10-Point Regional Strategy for Strengthening Health Information Systems

World Health Organization
Regional Office for South-East Asia

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10-Point

Regional Strategy for Strengthening Health Information Systems

World Health Organization
Regional Office for South-East Asia
New Delhi

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Foreword

Reliable and timely health information is a critical component in health system development. Collection of relevant data and its related analysis to provide necessary evidence for assessing the development and performance of health systems at national and sub-national levels is a major responsibility of any health information system. Health intelligence, and not merely health data/information as such, is increasingly being seen as the lifeblood of any health system by the health planners. To provide timely feedback and appropriate data to the programme managers for day-to-day action is a challenging task for the health information system.

In practice, health information systems rarely function systematically. They are generally fragmented and unresponsive to needs. This is largely due to the fact that insufficient attention has been paid to country capacity-building in this area. The result is apparent in the inability of most countries to assimilate the data needed to monitor progress towards achieving the Millennium Development Goals.

Lately, several global initiatives, networks, programmes, and projects have been launched by development partners to assist countries in the area of health information. It was with this in mind that the WHO Regional Office for South-East Asia took the initiative to develop a strategic framework to guide countries in strengthening and reorienting their national health information systems and to meet the changing needs and increasing demand from development partners for valid and reliable health information at all levels. In August 2006, the 59th Session of the WHO Regional Committee for South-East Asia endorsed the Regional Strategic Framework which served as a base for this publication.

This Regional Strategy is based on the results of a series of regional/country meetings and consultations. It was drafted and finalized in collaboration with all Member countries of the Region. Rich experience and vast expertise of representatives from the Ministries of Health, National Statistical Offices, as well as several renowned experts, resource persons, partners and colleagues have gone into the preparation of this document. It includes ten strategic areas with generic guidelines in each which could be addressed in accordance with the country-specific situation and priority. It proposes actions and initiatives countries may opt for in drafting their strategic and action plans, lists possible assistance from WHO and partners and selects indicators for monitoring progress in strengthening health information systems.

I sincerely hope that this Regional Strategy will facilitate harmonization of efforts related to strengthening health information systems in countries of the South-East Asia Region, particularly in monitoring progress towards achieving the Millennium Development Goals.

Samlee Plianbangchang

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Regional Director

Introduction

For the last several years, WHO, together with Member countries of the South-East Asia Region has undertaken activities to strengthen the countries' health information systems (HIS) and contributed to improving morbidity and mortality statistics. An intercountry consultation on strengthening HIS, held in 2001, finalized the generic protocol for monitoring and evaluation of HIS in the countries. During 2002 and 2003, based on this protocol, country reviews of health information systems were conducted and the results summarized in a draft regional framework paper. In addition, during 2002, vital registration reviews were conducted in some countries of the Region. The issue of transformation of data into information for evidence-based decision-making was addressed by a Workshop on Data Management for Evidence-based Decision Making, held in 2001. In 2003, the WHO Regional Office for South-East Asia organized a Regional Consultation on Reporting on Data-Sets on United Nations Millennium Development Goals (MDGs) and WHO Core Health Indicators. It discussed the process and mechanism at country level for data collection, collating and reporting. The Health Metrics Network (HMN) initiated by the WHO Director-General was launched during the World Health Assembly in 2005. Since then a debate on how to integrate tools and methods for health measurement and to build partnership in health information (World Health Statistics/Health System Metrics) has continued. A meeting of all WHO regions and WHO Headquarters regarding database of core health indicators was held and the basic indicator sets proposed. In September 2004, progress towards achieving MDGs in SEAR was discussed in the Health Ministers' Meeting. Initial discussions with the WHO Regional Office for the Western Pacific on strengthening HIS in Asia and the Pacific were held in December 2004 which resulted in identification of crucial areas to be addressed in formulating the regional strategies for strengthening HIS. In December 2005, an Intercountry Consultative Meeting on Strengthening Health Information Systems in the South-East Asia Region was held and the Regional Strategy for Strengthening Health Information Systems drafted.

