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Vital Statistics Systems
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Handbook on
Civil Registration and
Vital Statistics Systems
Policies and Protocols
for the Release and Archiving
of Individual Records

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NOTE

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Preface

The present Handbook on Policies and Protocols for the Release and Archiving of Individual Records in Civil Registration and Vital Statistics Systems is a comprehensive guide to assist countries in designing policies to protect the confidentiality of individual information contained in vital records and related statistical reports. It also offers alternative methods for permanently storing and protecting vital records from the many hazards to which they are exposed because of their daily handling and the passing of time. The Manual has been prepared as part of the International Programme for Accelerating the Improvement of Vital Statistics and Civil Registration Systems.

The International Programme, which was designed by the United Nations Statistics Division, the United Nations Population Fund, the World Health Organization, and the International Institute for Vital Registration and Statistics, was endorsed by the Statistical Commission at its twenty-fifth and twenty-sixth sessions, in 1989 and 1991. It is being implemented in phases during the 1990s by the United Nations Statistics Division, which is the focal point for the Programme. Financial support has been provided mainly by the United Nations Population Fund (UNFPA), with the cooperation of the economic and regional commissions of the United Nations Secretariat and the UNFPA country support teams. The Programme aims to encourage developing countries to undertake long-term self-sustaining programmes of reform to improve their civil registration and vital statistics systems. The emphasis of the Programme is on national efforts and commitment. With improvement, those systems will become the foundation of a legal system for establishing the rights and privileges of individuals and a source of continuous vital statistics.

A vital part of the Programme has been the conduct of five workshops in different regions of the world between 1991 and 1995.¹ In continuation of the Programme, the United Nations Statistics Division has prepared the five-part series Handbooks on Civil Registration and Vital Statistics Systems to assist developing countries in strengthening their civil registration and vital statistics systems, comprising:

- (a) Handbook on the Management, Operation and Maintenance of Civil Registration and Vital Statistics Systems;
- (b) Handbook on the Preparation of a Legal Framework for Civil Registration and Vital Statistics Systems;
- (c) Handbook on Developing Information, Education and Communication for Effective Civil Registration and Vital Statistics Systems;
- (d) Handbook on the Computerization of Civil Registration and Vital Statistics Systems;
- (e) The present Handbook.

A civil registration system is the basis for the documentation of facts associated with vital events, such as births, deaths, marriages and divorces. The basic facts about each vital event are of importance to the individuals involved as well as to their Governments and other organizations in their society. In addition, vital statistics derived from the aggregation of individual records provide insights into various health, demographic and social phenomena occurring in populations and subgroups of the population. As a consequence of the importance of vital records and the vital statistics based on

them, there has been in recent years an increasing interest in adding more items to the records to assist in the analysis and interpretation of data. In many countries, civil registration documents are no longer seen as simple descriptions of vital events - descriptions of "who", "where" and "when". In addition, health-related items are commonly added to birth records or to additional statistical reports completed in conjunction with the birth record. Such health-related items typically include measures of birth weight, gestational age, age of parents, congenital malformations noted at birth etc. Similarly, in collecting death records countries are no longer satisfied with establishing the fact of death for an individual; rather, countries wish to know not only the disease or injury causing the death but also health hazards or lifestyles, such as smoking or obesity, which may have caused or contributed to the cause of death. Such information is of a personal nature, and other vital records, such as marriage or divorce records, may also contain information of a personal nature.

In order to protect the privacy of individuals and at the same time maximize the completeness and accuracy of reported information, Chapter I of the present Handbook contains policies and protocols that can be adopted by the concerned authorities for civil registration and vital statistics systems for implementation by registrars and other personnel involved. Only by ensuring that information on registration documents will not be released to others except under specified conditions can the public be expected to register vital events and to supply complete and accurate information. On the other hand, a strict policy of non-disclosure except to the parties to a vital event would preclude important research which is designed to benefit society. A reasonable balance between the protection of privacy and enhanced use of information for the betterment of the population is needed.

Closely related to issues of access to data and confidentiality of personal information is the question of the storage and preservation of civil registration documents. Because of the value to individuals, society, Governments and researchers, civil registration documents need to be protected from such hazards as loss or destruction but at the same time need to be readily available to furnish copies for authorized uses. This suggests the establishment of back-up copies of records to be stored in a safe location. The back-up copies need to be as closely protected from unauthorized disclosures of personal information as are the original records. Chapter II of the present Handbook also provides alternatives for the storage and archiving of civil registration documents for preservation and replacement purposes, and for the provision of confidentiality whether a document is an original or a back-up copy.

The present Handbook, the fifth in the above-mentioned series, was prepared by the United Nations Statistics Division with the assistance of Mr. Robert A. Israel, former Associate Director for International Statistics of the National Center for Health Statistics, United States Public Health Service, and a Consultant for the Handbook.

The present Handbook, along with the other four Handbooks of the International Programme, complement the Handbook of Vital Statistics Systems and Methods, volume I, Legal, Organizational and Technical Aspects,² and volume II, Review of National Practices,³ and the Principles and Recommendations for a Vital Statistics System.⁴ All provide the framework for the organization, management, operation and maintenance of effective civil registration and vital statistics systems, in terms of reliability, completeness and timeliness; it is recommended that each of them be consulted.

Notes

¹ Workshops on strategies for accelerating the improvement of civil registration and vital statistics systems were held at Buenos Aires (1991), Damascus (1993), Beijing (1993), Addis Ababa (1994) and Rabat (1995).

² United Nations publication, Sales No. E.91.XVII.5.

³ United Nation publication, Sales No. E.84.XVII.11.

⁴ United Nations publication, Sales No. E.73.XVII.9.

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INTRODUCTION

1. A civil registration and vital statistics system serves many needs. The registration of vital events, namely the recording of the facts associated with live births, deaths, foetal deaths, marriages, divorces and related occurrences, is important enough to justify governmental requirements for a mandatory system. The establishment of an orderly process for the creation of reliable records of vital events is of great value both to Government and to its citizens and non-citizen residents. For individuals, vital records provide legal proof of identity, civil status, age and citizenship, upon which a variety of rights depend.

