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WHO Cooperation in Strengthening National Health Information Systems

**A briefing note for
WHO Country Representatives
and Ministries of Health**



WORLD HEALTH ORGANIZATION

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1. Purpose

This brochure provides information for WHO Country Representatives (and through them to Ministries of Health) about WHO's strategy and programme of support for countries interested in strengthening their health information systems (HIS). An attempt is made here to reflect the views of WHO Headquarters and all regional offices, but there will be differences of approach from region to region, and across countries at different levels of development. This brochure also lists the methodologies and other documents on strengthening various aspects of health data generation, management and use that are available from the Health Situation and Trend Assessment Programme (HST) in headquarters and regional offices. These additional documents can also be used as reference and background when discussing with national officers issues related to health information and the options for addressing those issues.

2. Common HIS problems

It is recognized that countries at all levels of development are confronted with continuing constraints in generating, analyzing, summarizing, reporting, communicating, and especially in using health data and information for the better management of their health programmes and services. Lists of such problems can be very long and detailed, but the following problems are generally recognized by most health ministries:

- the requirements for data recording and reporting by service staff are excessive in that much of the required data are not used in the tasks they perform in case and facility management, with the result that there is an unnecessary recording and reporting

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burden on service staff. Such extensive reporting also leads to great amounts of data accumulating at all levels of the system, little of which are analyzed and used;

- the lack of awareness by health policy-makers and programme managers of the strategic importance and practical usefulness of health information for planning and management results in a low demand for information;
- in general, data routinely reported by health services are considered of dubious quality (validity and completeness), and therefore are frequently not relied upon;
- often data on the health of those without access to services, or who use private sector services are missing from government health information systems;
- there is increasing use of general and special-purpose surveys, often supported by international agencies, to capture data, some of which should be available within routine reporting systems. Such surveys further lessen reliance on the routine data;
- in many countries, the birth and death registration and disease surveillance systems do not function adequately;
- data capture at the point of care, and data entry or recording in manual or automated databases represent two significant problem areas in health data management;
- despite considerable investment in computers and data processing, inadequate use is being made of computers for the better management and communications of health data;

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- various departments, programmes and institutions within the health sector tend to develop their own data collection systems without consulting each other. Effective coordination of health information is often lacking which results in duplication and gaps in data collection, reporting, use and management of data;
- analysis, reporting and feed-back of health data and information from the central level to the services is rare and not well prepared; reports to international agencies are inconsistent and dominated by the indicators promoted by the agencies which may not be relevant for national use.

3. Issues when attempting to resolve HIS problems

There are a number of issues which confront national health administrations when they attempt to address their HIS problems. Comprehensive efforts to strengthen health information systems always prove to be complicated processes. National health information systems are often comprised of a number of sub-systems maintained by various programmes, offices and institutions. Avoiding overlaps and gaps, and sharing information among programmes is difficult. Getting programmes to agree on what data and processes are most necessary is even more difficult. Control of a reporting system and data base is not easily given up or shared. Coordination and partnership among systems is therefore very difficult.

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Many international collaborating agencies are active in the health information field. Different approaches are taken, often depending on the technical expert they

assign to provide country support. Often they specify the content and design of the system to suit their own perspective and immediate interests. Many agencies promote the collection of data they want through the use of indicators of their choice, without assurance that such indicators are relevant or feasible within individual countries. At the same time, there is a continuing requirement to be able to make international comparisons of national health situations and system performance using indicators which all countries can share. Agencies often provide hardware, software, surveys and training support whether it is justified or not. Often these efforts have focused upon the review and revision of forms and reports to serve central level purposes, and on conducting extensive and costly in-service training to induce staff to correctly complete the new forms and reports. A few agencies have encouraged ministries to totally revise their reporting systems. These efforts usually fail to achieve the expected improvements in quality and usability of health information and are often not sustainable.