Historical perspective

In countries of the South-East Asia Region, four phases of the health information development and use can be observed (Table 1). Before the 1980s, health information was limited to the routine service statistics and priority communicable diseases. After the Alma-Ata declaration in 1978, a concept of integrated national health information systems was recognized to meet the reporting requirement on the Health for All (HFA) indicators. During that period, the development and reporting of selected health indicators was emphasized, which included monitoring of the HFA indicators. During a convergent period of two decades, national health information systems

had been considered as a link between health management and health policy. Efforts had been focused on development of composite health indexes and summary measures of health within the health system performance framework. During the current era of global initiatives, i.e. Global Fund for AIDS, Tuberculosis and Malaria, Global Alliance for Vaccines and Immunization, Poverty Reduction Strategy Programmes, MDGs and HMN, the focus has been on national health information systems as a network of sub-components, emphasizing availability, quality, value and use of timely and accurate health information, particularly to facilitate evidence-based decisions, and as a network of all partners working in context of norms and standards in which WHO has a key role to play.

Table 1: Evolution of national health information systems (NHIS) in SEAR countries

Prior to Alma-Ata declaration (1978)	HFA 2000 era	Health systems performance assessment (HSPA) era	Present MDGs era (health metrics with networking)
NHIS concept was rarely practiced	NHIS concept was recognized	NHIS was seen as a pivotal link between health management and health policy debate	NHIS is seen as a network of federated sub-systems and components
Focus was on routine service statistics on communicable diseases, health activities, and health resources	Focus was on data to meet the reporting requirement on HFA indicators	Focus was on summary measures of health within HSPA framework	Focus is on development and use of routine service records at point of service delivery
Development of statistical tools and methods	Prolific development of health indicators	Development of health indexes	Building up time-place related databases common for all partners
No or little use of information technology (IT)	Beginning of IT use	IT use in full swing	Mapping of health resources and application of GIS/ mapping technology

Issues and challenges in health information systems

Public health decision-making is critically dependent on the timely availability of sound data. The role of the health information system is to collect, analyse and disseminate such data. Ministries of Health in countries of the South-East Asia Region have health information teams which directly or indirectly oversee the operations of the health-related data recording and reporting mechanisms. They compile data, produce reports and disseminate these as annual publications like the country annual health bulletin/annual health report/annual health information. In most cases, these publications are incomplete, outdated and not very useful for programme managers or for the policy debate and decision support. The contents and formats of these publications, expected to provide health information on the country, warrant revision and revitalization to meet the challenge, especially for global reporting of valid and reliable health information at national/subnational levels.

The common and main issues and challenges in health information systems strengthening in a majority of SEAR countries are as follows:

- Countries have not been able to use the health-related data effectively for policy debate and decision-making due to:
  - Data collection systems are overloaded with details which may not be required for policy decision-making;
  - Weak linkage in data transmission from one level to the next;
  - Required data is not available in a timely manner. Often, it is incomplete and thus not usable for evidence-based action;
  - Weak feedback mechanisms and products of HIS, and
  - Organizational culture which values and encourages analytical thinking is limited.
- NHIS are often not adequately equipped with tools and techniques of data analysis.
- Appropriate tools for transforming data into information for decision-making are not always applied properly.
- Disaggregated data are often not available in the form required by programme managers for day-to-day decision-making at the point of delivery of health service.
- Existing human resources are not sufficiently trained for applying the analytical tools and methods to synthesize information for decision-making.
- Health information systems are not well equipped for emergency preparedness and vulnerability reduction. Therefore, not responsive enough to help contain natural disasters and emergencies.
- Limited capacity (human and other resources) in HIS area.

Regional strategy for strengthening health information systems in South-East Asia Region

Goal

To improve the availability, quality and use of health information for enhanced efficiency and effectiveness of health programmes.

Objectives

- To validate, analyze and disseminate information on the regional health situation and trends;
- To enhance national capacity and capability in health planning and management by strengthening country health information systems, and
- To make sound evidence available for use in developing efficient and effective health policies.

The Strategy, developed and endorsed by Member States, consists of ten strategic areas as follows:

(1) Policy development, regulation and legislation on HIS-related issues.