2. Collectively, the vital statistics derived from the aggregation of individual records provides the tools for the demographic analyses needed for economic and social planning and development, including rates and trends of population growth and distribution. The updating of census data in inter-censal years or the maintenance of an accurate and effective population register are dependent upon the availability of vital statistics data. However, in addition to the importance of vital records to individuals and the essential application of vital statistics data for a wide variety of official uses, there are other important uses of registration data for scientific purposes. Those applications, usually in the fields of demography and public health, are dependent on the information collected through the civil registration system. To develop alternate data-collection systems to provide needed information on such topics as fertility, infant mortality, overall mortality, life expectancy and the impact of specific acute or chronic diseases would be impractical to say the least. Especially because of those scientific research applications, certain data items of a personal nature which go beyond the basic requirements of civil registration may be included on registration documents, such as birth and death certificates, or on individual statistical reports which are adjuncts to those records. For the purposes of the present Handbook, no distinction is made between items of information appearing on a registration document or on an associated statistical report if the latter is a separate form from the legal record. This is because it is usually not possible for informants to make a distinction in their own minds about which items of data are on each document. In order to encourage the public to comply with registration requirements and provide accurate responses to each required data item, it is necessary to allay their concerns about providing sensitive and personal data. Informants providing information to the registration system should be assured that such data will be treated in a confidential manner and will not be disclosed to unauthorized persons in any way that would identify and embarrass an individual. However, a very strict policy of preventing the use of vital records and any related statistical reports for other than official purposes would hinder scientific use of that information.

3. The purpose of the present Handbook is to provide guidance to those who design and carry out the functions of civil registration and vital statistics regarding the importance of assuring confidentiality, including some necessary procedures for preserving the confidential information once it is collected. At the same time, guidelines are presented which would permit reasonable use of identifiable and confidential data for statistical and research purposes in addition to the legal and administrative uses for which the system was primarily designed.

4. Chapter II of the present Handbook provides guidelines for the long-term storage of vital records to preserve their utility as legal documents over time, to enhance their long-term research value and to provide back-up to working copies in case of disaster or other loss of original records.

I. RECOMMENDED POLICIES/PROTOCOLS GOVERNING THE RELEASE OF
INDIVIDUAL INFORMATION ON VITAL RECORDS FOR RESEARCH AND
STATISTICAL USES

A. Introduction

1. Characteristics and uses of vital records and vital statistics

(a) Uses of vital records

5. Vital records are the records of events recorded as part of a civil registration system. They include such events as live births, deaths, foetal deaths, marriages, divorces and other related occurrences, such as adoptions and legitimations. Civil registration systems are established by law to meet the specific needs of Governments and of the individuals subject to the jurisdiction of the civil registration law. Those needs are complex and entail many purposes, but collectively the satisfaction of those needs forms the justification for the registration system.

6. The records generated by the requirements of the civil registration process have two main kinds of uses. First, they have importance as legal records documenting the facts surrounding each registered vital event. In that sense, each vital record has an intrinsic importance of its own. Second, the records may be aggregated to form a body of vital statistics which, collectively, convey important information about the persons described in the statistics in summary form.

7. For individuals, civil registration records of birth supply legal proof of identity and civil status, including name, age, parentage, place of birth, nationality and legitimacy. Those records in turn affect a wide variety of rights to which an individual may be entitled, especially rights dependent on age, citizenship, or ancestry for inheritance purposes. Death records provide legal evidence relevant to claims to inheritance of property, insurance benefits and the legal right of a spouse to remarry. Marriage and divorce records are essential for establishing entitlements for tax deductions, inheritance rights, alimony and the right to remarry. The protective value to individuals of birth, marriage, and divorce records has been officially endorsed by the United Nations.

8. Records documenting individual vital events serve many administrative and governmental purposes. Birth records facilitate public health activities, such as post-natal care of mother and infant, infant and child immunization, and infant feeding programmes. Death records are also used to identify specific infectious diseases requiring public health follow-up, and are frequently used to administratively purge deceased persons from files of registered voters, disease case registers, tax registers, military service files etc. Marriage and divorce records are used to protect the rights of families and children, and are also used to modify or clear files for programmes in which marital status is a determinant for participation.

9. For those countries maintaining a population register, official records of vital events, such as births, deaths, marriages, divorces, annulments, adoptions and legitimations, are required elements for keeping the register current and accurate.

10. There are a number of scientific uses for individual vital records. They may be used to provide documented data, such as birth weight or gestational age,

for longitudinal studies of cohorts of infants, or may provide cases of persons dying of specific diseases for retrospective investigations into health habits prior to death.

(b) Uses of vital statistics

11. The aggregation of information taken from individual civil registration documents produces a body of summary data or vital statistics. The statistics are used in many ways to depict selected characteristics of the population from which they were derived. The data are essential for measuring levels and trends of population size, structure and geographic distribution. In combination with periodic census data, population projections based on those statistics are an essential component of the planning process for economic and social development.

12. Equally important are the uses of vital statistics for public health and medical research. Trends in mortality by age, sex and cause of death are key indicators of health and disease in a population. Information about the relative impact of specific diseases on mortality can serve to direct priorities for the prevention, treatment or research for those conditions. Data about live births, foetal deaths and infant deaths are essential for programmes of prenatal and post-natal care of women, and for infant survival and growth.

13. Vital statistics are used for administrative planning in other areas, such as housing, education, social security and insurance. Planning for production of consumer goods and services often takes vital statistics data into consideration.

14. Vital statistics are important at the international level for providing tools for evaluation of differences between countries and regions of the world, and for monitoring changes in many demographic characteristics that reflect changes in social, economic and political conditions.

(c) Characteristics of vital data

15. By their very nature, vital data consist of items which identify people, and are in many cases personal in nature. Birth records contain details not only about the newborn but about the parents as well. Death records provide personal particulars about the decedent and surviving spouse, if any. Marriage and divorce records also contain personal facts about each party, including their previous marital history.

16. Vital records are legal documents that are not only of value and use at the time of the vital event but are preserved and used over long periods of time. They must be presented to others for a wide variety of uses, such as proof of age for school entry purposes, proof of place of birth for passport applications, applications for permission to marry or divorce and claiming inheritance rights and benefits.

17. The knowledge that those records will be reviewed by others may influence the way the supplier of the information (informant) provides the data. Potentially embarrassing information, such as legitimacy status on a birth record or cause of death on a death record, may distort or bias the way data are provided to the system. Public access to files of vital records, if permitted, also may significantly affect the accuracy and completeness of vital data. In some jurisdictions, civil registration files are open to the public, while in others there are restrictions on who may see the records and obtain copies of them.

2. Protecting confidentiality

18. Protecting the confidentiality of vital records has three purposes:

- (a) Protecting the privacy of individuals;
- (b) Improving the accuracy and completeness of data;
- (c) Enhancing research based on civil registration documents.