Despite the widespread need and interest in health information systems by all countries, in the past, WHO has not given sufficient attention to this subject. HST budget lines in country programmes have not been effectively and efficiently used by governments and WHO Country Offices. WHO consultants provided in this field have been of variable quality, and inconsistent in their approach to strengthening HIS. This strategy is designed to address some of these issues.

4. Guiding Principles

... health information systems development must proceed as an integral part of efforts to strengthen the health care system.

The approach being recommended here for strengthening national health information systems follows a number of principles which have been derived from the assessment of HIS development experience around the world, and WHO's past efforts to support such development. These principles relate not only to information system design and use, but also to more effective styles of technical cooperation.

The overall purpose of these principles is to suggest that health information systems development must proceed as an integral part of efforts to strengthen the health care system, and that health data be recorded and used firstly, in support of individual care, local health service operation, and community action.

Placing emphasis on the use of data within the services will help increase the completeness and validity of the data that are selectively reported for supporting decision-making at other levels of the health system and for supporting health system planning and development including service integration.

Any data to be recorded at any service level must have an explicitly identified use (for decision or action) in terms of case or community health management by staff or community members at that level.

A. Principles for guiding health information system development

1. Strengthening the health information system at the various service levels should be undertaken in support of efforts to develop health services and improve their performance.
2. Any data to be recorded at any service level must have an explicitly identified use (for decision or action) in terms of case or community management by staff or community members at that level. An implication of this principle

is that no data should be requested from service levels to be reported to higher levels which do not have an *actionable use* at the recording level, as well as at the receiving levels.

3. *Any changes or developments to data recording and reporting should be made only to improve the provision of care at the patient and community level, particularly for those populations most in need.* One implication of this principle is that countries, municipalities or regions should not be encouraged to change their information system primarily to provide data for central level and international reporting purposes.
4. *Each health administration must assess its needs for clinical and managerial information based on its mission, goals, priorities, core service responsibilities, levels and functions, models of service delivery, resources, and access to information technology.* The health information system should be designed so as to not exceed the capability of the administration to manage it.
5. *Great prudence should be applied when making changes to components of health information systems that are working fairly well.* This applies particularly to reporting systems of specialized service programmes such as MCH, family planning, or tuberculosis control. Overall revision in health service recording and reporting should rarely be undertaken. Changes in the system should aim to progressively integrate the recording and reporting system at the local service level.
6. Efforts should be made to make better use of existing data at all levels through practical analysis, improved

presentation of data, and efforts to improve the flow and sharing of data across programmes and services.

7. *Practical use of informatics should be encouraged and supported for data base maintenance and report generation.* Such computerization should normally employ generic software (widely available database management systems and spreadsheets) in lieu of specially designed applications in order to insure they are maintainable by national programme and service staff. Major computerization efforts should not dominate the selection of indicators and data, nor the design of records and reports, but support the improvement of data management through the application of these principles.
8. *The selection and definition of a manageable set of "essential health indicators" is recommended as a sound activity for initiating the review and strengthening of health information systems and for devising a practical national health and health service monitoring capability.* Essential health indicators should be chosen for national, provincial and district use with the following criteria in mind:
 - A. *Useful for action* – The data needed for the indicator are useful for the person doing the recording (manager, staff, community leader or client) with the recorded data contributing to necessary action being taken with regard to the case, family, community or district being served. Such local level action orientation will not negate the value of the indicator for programme monitoring, management action and decision-making at higher levels, but it does require that the indicator data be summarizable, and through

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such analysis produce additional information such as comparable levels, rates and trends across different districts.

