to include an adjustment based on the assumption that the "true" rate should approximate that calculated on the events reported at the time nearest to the date of the inquiry, when the recall error would be minimal. 5/

(v) Comparison of the crude rates of birth and death, or of the rate of natural increase for different periods, with rates observed in similar populations may suggest that the data are unreliable. If there are wide fluctuations from year to year, the data are suspect, and so also are they if the comparison suggests inconsistency with the known characteristics of the population.

(vi) Examination of the sex ratio in the total population will plainly reveal gross departures from the generally prevalent balance between the sexes at birth, whereby males outnumber females.

(vii) The comparison of age-specific fertility and mortality rates with rates observed in populations of similar type, and with rates in previous periods in the same country, may suggest the presence of errors of statement embodied in both the numerators and the denominators.

(viii) Estimates of mortality derived from survivorship ratios from age-group to age-group at two succeeding censuses may also be used to evaluate the accuracy of registration data on total deaths and deaths by age. It should be emphasized that this method of evaluating the accuracy of registration data on total deaths and deaths by age can only yield reliable results if sufficiently accurate data on external migration are available, or if external migration is of only negligible importance.

(ix) Comparison of the reports of current fertility (cumulated by successive age-groups) in a census or survey may be compared with reports of lifetime fertility of women, and after the evaluation of sources of errors in the base population data and in fertility reports, may be manipulated to yield a more reliable estimate of the birth rate than could be obtained from either set of data alone - a process wherein evaluation and estimation are inextricably interwoven 6/ and where the estimated birth rate can act as a check of completeness of registration data.

486. Similarly, estimates of mortality derived from statements of numbers of children born alive and still surviving may be used to check the registration data on deaths.

C. Qualitative (content) errors

487. Non-sampling errors (such as errors arising from ignorance or forgetfulness of the facts, refusal to reply to a question, failure to understand a question

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5/ Technical Paper on Non-Sampling Errors and Biases in Retrospective Demographic Inquiries (United Nations document E/CN.14/CAS.4/VS/3).

6/ See Methods of Estimating Basic Demographic Measures from Incomplete Data.

or failure of the interviewer or registrar to put the question clearly or to record its answer properly) may distort or make unreliable the distribution of vital statistics according to characteristics involved. This poses one of the most important problems in the use of vital statistics.

488. Some of the elements of vital statistics that require evaluation for quality of reporting are those connected with the fact of the event or the characteristics of the person involved: sex, age, marital status, cause of death, place of residence, place of birth, place of death, occupation, industry, for example.

1. Response errors

489. The main method of evaluating correctness of response is to match a sample of vital records with an independently generated set with respect to topics included in both sources such as age, marital status, and place of residence. This can be done through (a) record matches, (b) resurveying original informants, or (c) surveying substitute informants. 7/ An example of the utilization of this technique may be found in the United Kingdom's analysis of the accuracy of statements of age in the 1951 census of population, the methodology and results of which are published in the General Report. 8/ In that study an attempt was made to match selected information, of which one topic was age, for each of 9,864 deaths registered between 1 and 7 May 1951 to that on schedules from the 1 April 1951 census. The results showed that age statements at registration of death had a high degree of reliability.

490. A United States study designed primarily to evaluate the comparability of reports on occupation in a sample of vital records with those in the 1950 census 9/ also compared information on age and found that, despite the difficulty of identifying all the persons involved in the sample, the method appeared to yield useful results. The same study showed high rates of identity for marital status.

491. Direct evaluation of the accuracy of cause-of-death statements 10/ may be undertaken by comparing a sample of death certificates with autopsy records. Similarly, official records of accidents, suicides and homicides can be used as checks on the registration of deaths from these three causes. Both of these techniques were used in an evaluation of cause-of-death statements conducted under the auspices of the Pan American Health Organization in 10 cities of the Americas. 11/

7/ Design of Surveys Linked to Death Records, pp. 20-23.

8/ Census 1951, England and Wales; General Report, General Register Office, London; Her Majesty's Stationery Office, 1958, pp. 41-43.

9/ The Comparability of Reports on Occupation from Vital Records and the 1950 Census. Vital Statistics - Special Reports, Vol. 53, No. 1, June 1961. U.S. Department of Health, Education and Welfare, Washington 25, D.C., pp. 22-24.