19. The extent to which the public understands the uses to be made of their records and their level of comfort in supplying personal and confidential data has a direct impact on the accuracy and completeness of the information in the system. With public understanding and trust of the confidentiality afforded the records, specific demographic and medical items for research purposes may be collected as part of the registration system in an efficient and less expensive process than would otherwise be the case. However, it must be kept in mind that a civil registration system is primarily a legal system for the establishment of basic facts about vital events. If confidentiality provisions are absent or are misunderstood by the public, the required data will be less reliable and any additional use of the system for research purposes is likely to result in underregistration, missing data and poor overall quality of data.

20. Protecting the confidentiality of vital data is a complex process which raises many related issues, including:

- (a) Legal requirements;
- (b) Employees' responsibilities;
- (c) Assurances of confidentiality given to registrants and/or informants;
- (d) Treatment of requests for information or copies of documents;
- (e) Treatment of vital data by institutions which have data-sharing agreements with the civil registration system, such as the Ministry of Health and national statistical organization;
- (f) Physical protection of records;
- (g) Permissible disclosures;
- (h) Unintentional disclosures through published vital statistics data;
- (i) Potential disclosures through release of computer files for research purposes;
- (j) Potential interception of individual information from vital records during shipping or on-line transmission between local registration offices and the Office of the Registrar General.

The above-mentioned issues are discussed in sections B to F below.

B. Legal and administrative foundations for assurances of confidentiality

21. According to the Principles and Recommendations for a Vital Statistics System,¹ the confidentiality of personal information in registration records

should be safeguarded in so far as is consistent with the use of those records for administrative and statistical purposes, and the statistical reports of registered events should be opened to the widest possible legitimate use consistent with the needs for confidentiality as determined by each country. That 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 those data for statistical purposes not be unduly limited.

22. In order to obtain complete and accurate information about each vital event, the providers of the data should be assured that any identifiable facts will be disclosed only to those having a legitimate right. Such assurances, before being given, must take into consideration several types of potential uses of the information. What legal uses are to be made of each kind of vital record, and which items are of legal pertinence and must appear on certified or public copies of records? Which items are collected only for research or public health purposes, and which have both legal and research importance? Who will have access to the files of registration documents? Will data analyses be carried out only by government employees or also by outside users, such as university researchers? Only when answers to such questions are known can the scope of any assurance of confidentiality be understood and adequately explained to the public.

23. The benefits of confidentiality to the individual are obvious. If sensitive or potentially embarrassing information is required, the registrant can be assured that the information will not become widely known. Without confidentiality protections in place and assurances to that effect given to the public, those who are required to provide information about vital events may feel threatened and suppress or falsify important information. Confidentiality of a civil registration record is essential for the protection of individual privacy, a basic human right.

24. The benefit of confidentiality accruing to registration and vital statistics systems is the improvement of the completeness and quality of the reported information. The assurance of privacy to persons and institutions who must report personal and sensitive information encourages complete and truthful responses. Any suspicion on the part of an informant that the information to be supplied will become widely known and perhaps used for purposes other than the original intent will in many cases be sufficient to cause the informant to hide or distort the facts, or not to report the event at all.

25. Promises to provide confidentiality must not be given lightly; there must be an enforceable basis for any confidentiality assurances. For the public to rely on the word of a registration official without a legal justification is not sufficient. Courts in many countries have overturned operational confidentiality provisions of registration systems when not based on law or formal government regulation.

26. Confidentiality laws or regulations should provide guidance about the types of uses to be made of records, what kinds of access to identifying information is permissible, who should have access and under what circumstances. The responsibility for implementing and enforcing the law and regulations should be vested in the most senior official of the civil registration system, e.g., the Registrar General. The provisions should be drawn in a way that allows and encourages legitimate use of vital records for research purposes but at the same time prevents public disclosure of personal and sensitive information. It is

important to recognize that to carry out a research project, it may be necessary for project staff to have access to individual records and their full content, but it should not be necessary for identifying information to appear in the statistical summary of the findings.

27. Since it is the public's confidence in the system and its confidential nature that produces the desired quality of information, it is essential that the kinds of data protections, prohibitions and authorized uses be understood by all who are required to provide identifying and personal facts to the registration system. As an early step in gaining public confidence in the confidentiality of information to be provided to the system, privacy to registrants while furnishing information for the registration record and statistical report should be assured. For that purpose, the Registrar General should ensure that every local registration office has appropriate office space in which only the registrants are present while furnishing information to the local registrar. No other members of the public should be allowed to hear or see the responses to the registration or statistical forms. In that way, registrants will feel more comfortable and will be encouraged to provide accurate data.

28. In considering permitted and prohibited access to the information contained in individual vital records, the law and regulations governing the registration and vital statistics systems must weigh the relative importance of several potential uses: (a) the establishment of basic facts about the registrant and the event and the use of those facts by the registrant or another appropriate representative of the registrant to satisfy administrative and legal requirements; (b) the utilization of the facts for the public good, including public health preventative and treatment measures and a wide variety of health, social and demographic research; and (c) other types of interests in vital data about individuals, either singularly or collectively in groups, including various commercial uses to sell insurance or a product as well as instances of curiosity, whether benign or maliciously intended. The law and regulations must then prioritize such uses and balance them against the right of individuals - and in some cases institutions - for privacy and confidential treatment of their information. Clearly, it is impossible to anticipate in advance all of the possible allowable uses of the records; it is equally impossible to spell out in advance all of the types of prohibited access to the information. Therefore, the goal of the legal language should be to describe classes of acceptable access and use of the data; the registration authorities should be given latitude within the legal guidelines to approve or disapprove requests for disclosure of confidential information. Where such latitude is permitted by statute, the Registrar General must ensure that the intent and spirit of the confidentiality provisions in the law are uniformly applied and fully understood throughout the system by all employees having access to the records, which may be done through written directives, instruction manuals, employee training and seminars etc.

C. Recommended confidentiality provisions for a civil registration law

29. The provisions set out below² are suggested confidentiality concepts for inclusion in a civil registration law (or other documents governing civil registration and vital statistics systems). Of course, they may need modifications to put them in conformity with other provisions in law and with national custom and practice, but they are intended as a foundation upon which an appropriate national version can be based. The provisions are intended to

pertain to all of the information about an individual vital event, whether recorded on a single registration form or on separate forms, and whether intended for basic identification of the event or to provide additional statistical data.