(2) System analysis (health information system design/set-up and maintenance);

(3) Promotion of data quality;

(4) Appropriate application of information and communication technology (ICT);

(5) Enhancement of mechanisms for effective communication, cooperation and coordination;

(6) Development and allocation of HIS resources (human, physical, financial);

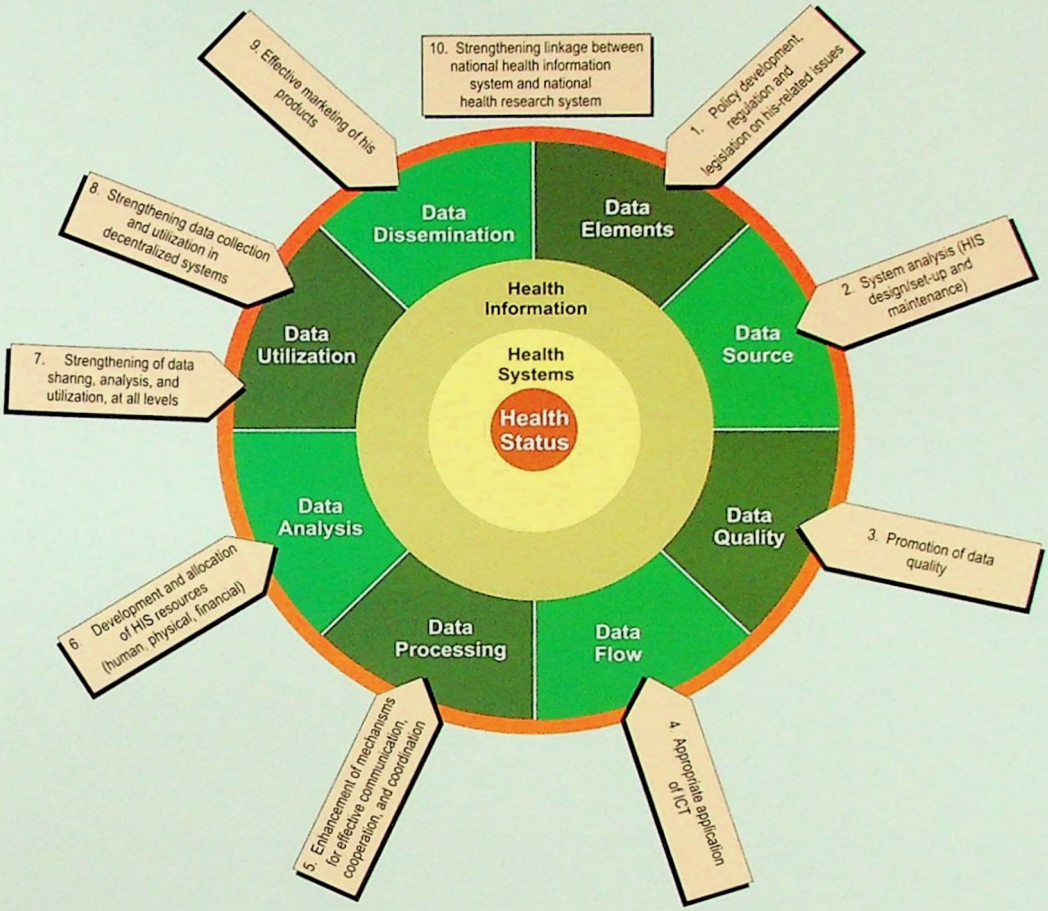
(7) Strengthening of data sharing, analysis and utilization, at all levels;

(8) Strengthening data collection and utilization in decentralized systems;

(9) Effective marketing of HIS products, and

(10) Strengthening linkages between Health Information System and Health Research System.

A conceptual framework is pictured in the diagram below. It shows improving health status as a goal (in the centre), to be achieved by a well-functioning health system as one of the important determinants of health, in which health information plays a crucial role. It also shows the relation of the 10 strategic areas to all aspects of data management for evidence-based decision-making.



In each strategic area, a strategy consists of:

- proposed actions and initiatives indicated by a decimal number;
- possible areas of WHO and partners' assistance indicated by light orange box, and
- indicators for monitoring implementation at the regional level indicated by light green box .