- B. *Relevant for national and programme monitoring* - The indicators can serve to measure progress toward stated national and programme goals, objectives, targets, norms and standards. As such, indicators often focus on priority health problems in the country and the services and resources intended to manage those problems. Promotion and use of the indicator should strengthen routine programme management and the health information system in the country.
- C. *Ease of generation and measurement* - The indicator data should, as much as possible, result from normal service and surveillance, usually existing within routine records and reports. When survey activity is necessary to obtain data, such survey work should be within the capability and responsibility of service staff and within available resources.
- D. *Valid, consistent, reliable, representative and sensitive* - The indicators should possess the normal desirable characteristics of health data, e.g. capable of being recorded across the service with the necessary degree of validity, consistency, reliability, representative of all population groups, and be sensitive to short term changes in the variable of interest.
- E. *Understandable* - The indicator should deal with a single clear idea which everyone will see as an important measure. Composite indexes should be avoided.

- F. *Ethical* – Data collection, including the choice of the data source, computation of the indicator and its use should not conflict with accepted ethical values.

Sometimes it is necessary to define proxy indicators to reflect conditions which are difficult or impossible to measure directly. (For example, the rate of school absenteeism could be used as a proxy for the morbidity rate of school-aged children, where there is a high rate of school enrollment.)

B. Principles for guiding technical cooperation in HIS development

As WHO joins countries and other agencies to collaborate in the strengthening of health information systems it is suggested that certain styles of support have proven to be far more effective and acceptable than others. Therefore, certain principles for guiding WHO and other agency technical cooperation have begun to emerge. These principles are particularly recommended for use by the WHO representative in assisting the government in making best use of WHO cooperation for strengthening their health information systems:

1. Each national HIS development strategy and plan of action will be different. It may have different entry points (initial activities), and different contents, depending on the needs and interests of each health administration. WHO must be flexible in responding to these differing needs, while making our principles and methods known.
2. HIS assessment and design tasks must be carried out by national teams or working groups, rather than performed by external "experts", whether they be WHO staff or consultants. However, such processes

WHO must be flexible in responding to these differing needs, while making our principles and methods known.

will benefit from the use of tested methodologies and low-profile facilitation by experienced WHO staff and consultants who understand and apply these principles.

3. When undertaking important tasks such as selecting and defining health indicators and data sets, the national health situation and programme objectives should take precedence over indicators recommended by WHO or other agencies. However, internationally recommended data elements and indicators, particularly those proven to be technically useful in programme management, should be made known to the national indicator selection groups.
4. All WHO support to improvement of health data generation, analysis and use, should be only for the purpose of improving service performance, whether it be patient care, public health work or health promotion. Staff and consultants assigned to HIS development support activities must be carefully chosen to suit the task and must understand these principles.
5. WHO should limit its provision of supplies and equipment for information systems, particularly computers. Hardware, software and other supplies should increasingly become the subject of national selection and expenditure, or be part of a larger collaborative project supported by funding agencies.
6. WHO should encourage the use of widely available software (including such packages as EPI-INFO). When specific computer applications are to be developed in countries, it is preferable that such programmes be developed, and therefore, maintainable by national staff.

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7. WHO cooperation in support of HIS development, especially that provided from the WHO Country Programme, should endeavor to facilitate the formulation and implementation of a practical national HIS development strategy and plan which has been formulated in response to a recent assessment of HIS performance, and which is supported by the leadership of the Ministry of Health and managers of major programmes and services.

5. Assessing the national need and interest for HIS development

With the awareness of this strategy, its principles and supporting methodologies, WHO Country Representatives (WRs) and Liaison Officers are encouraged to assess the government interest and needs for placing HIS development activity and support within the WHO country programme and for receiving inter-country, global or extra-budgetary support to such activity. Experience shows that there are a number of signals which can indicate when the time is right for WHO to extend collaboration to HIS development.

1. Senior decision-makers strongly express concern about the availability and use of health data and information, and interest in HIS development of one type or another.
2. A planning process has identified the need for HIS strengthening and has proposed a programme or project be set up for doing so.
3. Other agencies have offered or begun to support HIS development, but without applying the principles cited above, and there is likely technical or financial benefit from collaborating with those efforts.