Recommended provisions

30. To protect the integrity of vital records or statistical reports of vital events, to ensure their proper use, and to promote the efficient and proper administration of the civil registration system, it shall be unlawful for any registration employee, records archivist or other person to permit inspection of or to disclose information contained in vital records or in vital reports or to copy or issue a copy of all or part of any such record or report unless authorized by [this Act] and by regulation or by order of [a court of competent jurisdiction], as indicated below. Legislation needs to provide specifically for the following actions and protections:

(a) The Registrar General is the legal custodian of vital records and any associated reports of individual vital events, including any statistical reports. He may delegate or assign custodial responsibilities to his deputy, local registrars or others at any level of the infrastructure of the registration system. In the case where statistical reports and other information is forwarded to another agency for purposes of compiling vital statistics, a Memorandum of Agreement describing these services should contain a statement that makes the agency compiling the vital statistics responsible for the preservation of confidentiality and privacy of information in copies of vital records and the statistical reports;

(b) The Registrar General is responsible for implementing and enforcing all confidentiality provisions and for undertaking the necessary measures to verify strict compliance with them throughout the civil registration system;

(c) Disclosure of information which may identify any person (or institution) named in any vital record or report may be made only pursuant to regulations which require the submission of written requests for information by researchers and execution of research agreements that protect the confidentiality of the information provided. Such agreements shall prohibit the release by the researcher of any information that might identify any person (or institution) other than releases that may be provided for in the agreement. For purposes of [this Act], research means a systematic investigation designed primarily to develop or contribute to generalizable knowledge. Nothing in [this Act] prohibits the release of information or data which would not identify any person (or institution) named in a vital record or report;

(d) When 100 years have elapsed after the date of birth or 50 years have elapsed after the date of death (marriage, or divorce, dissolution of marriage or annulment), the records of these events shall become available to the public without restriction, in accordance with regulations which shall provide for the continued safekeeping of the records (see also chap. II below);

(e) The Government agency responsible for national vital statistics may be furnished such copies of records, reports, electronic files or data in any form from the system of civil registration as it may require to fulfil its responsibilities in producing national vital statistics. The staff of the vital statistics agency are subject to all of the applicable provisions of [this Act] and the regulations pertaining to confidentiality and disclosure of information from vital records or vital statistics forms.

- (i) Other national or local government agencies may, upon request, be furnished copies of records or data from the system of civil registration provided that such copies or data be used solely in the conduct of their official duties and that any disclosures of information that might identify any person (or institution) be specifically authorized by [this Act] or by written agreement with the Registrar General;
- (ii) The Registrar General, local registrars, and other custodians of vital records authorized by him may, upon receipt of an application, issue a certified copy of a vital record, or a part thereof, to the registrant, his or her spouse, children, parents, or guardian, or their respective authorized representative. Others may be authorized to obtain copies when they demonstrate that the record is needed for the determination or protection of his or her personal property rights;
- (iii) Certified copies, once issued to an authorized requester, are not subject to confidentiality provisions of this Act. The Registrar General has no responsibility for any uses of certified copies made by authorized recipients or by subsequent reviewing agencies or persons.

* * *

31. Regulations in support of the above-mentioned provisions should be developed and adopted. Those regulations should spell out in more detail the various requirements and procedures that are necessary to provide for security and confidentiality as intended by the legislation (see section D below). For example, regulations should address the physical security of the files and records, and should specify by job title those officials and members of the staff who are to be permitted to work with and view the records. Regulations should prescribe the form or format of various documents which are required before information or copies are released, including applications for certified or uncertified copies of vital events, requests for information or for copies needed for research projects, and the form of the agreements to be signed by other official agencies needing access to the records. Regulations should also describe the documentation or other proof required from requesters of copies of individual records to establish their right to the record (see para. 37 below).

32. Minimum requirements for applications for copies of records should include, in addition to the information necessary to locate the record in files, the name and address of the requester, the relationship of the requester to the registrant (e.g., self, parent, spouse, child, guardian, legal representative) and the reason for requesting the copy (e.g., passport application, proof of age for school entrance, inheritance matters etc.). In addition, it is good practice to request additional information which would not generally be known to a casual requester (e.g., maiden name of mother in the case of a birth or birth date of the decedent in the case of a death). Those requirements are necessary to prevent vital records falling into the hands of people who do not have a legitimate right to access them.

33. Applications from researchers should include a study protocol which describes the study objectives and the methods to be used so that an informed decision can be made regarding the release of the records in question. Regulations should also specify that researchers sign an agreement that the information received about individuals and institutions is needed only for internal processing, and that final results to be published or otherwise made

public will be in statistically aggregated form and will not enable the identification of specific persons.

34. Agreements to transfer or share data with other official agencies should include a statement of purpose for the release of the information, and should bind the other agency to use the information only for the agreed purpose and to otherwise treat the data confidentially and in keeping with the law and regulations.

35. When copies of vital records are provided to other official agencies, the agreement between the Registrar General and the official agencies should include specific instructions on how long the transferred or shared data will be kept by the agency and the manner of return or disposal (see, for example, para. 37 (d) (i) d).

D. Recommended regulations dealing with disclosure of records

36. As indicated in section C above, it is often desirable to clarify or expand some provisions in the law by use of regulations. Regulations are usually easier to modify or expand than actual legislation. By incorporating the additional details which are necessary to carry out the intent of legislation in a separate set of regulations, the legislative text can be shorter and usually easier to understand in general. The specific guidelines on how the intent of the legislation is to be carried out can be elucidated in regulations and modified as circumstances dictate, as long as the principles contained in the law are not violated.

37. If regulations are developed to support a civil registration and vital statistics law, an appropriate subsection dealing with confidentiality and disclosures of information should contain the following or similar provisions² which apply to original and back-up copies of vital records kept in any form, regardless of the place where they are stored. To protect the confidentiality of information and the integrity of vital records:

(a) The Registrar General and other authorized custodians of vital records shall provide a secure environment for the records under their care. Records shall be kept in locked rooms, preferably in locked cabinets, and not in public areas. No vital record shall be left unattended at any time. If records are to be bound into books, the binding should be done under strict control of the Registrar General to ensure the integrity of the records and their information;

(b) The Registrar General and other authorized custodians of vital records shall not permit inspection of or disclose information contained in vital records, or copy or issue a copy of all or part of any such record unless he or she is satisfied that the applicant has a legitimate right to obtain a copy or abstract of such record:

(i) Family members doing genealogical research and genealogists representing a family member may obtain copies of records needed for their research. Unless the registrant is deceased, appropriate authorizations shall be required from the registrant or from his or her spouse, children, parents, or guardian, or their respective authorized representative;

(ii) The term "authorized representative" shall include an attorney, physician, funeral director or other designated agent acting on behalf of the registrant or his or her family;