Strategic area 1: Policy development, regulation and legislation on HIS-related issues

1.1 Advocacy for HIS to be given higher global and national priority.

- Advocacy with governments in general, and health ministries in particular for greater political will and resource allocation for development and strengthening of HIS.
- Number of countries which have increased resource allocation for activities related to development and strengthening of HIS.

1.2 Develop policies on HIS-related issues (release of public information, confidentiality of medical records, electronic exchange of information, etc.).

- Support for the development of HIS-related policies.
- Number of countries which have developed and implemented policies on important HIS-related issues.

1.3 Provide/strengthen the legal basis and define regulatory mechanisms for different HIS-related activities (example, data collection from the private health sector, vital registration system, release of public information, and use of electronic medical records, etc.).

- Advocacy with countries in the development of important HIS-related legislation, like those related to vital registration systems, collection of private health sector data, etc.
- Support for the formulation/development of legislation, regulatory mechanisms and operational guidelines for HIS-related issues.
- Number of countries which have passed legislation related to HIS.
- Number of countries which have developed and disseminated operational guidelines for different HIS-related legislation and policies.

1.4 Develop and implement operational guidelines for HIS-related policies, regulations and legislation.

- Support for the development of operational guidelines.
- Number of countries which have developed operational guidelines for HIS-related policies, regulations and legislation.

1.5 Advocate for more rigid/stricter implementation of HIS-related legislation and policies.

- Support for the conduct of meetings and seminars for heightening awareness on the need for strict and rigid implementation of HIS-related legislation and policies.
- Number of countries which showed improvements in HIS performance as a result of stricter implementation of HIS-related legislation and policies (example, increase in the percentage completeness of birth and death registration; increase in the percentage coverage of reporting notifiable diseases by private physicians, etc.).

Strategic area 2: System analysis (health information system design/set-up and maintenance)

2.1 Conduct periodic, in-depth and comprehensive assessment of HIS and its sub-systems.

- Support for the conduct of HIS assessment studies.
- Number of countries conducting periodic, comprehensive and in-depth HIS assessment.

2.2 Develop and implement systematic plans for HIS development and strengthening (example, HIS masterplan for the country; IT masterplan; short-term HIS action plans; HIS strategic plans, etc.), including well-defined resource allocation.

- Support for the preparation of HIS masterplans/strategic plans.
- Number of countries which have developed HIS strategic plans.

2.3 Identification/periodic review of minimum essential datasets and core health indicators to be used and shared by different programmes within and outside of the MoH, and to meet international reporting requirements (example, MDGs).

- Support for the conduct of national workshops to identify/review minimum essential datasets and core health indicators.
- Number of countries which have systematically identified and collected minimum essential datasets, and are regularly generating core health indicators, including those needed for international reporting requirements (example, MDGs).

2.4 Link and harmonize different information systems and sub-systems among programmes and other units within the MoH.

- Support for the development/strengthening of HIS sub-systems.
- Support for the development/strengthening of a harmonized HIS.
- Support for the conduct of training activities on harmonized HIS.
- Support for the pilot-testing, evaluation, modification and finalization of design of the harmonized HIS, prior to nationwide implementation.

- Number of countries with the following HIS sub-systems in place: vital registration system; hospital information system; disease surveillance systems (for both communicable and noncommunicable diseases); finance, health facilities and equipment, and human resource information systems.
- Number of countries which have developed/designed, pilot-tested, evaluated, and implemented a harmonized HIS.

2.5 Develop linkage with/access to routinely produced health-related database collected/generated by agencies/entities outside the MoH (example, vital registration system, population data from the census office, private health sector, national health accounts, health insurance, socio-economic data, etc.).

- Advocate for the establishment of intersectoral linkages to facilitate access to and sharing of information with external agencies collecting health and health-related data.
- Number of countries in which the MoH have established linkages with other agencies like the National Statistics Office, and Ministry of Finance, etc. for the sharing of health and health-related information.

2.6 Develop/strengthen capacity to conduct on a periodic basis, research and special studies to supplement routine data collection systems (example, national health survey, demographic and health survey, sample registration system, and collection of biomarkers, etc.).