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4. Critical breakdowns have occurred in certain information subsystems such as disease surveillance, monitoring of primary health care services, or vital registration which need urgent attention.
5. A WHO regional strategy has been developed for strengthening health information systems and all WRs and WHO Liaison Officers have been asked to explore national interest in applying the strategy. (This is currently the case in AFRO.)

6. The national health information system policy and strategy and common types of HIS development activity

One of the early products of WHO collaboration with a country in HIS development, should be the elaboration of a clear policy on the health information system and the strategy for its development. The policy may outline the objectives of the HIS, the principles which it will embody, the various responsibilities for its development and maintenance, and any notable regulations and procedures that will be changed or strengthened in order to implement the system (such as stronger regulations for private practitioners to report notifiable diseases).

The HIS development strategy may evolve gradually after the initial activities are completed and a plan of action is prepared. While there is no standard HIS development strategy, the process frequently starts with the review or selection and definition of essential health indicators, possibly at several levels of the health system. This may be followed by a rapid assessment of one or more information sub-systems, such as routine health service reporting and the disease surveillance system. Such assessments usually ascertain the availability, validity and

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use of data needed for the essential indicators. Subsequent activities are chosen to address the weaknesses confirmed through the HIS assessment and may include activities such as:

- review and development of standard case definitions
- assessment of clinic diagnosis, treatment and recording performance
- development of standard treatment and recording guidelines
- review and revision of certain records, registers and reports for the enhancement of service performance
- definition of procedures, data flow and communication standards between the various service and management levels
- definition of common data sets and data dictionaries based on registers, forms and standardized case definitions and clinical terms
- design and implementation of data bases for maintenance and use at national and regional level
- If computerized systems are used, the definition of technical standards (hardware and software) to ensure systems compatibility and modularity
- in-service training for service staff in the use of computers while actually developing practical data bases and report generation programmes
- design and production of improved annual health reports and public health newsletters
- enhancing the use of data within service facilities and communities, and for planning and decision-making at higher levels of the health system, through such activities as rapid evaluations of selected programmes and services, district or institution problem-solving, and health futures studies.

7. Types of WHO support for HIS development activity

WHO support for HIS development primarily includes methodology and documentation, technical facilitation for national group processes, financial support for local costs of critical development activities, support to training processes, and networking activities such as international consultations, electronic communications, the SCI "Network for Strengthening Health Information".

The attachment lists the methodologies and related documentation that can be made available to Ministries interested in applying these methods. Normally their first application is facilitated by WHO staff or consultants who have experience with the method, but such facilitation is provided in a manner that insures that national staff gain experience in leading and managing the process so that the Ministry is able to apply the method on its own in the future. If there are local costs incurred through such processes the WHO Country Representative may wish to make a provision in the country programme to cover such costs during the first few activities, but the Ministry should not become dependent on such funding for carrying out information system development work.

The methods most often applied within HIS strategies with WHO facilitation are:

- Selection of essential health indicators
- Rapid assessment of the HIS and/or the health surveillance system
- Rapid evaluation of selected services
- District team problem-solving (for enhancing use of data within services)

This strategy attempts to build learning-by-doing into each activity and thereby reduce the need for special in-service training activities.

- Assessment of clinic diagnosis, treatment and recording performance
- Design of improved health reports
- Design and implementation of health data bases
- Training central and district staff in the use of common computer software
- Conducting health futures studies

This strategy attempts to build learning-by-doing into each activity and thereby reduce the need for special in-service training activities. Inevitably, as new systems are implemented there will be a need for short, intensive staff training, such as for implementing new records and reports and maintaining a new computerized data base. Such training should include service planning and management procedures and not address only the submission or maintenance of health data. On occasion there is the need for formal training, in the country or abroad, in order for selected staff to obtain knowledge basic to the design and management of the HIS. Such fellowships should be carefully planned to assure the attainment of the learning objectives. SCI and regional office HST units can help locate such training possibilities.

The Unit for Strengthening Country Health Information (SCI) within the Division of Health Situation and Trend Assessment (HST) in WHO headquarters, and the respective HST Regional Advisors in the regional offices are happy to provide more information about this strategy for HIS development and welcome questions and suggestions on applying and strengthening the strategy.