(iii) The natural parents of legally adopted children, when neither has custody, and commercial firms or agencies requesting listings of names and addresses shall not be authorized to obtain copies or abstracts of vital records;

(c) In the case of adoptions, information from the original birth records of adopted children is usually considered to be confidential and kept in sealed files. In countries where this is the case, such sealed files must be opened only when a court of competent jurisdiction has so ordered. The disclosure of information about the natural parents of adopted children is usually ordered by a court decree only when the court has carefully weighed the best interests of all parties involved;

(d) All requests for disclosure of information contained in vital records for purposes of research which identifies any person or institution shall be submitted to the Registrar General:

(i) Each request must contain:

- a. The objectives of the research;
- b. A peer review and approval of the study protocol for any study requiring contact with study subjects;
- c. A description of the storage and security measures to be taken to assure confidentiality of identifying information;
- d. Provision for the return or destruction of the information at the completion of the research;
- e. The expected time-frame of the study;
- f. An acknowledgement and agreement that use of information provided by the Registrar General may be used only for the purpose for which it was obtained;
- g. An acknowledgement and agreement that release of any identifying information by the researcher to any other person or entity may be made only with prior written approval of the Registrar General;

(ii) All requests shall be reviewed to determine compliance with the following:

- a. The request contains all of the required elements;
- b. The request adequately justifies the need for the requested information;
- c. The requested information can be provided within the time-frame set forth in the request;
- d. The Registrar General has the necessary resources with which to comply with the request;

(iii) The Registrar General shall enter into a written agreement for each approved research request. Each such agreement shall specify exactly what information will be disclosed, and shall prohibit release by the

researcher of any information which may identify any person or institution. In addition, each agreement may provide that in the event of breach of the contract the principal investigator(s) shall be barred from participating in any future research agreement and shall pay to the [responsible government agency] the sum of [***] per violation of the agreement;

(e) For requests for disclosure of vital statistics information for research purposes which do not require individual identifying data but which may result in the identification of any person or institution, a signed agreement must be obtained from the requester which contains the following assurances:

- (i) The recipient will not use nor permit others to use the information for any purpose other than for statistical reporting and analysis;
- (ii) The recipient will not release nor permit others to release the information or any portion of the information to any person who is not a member of the requesting organization without permission of the [Registrar];
- (iii) The recipient will not attempt to link nor permit others to attempt to link the data with individually identifiable records from any other data file, unless authorized by the Registrar General;
- (iv) The recipient will not use nor allow anyone else to use the information to learn the identity of any person or institution included in the information provided;
- (v) If the identity of any person or institution is discovered inadvertently, the recipient will not make use of this knowledge, will inform no one else of the discovery, will safeguard the information which led to the identification and will notify the Registrar General of the occurrence;

(f) A certified copy or other provision of individual vital record information will not be issued until the applicant has identified his or her legitimate right to make the request and has furnished sufficient information to uniquely specify the record in question. Whenever it is deemed necessary to establish an applicant's right to information on a record, documented identification and/or a sworn statement should be required;

(g) After 100 years have elapsed from the date of birth or 50 years have elapsed from the date of death, marriage, divorce, dissolution of marriage or annulment, records in the custody of the Registrar General shall become available to any person submitting an application containing sufficient information to locate the record.

E. Procedures for protecting against disclosures in statistical presentations

38. Even after careful protections are put in place to prevent release of protected personal information on a case-by-case basis, it is possible that in the presentation of aggregated statistical data, inadvertent disclosure of facts about one or more individuals may be inferred. This may occur when providing data to answer a specific request for statistical information, or it may occur through the routine publication of vital statistics in tabular form.

39. In making available vital statistics data tabulated in detail, it is possible to reveal confidential information in several ways. For example:

(a) One line of a cross-tabulation of x by y represents characteristic y_i . This line contains a total of two persons. If one of the persons having characteristic y_i reads this table, he or she now knows the x characteristic of the other person with the characteristic y_i in the population;

(b) All cases in line y_i of a statistical table fall in the cell in column x_i . It is then disclosed that any individual in the population covered by the tabulation having characteristic y_i also has characteristic x_i ;

(c) An urban area is comprised of two adjacent cities, a and b. City a contains three hospitals and city b contains one hospital. A statistical report is published giving confidential hospital data totalled for each urban area in a country. Another report is published with confidential hospital information by city but only for cities with two or more hospitals. Using the two reports, one can subtract the data for city a from the urban area total, thus deriving the confidential data for the lone hospital in city b.

40. These examples imply the existence of several types of general situations in which statistical disclosure may take place. Other types of examples are possible, and guidelines are set forth in section F below to take into account several inadvertent statistical disclosure situations.

41. There are several classes of statistical disclosure which the guidelines will attempt to deal with:

(a) Exact vs. approximate disclosures: exact disclosure is the disclosure of a specific characteristic, such as race, sex or a particular morbid condition. Approximate disclosure is the disclosure that a subject has a characteristic which falls within a range of possibilities, such as being between 35 and 39 years of age. Some approximate disclosures may be considered harmless because of their vague nature;

(b) Probability-based vs. certainty disclosures: data in a table may indicate that members of a given population segment have an 80 per cent chance of having a certain characteristic; that would be a probability-based disclosure as opposed to a certainty disclosure. In a sense, every published table containing data or estimates of descriptors for a specific population group provides probability-based disclosures for members of that group. Only in highly unusual circumstances could a disclosure of that kind be considered unacceptable, but there is the possibility that a highly specific group in the population has an extremely high probability of having a given sensitive characteristic. In such cases, the probability-based disclosure would warrant careful consideration prior to publishing;

(c) Internal vs. external disclosures: an internal disclosure is one that results completely from data published from one study or source. An external disclosure occurs when outside information is brought to bear upon the data being published, resulting in a disclosure of additional information.

F. Guidelines for avoiding disclosures in presentations of tabulated data

42. The following guidelines are presented to assist in preventing inadvertent disclosures from tabulated data:

(a) In no table should all cases of any row or column be found in a single cell;

(b) In no case should the total for a row or column of cross-tabulation be less than three;

(c) In no case should a quantity in any tabulation be based on fewer than 3 cases;

(d) In no case should a quantity be published if one case contributes more than 60 per cent of the amount;

(e) In no case should data on an identifiable case nor any of the kinds of data listed in the preceding subparagraphs (a) to (d) be derivable through subtraction or other calculation from a combination of other published tables.