- Support for staff training on research methodologies (example, sampling designs, and development of data collection tools, etc.).
- Support for the conduct of research and special studies.
- Number of countries which have institutionalized the conduct of research and special studies to supplement routine data collection (example, number of countries which conduct a national health survey every 5/10 years, etc.).

2.7 Develop/strengthen/implement maintenance plan for HIS-related resources (example, improvement and maintenance of physical facilities; upgrading and replacement of computer hardware and software, etc.).

- Support for the development of maintenance plans.
- Support for the improvement of physical facilities; upgrading and replacement of computer software and hardware.

- Number of countries which have developed, documented and disseminated maintenance plans for HIS-related resources.
- Number of countries which have regular budgetary allocation for the implementation of the maintenance plan for HIS resources.
- Number of countries which have implemented activities in accordance with the maintenance plan (example, number of computers upgraded/ replaced using country maintenance budget, etc.).

2.8 Develop/enhance mechanisms for active involvement of different stakeholders in undertaking management functions for HIS (example, provide general directions; standardization of system inputs and outputs; clearinghouse for data collection forms; periodic and regular review of data requirements, and periodic HIS performance assessment, etc.).

- Advocacy with countries in eliciting active stakeholder involvement in HIS management.
- Support for developing effective mechanisms and defining management functions for HIS.
- Number of countries which have developed functional mechanisms for stakeholder involvement in HIS management (example, number of countries with a functional multi-sectoral national HIS Committee).

2.9 Develop and disseminate User's Manuals for HIS and its sub-systems.

- Support for the preparation of the HIS User's Manual.
- Support for the production/publication of the HIS User's Manual.
- Number of countries which have developed, reproduced and disseminated their HIS User's Manual.

Strategic area 3: **Promotion of data quality**

3.1 Develop, document, disseminate and implement data quality standards and data quality control mechanisms (example, completeness of medical records, and use of ICD).

- Support for the development of data quality standards and data quality control mechanisms.
- Support for the documentation, reproduction and dissemination of data quality standards and data quality control mechanisms.
- Number of countries which have developed, documented and disseminated data quality standards and control mechanisms.

3.2 Produce and disseminate documents (example, instruction manuals, ICD manual, data dictionary, etc.) which can be used as reference materials by staff in accomplishing data collection and reporting requirements.

- Support for the development of reference materials (example, instruction manuals, data dictionary, etc.), including translation services if necessary.
- Support for the reproduction/purchase and dissemination/distribution of reference materials (example, ICD10 manuals).
- Number of countries which have developed, reproduced and disseminated reference materials (example, data dictionary, instruction manuals, etc.) for HIS staff in accomplishing data collection and data reporting requirements.

3.3 Develop/strengthen capacity of surveillance and early warning systems to produce real-time data, especially during disease outbreaks, epidemics and disasters.

- Support for the design and development of early warning and rapid surveillance systems.
- Support for the installation of communication and other facilities needed for the rapid transmission and easy access to data.
- Support for staff training on early warning/surveillance systems.
- Number of countries with functional surveillance and early warning systems in place.

3.4 Provide staff training on data quality, including the use of ICD and other international classification standards, the vital registration system and International Health Regulations.

- Support for the conduct of training on data quality, including ICD training.
- Support for the purchase and distribution of ICD Manuals.
- Number of ICD trainings conducted, by country and type of staff trained.

3.5 Design and implement a regular and institutionalized system for the monitoring and evaluation of data quality at all levels.

- Support for the design and development of an institutionalized system for monitoring and evaluation of data quality at all levels, including the development and documentation of operational guidelines for such a system.
- Support for training on the implementation of institutionalized system for monitoring and evaluation of data quality at all levels.
- Number of countries which have developed an institutionalized system for the monitoring and evaluation of data quality at all levels.
- Number of countries which have allocated a budget for activities related to the monitoring and evaluation of data quality control at all levels.

3.6 Conduct special studies in situations where data collection and data quality are big problems (example, sentinel surveillance system, sample vital registration system, etc.).

- Support for the conduct of special studies.
- Number of countries conducting special studies to determine data quality.

3.7 Establish linkages with relevant institutions to improve the coverage and timely transmission of information for the vital registration and disease surveillance systems.