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METHODOLOGIES AND TOOLS FOR STRENGTHENING COUNTRY HEALTH INFORMATION

The following methodologies and materials can be made available to countries interested in undertaking such activities as a part of their national strategy for strengthening their health information system.

A. METHODOLOGIES AND TOOLS

1. Catalogue of Health Indicators

(WHO/HST/SCI/96.8, a 2nd edition is under preparation)

This document describes indicators recommended by WHO technical programmes based on actual testing and use in national programmes.

2. Workshop for Selecting and Defining Essential Health Indicators

(SCI Unit, HST Programme, WHO, Geneva)

Sample workshop session guides and formats for facilitating the selection of essential health indicators by national groups for managing health programme and monitoring health impact.

3. Rapid Assessment of Health Information Systems

(SCI Unit, HST Programme, WHO, Geneva)

A guideline for designing and conducting assessments of the performance of typical sub-systems of national health information systems: epidemiological surveillance, service recording and reporting, programme monitoring and evaluation, administrative systems, and vital registration.

4. Guidelines for the Evaluation of Epidemiological Surveillance Systems

(Under development by the EMC Division, WHO, Geneva)

These procedures are combining the methods and experience of EPI, EMC, GTB and SCI and other programmes, is being tested in a number of countries, and will be produced as an initial version for further application and development.

5. Rapid Evaluation Method (REM) Guidelines

(WHO/MCH-FPP/MEP/93.1)

A generalized service evaluation guideline intended to facilitate the design and conduct of evaluations of service performance by national evaluation groups. Most experience has been gained in the field of MCH-FP, especially maternal care, but the method can be applied to any health programme subject.

6. Sample Size Determination in Health Studies

(S. K. Lwanga & S. Lemeshow, 1991)

A popular tool for aiding survey sample design. A computerized version is under development.

7. Assessment of Health Service Data - Its quality and use

(Under development - draft process description is available from SCI, HST, Geneva)

A procedure for assessing the generation and use of data in clinic settings, which is linked to the assessment of the performance of clinic diagnostic and case management tasks. It can be applied to selected types of services in various types of facilities. The procedure is used prior to preparing clinic guidelines and revising records and registers.

8. District Team Problem-solving Guidelines

(WHO/MCH-FPP/MEP/93.2)

Detailed guidance on how to plan and conduct team problem-solving at the district level, which has proven to be very effective in raising staff capability in using their own data. Workshop session guides and formats are included.

9. Strengthening Country Health Information - The Computer Component

(Available from the SCI Unit, HST, Geneva)

Procedures for improving the use of computers in the health sector with special attention to designing and maintaining practical health data bases for technical programme and administrative data management.

10. EPI INFO Version 6

A public domain word processing, data base and statistics system for epidemiology on micro computers. This free software is recommended for wide use in survey design and analysis, and modest data base maintenance, because of its user friendliness and continuing improvement by CDC, Atlanta. Versions exist in many languages.

11. EPI MAP

A public domain, simple geographical information system designed to work with EPI-INFO or DBF files to provide the graphical display of data. Both EPI INFO and EPI MAP are available from WHO Distribution and Sales, Geneva, Switzerland, and Centers for Disease Control and Prevention, Atlanta, Georgia, USA.

12. Guidelines for Improving Health Reports (Under development)

Guidelines and examples will be provided for improving the presentation of health data, in health care facilities, and within annual health reports and newsletters.

13. Handbook on Health Futures

(in press, expected in early 1998)

Description of "health futures" study purposes, approaches and specific methods suitable for use as teaching material as well as guidance for planning and conducting national health futures studies.