43. The above guidelines should be adhered to except in unusual situations. If a guideline appears to be unreasonable in a specific situation, approval for an exception should be requested from the [responsible officer]. Examples where exceptions might be granted are:

(a) A death or illness from a highly contagious disease or other condition of significant public health importance might be the only occurrence of its kind in a particular geographic area. A tabulation by place of occurrence would result in a cell with a count of 1, thus calling into effect the above guidelines. Because of the public health significance of the particular case, an exception could be granted provided that the resulting disclosure does not reveal highly sensitive data or other information that would not be known socially through other sources;

(b) A table may show simple counts of numbers of persons, even though the number in a cell is only "1" or "2", provided that the classifying data are not considered to be sensitive in the context of the table. The danger of disclosure would be mitigated by the fact that the data in question have no sensitivity. They may consist entirely of obvious characteristics, or may be comprised of information readily available from other published sources. For example, publication of counts of public health manpower personnel by occupation by area would be acceptable if not accompanied by other distinguishing characteristics or other cross-classifications that have the effect of adding descriptive information about the same persons. However, publication of counts of personnel by occupation, area and income is not acceptable for cells containing less than 3 persons because that would reveal sensitive income data;

(c) Incompleteness of registration may reduce the certainty of a disclosure resulting from the publication of data.

44. The most common methods used to avoid disclosures that arise from small numbers in tabulations include the following:

(a) Reducing the size of the table by combining rows or columns into larger categories in order to eliminate the particular cells that would otherwise result in disclosures;

(b) Suppressing unacceptably small numbers in cells. When that is done, it is necessary to also suppress other cells in the table to prevent the determination of the suppressed figure through subtraction. It is usually necessary to suppress four cells in a cross-tabulation in order to avoid disclosure through one cell: the offending cell $(x_i y_i)$, another cell in the same

row $(x_j y_i)$, another cell in the same column as the offending cell $(x_i y_j)$, and also the cell $(x_j y_j)$ at the intersection of the additional row and column involved in the newly suppressed cells.

45. Some civil registration/vital statistics offices make their files of vital events available to researchers in electronic form, i.e., on computer tape, floppy disk, CD-ROM etc. In that way, researchers have access to vital statistics data not routinely tabulated and published, while the responsible office is spared the extra work of preparing special tabulations (although the steps necessary to prepare an electronic file that meets the prerequisites described below may offset the savings gained by not preparing special tabulations). Although the provision of files of individual records may have advantages for both the official agency and the researcher, it presents a special risk of inadvertent disclosure. That risk should be acknowledged by both the supplier of the data and the recipient before any data are transferred, and rules governing the use of the data need to be agreed in writing prior to the transfer.

46. The following practices are recommended for consideration if electronic files are provided to outside researchers:

(a) The general concepts regarding release for research purposes of individual vital records as presented in sections C and D above should be followed;

(b) If an electronic file contains confidential information, it should only be released without individual identifiers, such as the name or address of the individuals contained in the file;

(c) The file should not contain detailed information about the subject which could facilitate identification and which is not essential to the specific research objectives (e.g., the exact date of the subject's birth);

(d) Small geographic areas, e.g., small cities, towns or villages, should not be uniquely identified;

(e) The characteristics of small geographic areas are not to be included in the file if these characteristics would uniquely identify the small area;

(f) An electronic file containing confidential data on individuals or facilities may not be released to any person or organization until that person, or a responsible representative of that organization, has first signed a statement assuring that the data provided will be used only for statistical reporting or research purposes.

47. The meaning of "small geographic area" as used in paragraph 43 (a) and (b) above cannot be specifically defined for universal use. The value should be large enough so that it is unlikely that data about a vital event in such an area would be recognizable by others even when specific identifiers, such as name and exact address, are suppressed. On the other hand, the value should not be set so large as to preclude any regional or ecological analyses.

48. It is always good practice to allow for exceptions from the strict application of any rules and guidelines that may seem inappropriate in a given situation. Requests for exceptions should be submitted to the Registrar General for consideration. The risks of disclosure, the importance of the proposed research and the perceptions of the public about the confidentiality of the records need to be carefully weighed before exceptions are granted.

II. ARCHIVAL METHODS AND STORAGE OF VITAL RECORDS

A. Introduction

49. Vital records and associated individual statistical reports are a resource to the civil authorities in the area where the events occurred, to individuals about whom the documents refer, to others having a tangible interest in a particular vital event, and to researchers who make use of aggregated data from the records on file. Those records, in most instances, are the only official documentation of the facts related to individual vital events. Therefore, the custodians of such records have a responsibility to protect and preserve them, along with any back-up copies, in a manner consistent with current and future needs for the information.

50. Some countries have adopted record retention laws governing the ways in which official documents are to be kept and for how long. In such cases, a records retention schedule is drawn up in advance that specifies which records are to be kept permanently and which are to be disposed of in accordance with the schedule. Vital records should be considered permanent records, never to be discarded in spite of their age. Records must be preserved for future use in a manner consistent with the national policy for such kinds of record. In situations where no formal records retention laws have been established, it is important that the principle of permanent retention of civil registration documents be clearly recognized, and that the custodian of the records (usually the Registrar General) clearly establish that concept both with other officials of the Government as well as with the staff who work with the records.

51. Annual files of vital records are most actively accessed during the year immediately following their creation, and then, depending on the type of record, have noticeable increases in access only at specific times. For example, birth records for a given year will show signs of increased activity for proof of age when the children born in that year need such proof for entrance to school, for marriage, for voting rights, for obtaining a driver's license etc. This suggests the need for different strategies for storing new records that have a higher rate of access and older records whose needs for access are either much lower or are perhaps sporadic.

52. Because of the need to permanently retain civil registration documents for their various uses by individuals, official agencies and research workers, there is also a need to protect and preserve these records against physical loss resulting from age, mishandling, misfiling, moisture, excessive dryness, rodents, insects and disasters, such as fires, earthquakes or floods. Once lost, it is difficult, expensive and in some cases impossible to recreate them, and their value as evidence of the facts about a vital event is significantly diminished. For that reason, it is recommended to keep two sets of vital records, one set at the central office and one set at local registration offices. Lost or destroyed files often can be reconstructed from the other set, but it should be noted that original signatures affixed at the time of the event can never be replaced.

53. It has been observed that the surest way to preserve important paper-based documents is to seal them in a container or vault with controlled temperature and humidity and shielding from the ultraviolet component of light. But although such treatment may extend the life of the records significantly, it defeats the main purpose of the records, i.e., their various uses mentioned above. Therefore, some compromise between facilitation of access for near future use and preservation for long-term future use is desirable.