- Support for the planning and design of linkages with other institutions to improve the coverage and timely transmission of data.
- Number of countries wherein the MoH have established linkages with other institutions to improve the coverage and timely transmission of information for vital registration and disease surveillance systems.

3.8 Conduct activities to heighten community awareness on the need for birth and death registration.

- Support for the implementation of activities to heighten public awareness on birth and death registration.
- Number of countries which have conducted activities to heighten public awareness on the need for birth and death registration.

3.9 Provide incentives for the collection and reporting of good quality data.

- Support for the provision of incentives.
- Number of countries providing incentives for the collection and reporting of good quality health information.

Strategic area 4: Appropriate application of information and communication technology (ICT)

4.1 Strengthen capacity to transmit, access and share information at different levels as well as between MoH and other public health and health-related institutions: conduct needs assessment, provide computer hardware, software and other information infrastructure (example, email and internet access, networking, eHealth, etc.) at appropriate levels, ensuring sustainability.

- Support for the assessment and design of ICT inputs appropriate for the country.
- Support for procurement/installation of communication equipment/ infrastructure necessary for the rapid transmission and access of data from the peripheral to higher levels (example, radios, fax machines, modems, etc.).
- Support for the procurement/provision of computer hardware, software and other information infrastructure.

- Number of countries which have strengthened communication facilities for the rapid transmission and access of data from the peripheral to higher levels.
- Number of countries with computerized HIS at national and sub-national levels.

4.2 Expand IT application (example, geographic information system (GIS), service availability mapping (SAM), etc.).

- Support for staff training on expanded IT application (example, GIS, SAM, etc.).
- Support for the procurement of software and equipment necessary for expanded IT application (example, GIS software, PDAs, etc.).

- Number of countries applying GIS, SAM, etc. as part of their HIS.

4.3 Develop and implement training programme on IT for HIS staff at different levels.

- Support for the development and conduct of training programmes on IT for HIS staff at different levels.

- Number of countries which have developed and conducted training programmes on IT for HIS staff at different levels.

3.4 Provide staff training on data quality, including the use of ICD and other international classification standards, the vital registration system and International Health Regulations.

- Support for the conduct of training on data quality, including ICD training.
- Support for the purchase and distribution of ICD Manuals.
- Number of ICD trainings conducted, by country and type of staff trained.

3.5 Design and implement a regular and institutionalized system for the monitoring and evaluation of data quality at all levels.

- Support for the design and development of an institutionalized system for monitoring and evaluation of data quality at all levels, including the development and documentation of operational guidelines for such a system.
- Support for training on the implementation of institutionalized system for monitoring and evaluation of data quality at all levels.
- Number of countries which have developed an institutionalized system for the monitoring and evaluation of data quality at all levels.
- Number of countries which have allocated a budget for activities related to the monitoring and evaluation of data quality control at all levels.

3.6 Conduct special studies in situations where data collection and data quality are big problems (example, sentinel surveillance system, sample vital registration system, etc.).

- Support for the conduct of special studies.
- Number of countries conducting special studies to determine data quality.

3.7 Establish linkages with relevant institutions to improve the coverage and timely transmission of information for the vital registration and disease surveillance systems.

- Support for the planning and design of linkages with other institutions to improve the coverage and timely transmission of data.
- Number of countries wherein the MoH have established linkages with other institutions to improve the coverage and timely transmission of information for vital registration and disease surveillance systems.

3.8 Conduct activities to heighten community awareness on the need for birth and death registration.

- Support for the implementation of activities to heighten public awareness on birth and death registration.
- Number of countries which have conducted activities to heighten public awareness on the need for birth and death registration.

3.9 Provide incentives for the collection and reporting of good quality data.

- Support for the provision of incentives.
- Number of countries providing incentives for the collection and reporting of good quality health information.

Strategic area 4: Appropriate application of information and communication technology (ICT)

4.1 Strengthen capacity to transmit, access and share information at different levels as well as between MoH and other public health and health-related institutions: conduct needs assessment, provide computer hardware, software and other information infrastructure (example, email and internet access, networking, eHealth, etc.) at appropriate levels, ensuring sustainability.