14. Design and Implementation of Health Information Systems

(A Textbook by Lippeveld, Sauerborn and Sapirie, under preparation, publication expected in 1998)

This book is to be an extensive treatment of the subject of national health information system design and development including chapters on:

1. Developing a framework for the design of HIS
2. Identification of information needs and indicators
3. Assessment of health information systems
4. Routine data collection methods
5. Non-routine data collection methods
6. Data flows, processing, quality
7. Use of information for improved decision-making in health services planning and management
8. Management of health information systems
9. Politics of health information systems reform and implementation strategies
10. Health information systems and community involvement
11. Use of computers in health information systems
12. Geographical information systems
13. Approaches to strengthening health information systems

15. Health Interview Surveys - Towards International Harmonization of Methods and Instruments

(European Series, No. 58, 1996, by de Bruin, A., H. S. J. Picavet, A. Nossikov)

The book contains description of health interview survey methodology and a set of recommended standard questionnaires.

16. The PHC Management Advancement Programme Series of Modules, Guides and Reference Materials

(Published by the Aga Khan Foundation, BP 6179, 1211 Geneva 6, Switzerland)

Contains user guides, facilitators guides and computer programmes covering modules such as:

1. Assessing information needs
4. Surveillance of morbidity and mortality
5. Monitoring and evaluating programmes
6. Assessing the quality of service
7. Assessing the quality of management
8. Cost analysis

17. Conceptual Framework and Guidelines for the Establishment of District-based Information Systems

(Rodrigues, Roberto J. and Kathleen Israel, PAHO/CPC/3.1/95.1, Pan American Health Organization, Office of Caribbean Program Coordination, Barbados, W. I., 1995)

This publication examines the issues related to the information function in local health systems, systems design and implementation methodologies, and the management and operation of information systems.

B. OTHER SELECTED REFERENCES

1. Guidelines for the Development of Health Management Information Systems (WHO/WPRO, Manila, 1993).

A general guideline covering a broad range of aspects related to the development, planning, implementation, maintenance, review, management and computer support for health management information systems.

2. Assessing District Health Needs, Services and Systems - Protocols for Rapid Data Collection and Analysis

(Available from AMREF, Kenya)

A practical guide, including question formats for health service assessment at the district level.

3. Health Information System Case Studies

(Available from the SCI Unit, HST, Geneva)

Descriptions of the process and results of applying these methodologies such as DTSP in Maldives and Mexico.

4. Workshop modules and exercises for training staff in the use of ICD-10

A self-learning package which explains how to code data extracted from case notes and death certificates using the ICD-10 tabular list and index.

5. TENDON - ICD-10 Computer-based Training Package

Basic training for ICD-10 and reorientation for coders familiar with ICD-9. Available from:
WHO Collaborating Centre, OPCS
Segensworth Road, Titchfield,

Fareham, Hampshire Tel: (0) 1329 813458
PO15 5RR, England Fax: (0) 1329 813289

6. Teaching Health Statistics -

A Guide for Lesson and Seminar Outlines

(Edited by S. K. Lwanga, Cho-Yook Tye and O. Ayeni, available from WHO Publication Distribution and Sales offices)

An updated version of the popular "Teaching Health Statistics - Twenty Lesson and Seminar Outlines" will soon be available which can be used for a variety of medical and paramedical staff during basic or in-service training.

7. Manuales Operativos

(5 Volumes/12 Chapters in Spanish - PALTEX Series HSP/UNI)

This collection of five volumes published by PAHO is directed to the strengthening of health programme administrators in management, epidemiology and operational methods, and includes a number of chapters which are relevant to health information systems:

8. Guidelines for Information Systems Development
9. Quality Management
10. Epidemiological Surveillance
11. Sanitary Surveillance
12. Environmental Surveillance

8. Guidelines on Assessing and improving Vital Statistics and Civil Registration Systems

(Available directly from UN Statistical Office, New York)

International Programme for Accelerating the Improvement of Vital Statistics and Civil Registration Systems (UNSO, WHO, IIVRS-1989)

Review and Assessment of the National Civil Registration and Vital Registration System (UNSO 1991)