B. Considerations regarding the preservation of civil registration records and related documents

54. Civil registration records are official documents with legal value, requiring permanent safekeeping. That policy should apply to the original and to copies made for back-up purposes. The requirements for permanent preservation of registration records do not extend to the associated statistical reports which are used to collect vital statistics, be they separate forms or copies of one part of a multi-copy registration form.

55. Where multiple copy forms are used, the most common distribution of the copies is to allow local registration offices to maintain their own file of vital records while the originals are forwarded to a central repository. When civil registration and vital statistics are separately administered, additional copies of the records are sent to a separate statistical office for preparation of summaries and national vital statistics. In such cases, it is important that a distinction be made between the legal document (which should be kept permanently) and convenience copies (which should be scheduled for destruction after a predefined period of time or after they have served a predefined purpose). However, confidentiality protections must be provided at all times to the copies and not just to the originals (see paras. 28, 29 and 30 above). When vital records are entered into ledger books, an exact copy of the book should be prepared for back-up purposes and forwarded to a central repository. Since both are legal and official records, non-disposal and preservation policies apply equally to the original and the back-up copy.

56. Individual supplemental reports are usually used to collect information for statistical purposes only, and are not considered as part of the legal document. Once the information on them has been integrated with the rest of the data items for tabulation into satisfactory statistical reports, there should be no need for permanent or long-term retention of the supplemental reports; however, there is value in keeping statistical reports for up to 3 or 4 years after the year of registration to ensure that all tabulations, both routine and for research purposes, have been successfully completed, and that publications and other dissemination of data has taken place.

57. Destruction of copies or supplementary reports, when no longer needed, must be carried out in a way that preserves their confidentiality and prevents their falling into the hands of persons who could use the documents or the information contained on them for fraudulent purposes. This usually entails shredding, but other means of disposal are possible if full control over the process is maintained to assure that each and every copy is rendered unreadable. The Registrar General should promulgate regulations on the manner and timing of disposal of such records.

58. It is essential that all aspects of confidentiality afforded the original records be extended to any copies that are kept on file, and that confidentiality not be breached as a result of the disposal of redundant records.

59. In some countries, an electronic system of vital records has been established. In most of those systems, paper records have been replaced by entries into a computer file. The information is entered into the computer at the office of the local registrar, usually from a paper worksheet. Another version of an electronic system involves paper records being converted into an electronic file at the central authority. The electronic files require special protective procedures, depending on who may have access to the computer and its

files and how data is maintained in that particular computer system. If the information at the local level is transmitted to a central computer via telephone lines, the system and its files may be susceptible to improper access or destruction from the outside. Individuals with a legitimate right to access the records, i.e., employees and others designated by the Registrar General, should be allowed entry to the system through the use of individual passwords. Passwords must be changed frequently, say on a monthly basis, and passwords assigned to persons who are no longer authorized to use the files must be cancelled immediately. In addition, authorized persons must be frequently cautioned against keeping their password in written form on their desk or other location where it can be found by potential intruders. The management will usually prefer to grant different levels of access to different categories of operator staff. It is normal to grant enquiry access to a larger part of the staff, while a more limited number of operators is able to update the database. Access rights will be distributed by means of passwords for each operator. The safe administration of passwords is best taken care of by the database management system. Password protection is an important safeguard, but with modern, fast computers and sophisticated software, unscrupulous persons can, using the telephone connections between sending and receiving computer stations, break the password barrier and read, modify, or destroy the data. Therefore, when electronic files are transmitted via telephone lines, further protection in addition to passwords is desirable. Encryption of data, usually accomplished by special software designed for that purpose, gives added protection by rendering the data unreadable in the event that an intruder gains improper access to the files. If electronic files of vital records are not transferred from computer to computer via telephone links, then whatever alternative process is used, e.g., sending data from one machine to another via storage on floppy disks, must be carefully designed and protected to keep the records from falling into unauthorized hands. A major threat to the computerized civil register is the risk of misuse by the entrusted administrative staff. Means to ensure the commitment and responsibility of the staff should be taken, such as reasonable salaries, modern management procedures etc. Additionally, reasonable control measures should be established to enable management to carry out auditing procedures. Those procedures involve a comprehensive logging facility ensuring that all changes and inquiries to the civil register are monitored, including the time they were made, the unique registration number of the accessed civil information and operator identification. Based on such a log, management is able to carry out subsequent investigations both randomly and on any suspicious events.

C. Backing up and preserving civil registration files

60. One of the primary responsibilities of the custodian of vital records is to assure that the records will be kept safely from destruction or other harm. Since most office facilities are subject to the risks of fire, water damage and other hazards, positive steps must be taken in advance of any disaster that would allow the replacement of damaged or lost records. Furthermore, records can become unreadable because of their age and amount of usage even when there has been no disaster. The difficulty of handling and making copies from ageing records needs to be fully anticipated, with appropriate steps taken to preserve them before they become too difficult to manage.

61. There are several kinds of system that may be used to establish the official files of vital records. For example, the system may be based on paper records, microfilm, optical disk, computer files or a combination of these. Within each type of system, there may be variations. A paper-based system, for example, may consist of files of loose records, records bound into books, or

line-by-line entries into a previously bound ledger. Computer files may be kept on mainframe computer disks or tapes or they may reside on the hard disk or on floppy disks of a desktop personal computer. Regardless of the kind of system being used, steps should be taken to provide a secure back-up to the main file. 62. Regardless of the kind of system used, a few general principles for back-up files apply:

(a) A back-up copy of each file must be made and maintained safely and securely;

(b) The back-up file must be stored in a different location, preferably in a different geographic area, with as much or more attention paid to the in-storage environment as to that of the originals;

(c) The back-up file must be kept up to date, reflecting amendments and corrections;

(d) Depending on the storage medium used, back-up files have limited life spans and need to be refreshed (recopied) from time to time. That need to refresh a back-up file may not only be the result of the age of the back-up but can also result from changes in technology. For example, for electronic files rapid changes in both hardware and software may make it difficult to access and read records stored on obsolete computers or created with obsolete software. Other storage media are also subject to technological advances, which may leave older equipment without sources of replacement parts or other repair services.