10/ The Studies on the Accuracy and Comparability of Statistics on Causes of Death (WHO document EURO-215.1/16).

11/ Patterns of Urban Mortality.

2. Coding errors

492. The amount of divergence in coding practices concerning cause of death can be evaluated by having different groups of coders code the same set of death reports. One of the first such tests on an international basis took place in 1934, when a sample of 1,073 certificates of death which occurred in the United States during 1927 from "causes associated with pregnancy", were sent to 24 other countries with a request that the cause shown be assigned to puerperal or non-puerperal causes as appropriate. 12/ Sixteen countries replied to the request, and the results revealed a substantial disagreement in the assignments.

493. A similar investigation on a broader scale was carried out in preparation for the 1929 revision of the International List of Causes of Death. At the request of the Commission for the Revision, the U.S. Bureau of the Census submitted, in June of 1935, a set of 1,032 cases of death, each containing from two to five separate causes, to a number of countries for coding of the primary cause of death. The returns showed considerable differences in the classification rules followed by the various countries in 1935. 13/

494. An inquiry of the same type, carried out in 1961, under the auspices of the World Health Organization Centre for Classification of Disease, London, England, is of special interest. 14/ This was a test of the interpretation of coding rules at the local level. It was arranged for the Canadian Dominion Bureau of Statistics, the United Kingdom General Register Office and the United States National Office of Vital Statistics to code the cause of death on three random samples of 2,000 death certificates each. Out of the 6,000 coding units, there were 390 for which the coding was not unanimous. About half of these resulted from uncertainty as to which condition the certifier regarded as the underlying cause.

495. Though each of these examples is of a comparison made at the international level, this method of checking for coding errors by having different groups of coders code the same set of reports can, of course, be applied with equal value at the national level for detecting and evaluating the significance and origin of coding error at the subnational level.

12/ Comparability of Maternal Mortality Rates in the United States and Certain Foreign Countries: a study of the effects of variations in assignment procedures, definitions of live births and completeness of birth registration by Elizabeth C. Tandy. Department of Labour. Children's Bureau. Publication No. 229. Gov. Print. Off., Washington, 1935.

13/ "Classification of Joint Causes of Death." Vital Statistics - Special Reports. Vol. 5, No. 47.

14/ Factors Influencing the Comparability of Mortality Statistics by H. G. Corbett, European Technical Conference on Mortality Statistics, Asnières-sur-Oise, 23-28 October 1961 (Working Paper EURO-200/8).

GLOSSARY OF TERMS

ANALYSIS (STATISTICAL)	The examination of data by the statistical method to distinguish the component parts or elements, to investigate their nature and relation to each other and to the whole, and to interpret any possible quantitative or causal relations in terms of the problem under study.
AREA SAMPLE	A type of sample in which the elementary units are individual geographic areas. The segments cover the entire area to be included in the survey and are often clusters of the units of analysis, e.g., clusters of villages or housing units. Each unit of analysis must be associated with one and only one such segment.
ASSEMBLING	The process of gathering or bringing together statistics compiled on a decentralized basis.
CIVIL REGISTRATION	The continuous, permanent, compulsory recording of the occurrence and characteristics of vital events as defined in paragraph 46, and as provided through a decree or regulation, in accordance with the legal requirements of the country.
CLASSIFICATION	The systematic arrangement (sorting) of units into mutually exclusive categories or classes of a scheme established according to some specific characteristic of the unit.
COLLECTION	The process of gathering individual reports on vital events for the purpose of compiling statistics from them.
COMPILATION	The process of condensing of information by classifying and tabulating statistical data into various categories or classes with the object of producing vital statistics according to a predetermined programme.
CONSOLIDATION	The process of combining data compiled by different agents.
CONTINUOUS (REPEATED) OBSERVATION	An extension of the multi-round or follow-up survey. It consists of a system of observation in which the enumerators or registrars visit each household in their areas at frequent intervals (every month, if practicable to record events as closely as possible to the time of their occurrence.
CONVENTIONAL VITAL REGISTRATION SYSTEM	See CIVIL REGISTRATION

DATA PROCESSING — A general term for all operations such as editing, coding, and tabulation carried out on data according to precise rules of procedure. Frequently used in a more limited sense to refer to the use of electronic computer equipment for such operations.

DISTRIBUTION — The process of disseminating statistics among consumers, usually in the form of published documents.