Outline for Preparing a County Report of the Current Status of Vital Statistics and Civil Registration Systems (UNSO-1991)

Principles and Recommendations for a Vital Registration System (United Nations - Statistical Papers Series M, No 19, Rev 1)

Handbook of Vital Statistics and Methods (UN - Studies in Methods, Series F, No 35)

Vol. I - Legal, Organizational, Technical Aspects , Vol. II - Review of National Practices

9. Network for Strengthening Health Information (WHO/HST/97.1)

An annual SCI newsletter and directory of members of an informal network of health professionals involved in health monitoring, evaluation and futures studies. This directory is also available from the SCI WWW site. (Membership is granted on request to the SCI Unit, WHO, Geneva.)

10. Strengthening Health Information Systems in Africa - A strategy and plan of action of the WHO African Region.

(WHO, Brazzaville, 1995).

This document described an initiative of the African Regional Office of WHO aiming at enhancing technical cooperation with countries of the region over the five-year period 1995 - 1999.

11. Joint EU/WHO Copernicus Care Support Project - Summary of Final Report

(Available from EURO ESI Unit)

The report describes experiences and results of a project in 11 countries of central and eastern Eu-

rope held in 1995-96. The purpose of the project was to significantly improve the use of routinely collected health statistics for the management of health services by developing and disseminating national health service indicator packages.

12. Healthcare Information Management Systems - A Practical Guide

(Ball, M. J., J. V. Douglas, et al, Springer Verlag, New York, 1991)

A useful collection of guidelines for the development and implementation of management information systems.

13. Management Information Systems and Microcomputers in Primary Health Care

(Wilson, R. G., J. H. Bryant, et al, Aga Khan Foundation, 1988)

A practical guide based on experiences in the use of microcomputer-based information systems in developing countries.

14. Informatics and Telematics in Health - Present and Potential Uses

(World Health Organization, Geneva, 1988, 2nd edition in press)

Discusses the different ways in which informatics and telematics can be used to improve the quality and cost-effectiveness of services in the health sector. Addressed to health managers and professionals. Applications range from microcomputer maintenance of medical records in primary health care to mainframe-based systems for managing drugs.

15. Demographic and Social Statistics - Report of the Expert Group on the Statistical Implications of Recent Major United Nations Conferences.

(U. N. Statistical Commission, Twenty-ninth Session, E/CN.3/1997/16, 9 July, 1996)

The description of an expert group of an attempt to compile a list of indicators to form a suggested minimum national social data set (MNSDS)

16. World Health Organization Health Situation and Trend Assessment

(A contribution by Dr. H. R. Hapsara, Director HST, Geneva to the Encyclopaedia of Biostatistics, available in HST, Geneva)

A review, description and vision of WHO's programme of Health Situation and Trend Assessment.

17. PAHO Country Health Profiles

(Published in an annual series, *Health Statistics from the Americas*, the *Health Conditions in the Americas*, and also available within the PAHO website: <http://www.paho.org/english/country.htm>)

This presentation of country health information provides a tightly structured, and highly quantitative description for each country in the Americas of the general situation and trends, specific health problems and risks, and health services and resources which can be used as a model for national health data presentation.

18. Health For All Data Presentation System

(European Regional Office of WHO)

User-friendly software to provide easy access to data and present health statistics in graphical form. The European Health For All (HFA) data base applica-

tion and a number of national health service indicator packages are based on this software. The European HFA data base can be downloaded from the Internet: <ftp.who.dk> or <www.who.dk> (See Country Information)

19. World Wide Web Site of the Unit for Strengthening Country Health Information (SCI)

Found from the WHO Home page (WWW.WHO.CH) by proceeding through:
WHO Headquarters Major Programmes
Division of Health Situation and Trend Assessment
Unit of Strengthening Country Health Information

The site contains the objectives of the programme, recent activities, many of the documented products listed here, access to the WHO discussion group, messaging to SCI staff members and links to related sites.