63. In many countries, the local or district registrars keep a complete file of all the records established in their jurisdiction, sending copies to a central registry. With such an arrangement, it might be assumed that no further back-up is required since each record is kept in more than one location. To the extent that each location affords the same care to the files and each diligently notes any legal amendments or changes that may occur to records, a certain degree of protection for the records does exist. However, with such an arrangement, ageing of paper records with the associated fading of ink and paper brittleness is not avoided. If some of the records in a central registry require replacement because of a loss, it may be necessary to reproduce some or all of the records from each of the geographically dispersed files. A safer and more efficient practice is to make a copy of the records at the central registry on an annual basis. In that way, there continues to be a single central source file that can be faithfully reproduced if the need arises. Since duplicate ledger books or back-up files of vital records are basic safeguarding measures in the care and custody of vital records, the removal of original books or files from the local office or duplicate books or files from the central repository should be prohibited unless authorized by the Registrar General.

64. The most common technique for making back-up copies from original records is a microfilm process. Usually, paper-based records are filmed at the central authority with local registration offices maintaining and preserving copies of the paper records. Microfilming is an efficient space saver, with a roll of film holding 2,000 to 3,000 records. The filmed images usually produce sharp copies quite suitable for certification and other uses. Amendments to records already filmed are usually placed on a separate "amendments" roll and the original image marked to indicate that it has been amended. Filming can be done at fixed points in time, usually annually, when a volume of records have accumulated and a logical set of records (one year's worth) can be kept together on the same or serially continuous spools of film. If microfilm reader/printer equipment in sufficient numbers to meet the demand for use are available, original records can be stored in a safe environment after filming. In the

filming process, usually a master negative copy and one or more duplicate positive copies are produced. The positive copy or copies may be used for routine day-to-day work. If damaged or lost, a positive copy can be replaced from the master negative. Therefore, when a microfilm system is used, it is of utmost importance that the master copy be stored in a safe location in which, if at all possible, temperature and humidity can be controlled. Sometimes, arrangements can be made to utilize a bank vault for that purpose. In any case, the master copy of the original records should never be stored in the same facility as the working copies or the originals. If it is not feasible to work on a daily basis from filmed images and original paper records must be accessed to produce certified copies for the public, then it must be recognized that it is even more important to maintain an off-site archival copy that will not deteriorate rapidly with age. Additional information and discussion of the role of microfilm as a storage and back-up medium in a civil registration and vital statistics system can be found in the Handbook on the Management, Operation, and Maintenance of Civil Registration and Vital Statistics Systems (see preface).

65. Other kinds of storage systems are also available for the civil registration system, including computerized storage and retrieval, optical disk systems and an emerging technology known as Computer Output to Laser Disk (COLD). These are more advanced technologies than micrographic approaches and tend to be more expensive. They become cost-effective only with very high volumes of records to be stored and where very rapid retrieval is a requirement. Furthermore, if technical service, including replacement parts, is not available in the immediate area where the equipment is being used, the ability to conduct daily work may be severely compromised. The life span of optical disk and laser disk storage has not been fully ascertained. However, those systems are very efficient in terms of storage capacity and space requirements, produce excellent copies and can accommodate amendments on the same disk as the originals provided sufficient space is left on the disk (see the Handbook mentioned in para. 64 above).

66. Microfilm, optical disk and laser disk technology, as well as paper-based files, all share one particular drawback. They cannot be used to directly produce sorted information for statistical tabulations and for alphabetical indexes of the files.

67. Of the more technologically advanced systems, personal computer (PC)-based approaches seem to be the most feasible beyond advanced microfilm systems. There are, of course, both advantages and disadvantages to the use of such a system. Speed of retrieval of individual records, rapid printouts for making certified copies, ability to be sorted for statistical purposes, easy duplication of an entire annual file and large savings in storage space are among the advantages. Those systems need to be weighed against the possible need for a change in legislation to allow for certified copies that do not show reproductions of signatures affixed at the time of the event, as well as the need to have appropriate software written and maintained and the necessary hardware on hand to operate the system. Manpower is necessary to convert registration information in paper form to electronic form on a relatively current basis, either at the local level at the point of registration or at a central point. It also must be kept in mind that hardware and software of the kinds needed for such a system change relatively rapidly with advances in technology; those changes necessitate frequent upgrading of the system before obsolescence renders the data in the system unreadable. This is especially true for archived copies of files in electronic form: if these are not "refreshed" from time to time as hardware and software become upgraded, their value as back-ups in case of disaster may rapidly diminish.

68. The optical disk technology avoids the "lack of reproduced signatures" problem which is usually encountered in PC-based systems (see para. 67 above), but the cautions about changing technology remain. If such technology becomes more widely used, its costs and the worldwide availability of technical support and service will probably make it the logical successor to the now widely used microfilm systems.

69. Each of these back-up systems has both advantages and disadvantages that must be weighed in terms of the specific civil registration system in which they would operate. On balance, one strategy that has been successfully used in a number of countries is a combination of computerized files and microfilm. The film is used primarily to provide archival copies and back-up of the file. The computer file is used for rapid retrieval, for keeping amendments together with the rest of the records, for maintaining a unified vital record file that can combine statistical data and civil registration data, for producing alphabetic indexes to the file, and for producing vital statistics tabulations directly from the file.

70. It is also advisable to have contingency procedures in place for file copies in case of war. A procedure might be activated to destroy all copies except a special security copy that would be shipped to a friendly country. Such a procedure is of vital importance when the civil registration system has been developed into a population register that can be misused by occupation powers.

71. Although it is not feasible to provide detailed technical guidelines for records preservation and archival methods in the present Handbook, more detailed information may be found in the Handbooks in the current series which cover the management, maintenance and operation, and computerization of civil registration and vital statistics systems (see preface). In addition, the following bibliography lists several other helpful technical publications:

Selected publications on imaging technology³

1. V. Jones (1993). Handbook of Microfilm Technology and Procedures. Crestview, Florida: QP Publishing Co.
2. W. Saffady (1990). Micrographic Systems. Silver Spring, Maryland: Association for Information and Image Management.
3. _____ (1993). Optical Disk vs. Micrographics. Westport, Connecticut: Meckler Publishing Co.
4. _____ (1995). Optical Disk Systems for Records Management. Prairie Village, Kansas: Association of Records Managers and Administrators.
5. C. P. Waegemann (1994). The Handbook of Optical Memory Systems. Newton, Massachusetts: Medical Records Institute.

Notes

¹ United Nations publication, Sales No. E.73.XVII.9.

² Based on United States Department of Health and Human Services, Model State Vital Statistics Act and Regulations, National Center for Health Statistics DHHS Publication, No. (PHS) 95-1115 (Hyattsville, Maryland, 1995).

³ These and other related technical publications are available from the Association of Records Managers and Administrators, Prairie View, Kansas. Their e-mail address for ordering publications is:

<http://arma.org/hq/archives.html>

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