DUAL-RECORD SYSTEM — A system using the simultaneous collection of vital events by two collecting systems which, ideally, are independent of each other. The method recommended as the most reliable involves using a sample registration scheme (see paras. 402-420) and a sample survey scheme (see paras. 421-427) and then matching the events thus collected with each other.

ENUMERATION — Process of identifying, counting and listing the elements under consideration, e.g., of persons in the group subject to a given event or the occurrences of births and deaths. An enumeration can be either complete - as in a census - or partial - as in a sample survey.

ENUMERATOR — Survey personnel charged with carrying out that part of an enumeration consisting of the counting and listing of people or assisting respondents in answering the questions and in completing the questionnaire.

FOLLOW-UP SURVEY — A type of survey in which information on vital events is obtained by the process of noting the changes in the composition of households that have taken place between successive enumerations.

INTERVIEWER — See ENUMERATOR

MULTI-ROUND SURVEY — See SINGLE-ROUND SURVEY

PRESENTATION — Making statistics available, through publication or other means of dissemination.

PROBABILITY SAMPLE — A sample selected by a method based on theory of probability; that is, by a method involving knowledge of the likelihood of any unit's being selected. The term, "random sampling", is sometimes used in the sense of probability sampling.

PURPOSIVE SAMPLE — A sample in which the individual units are selected according to some criterion other than that of strict probability. Whatever the reasons for this procedure (such as the unavailability of a portion of the universe, or for administrative convenience), any estimates calculated from this sample can be presumed to pertain only to the sampled population itself. Thus in establishing a sample registration system a purposive sample may be resorted to when the selection of a probability sample is not feasible.

RECORDING (STATISTICAL)	The inscription, for statistical purposes, of specified items of information with respect to a registered event.
REGISTER (NOUN)	An official collection, list, or file of records arranged according to some filing scheme.
REGISTER (VERB)	See REGISTRATION
REGISTRAR	The official authorized to register the occurrence of a vital event and to record the required details concerning it.
REGISTRATION	The legal recording with the officials authorized for this purpose, of the occurrence of an event, together with certain identifying or descriptive characteristics concerning it.
REGISTRATION METHOD	The continuous, permanent, and compulsory recording of the occurrence and characteristics of vital events, primarily for their value as legal documents and secondarily for their usefulness as a source of statistics.
REGISTRATION RECORD	The legal document which both attests to the occurrence of a vital event and contains information on certain characteristics of that event.
REGISTRATION STATISTICS	See VITAL STATISTICS
REPORT, STATISTICAL	The record containing the items of information concerning an individual vital event.
REPORTING, STATISTICAL	The transmission of statistical reports on vital events to the agency responsible for compilation of statistics on these events.
RETROSPECTIVE SURVEY	A type of survey containing retrospective question(s), relating to recalling the occurrence of vital events which occurred during a specified period preceding the date of interview or inquiry.
SAMPLE DESIGN	A statement of the steps taken in selecting a sample, including a description of the method of estimation.
SAMPLE FIELD SURVEY	The enumeration of a sample selected from an aggregate of units, usually persons or households, in order to draw conclusions about the whole.
SAMPLING	The process of selecting a number of cases from all the cases in a particular group or universe.

SAMPLING UNIT	One of the units into which an aggregate is divided for the purpose of sampling, each unit being regarded as individual and indivisible when the selection is made. Such units may be defined on some natural basis, such as a household or a person, or on some arbitrary basis, such as areas defined by co-ordinates on a map.
SINGLE-ROUND SURVEY	A survey taken once only, as contrasted with a multi-round survey which consists of several survey waves taken at successive points in time.
TABULATION	The counting of units in each category of a specific classification scheme and the systematic arrangement (seriation) of the results in such tabular form as will serve the needs of the investigation.
UNIVERSE	The total or aggregate of all possible items of the class under consideration; the entire group of items from which a sample is taken, e.g., the total population of a country.
VITAL EVENT	A live birth, death, foetal death, marriage, divorce, adoption, legitimation of birth, recognition of parenthood, annulment of marriage, or legal separation.
VITAL RECORD	See REGISTRATION RECORD
VITAL STATISTICS	Information, systematically collected and compiled in numerical form, relating to or derived from records of vital events.
VITAL REGISTRATION SYSTEM	See CIVIL REGISTRATION

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