- Support for the assessment and design of ICT inputs appropriate for the country.
- Support for procurement/installation of communication equipment/ infrastructure necessary for the rapid transmission and access of data from the peripheral to higher levels (example, radios, fax machines, modems, etc.).
- Support for the procurement/provision of computer hardware, software and other information infrastructure.

- Number of countries which have strengthened communication facilities for the rapid transmission and access of data from the peripheral to higher levels.
- Number of countries with computerized HIS at national and sub-national levels.

4.2 Expand IT application (example, geographic information system (GIS), service availability mapping (SAM), etc.).

- Support for staff training on expanded IT application (example, GIS, SAM, etc.).
- Support for the procurement of software and equipment necessary for expanded IT application (example, GIS software, PDAs, etc.).

- Number of countries applying GIS, SAM, etc. as part of their HIS.

4.3 Develop and implement training programme on IT for HIS staff at different levels.

- Support for the development and conduct of training programmes on IT for HIS staff at different levels.

- Number of countries which have developed and conducted training programmes on IT for HIS staff at different levels.

4.4 Coordinate donor requirements, especially in relation to the use of specialized softwares.

- Establish mechanisms for the coordination of donor requirements.
- Number of countries which have coordinated donor requirements, especially in relation to specialized softwares.

Strategic area 5: Enhancement of mechanisms for effective communication, cooperation and coordination

5.1 Advocate for the development and implementation of a harmonization mechanism among donors at the international level.

- Conduct activities for the development and implementation of a harmonization mechanism among donors at international levels.
- Development and existence of a harmonization mechanism among donors at international levels.

5.2 Develop and implement a strong country policy on HIS coordination/partnerships among countries, donors, agencies and HIS stakeholders.

- Support for the development and implementation of policies on HIS coordination/partnerships among countries, donors, agencies and HIS stakeholders.
- Number of countries which have developed and implemented policies on HIS coordination/partnerships among countries, donors, agencies and HIS stakeholders.

5.3 Involve donors and other stakeholders in designing the HIS.

- Support for the conduct of activities involving donors and other stakeholders in designing the HIS.
- Number of countries where donors and stakeholders are involved in designing the HIS.

5.4 Develop/enhance strategies for effective communication between data providers and data users at all levels, including the provision of feedback mechanisms.

- Support for the development of strategies for effective communication between data users and data providers, including feedback mechanisms.
- Number of countries with operational and effective communication strategies for data users and data providers, including feedback mechanisms.

Strategic area 6: Development and allocation of HIS resources (human, physical, financial)

6.1 Advocate for stronger development and greater allocation of HIS resources: strengthening of the HIS workforce; greater budgetary allocation for HIS-related activities and needs, and improvement of HIS-related facilities, including ICT.

- Advocacy with governments for greater allocation of resources for HIS-related activities.
- Number of countries which have increased their resource allocation for HIS-related activities.

6.2 Assess/review HIS human resource requirements at different levels in both public and private sectors (example, number and type of staff needed, job descriptions, staff qualifications, etc.) and implement corrective measures as needed.

- Support for the conduct of HIS human resource assessment at different levels.
- Number of countries which have conducted an assessment of their HIS human resource requirements at different levels.

6.3 Develop/enhance and implement career development plan for HIS workforce (example, development of career path, provision of benefits and incentives, etc.).

- Advocacy for countries to develop career development plans for the HIS workforce.
- Number of countries which have developed and implemented career development plans for the HIS workforce (example, number of HIS positions created, number of countries which have developed and allocated a budget for the implementation of incentive schemes for HIS staff, etc.).

6.4 Develop and implement training programmes on health information sciences and related fields (example, biostatistics, epidemiology, demography, etc.) and other forms of specialized training for data providers and data users at all levels.

- Support for long/short-term fellowships (both degree and non-degree, local and abroad) for training in health information sciences.

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- Support for the development of training materials to be used for local training on health information sciences.
- Support for the conduct of in-country short-term non-degree training in health information sciences and related fields.

- Number of fellows trained in health information sciences and related fields, by type of training and country.
- Number of in-country short-term non-degree training courses in health information sciences and related areas conducted, by country.

6.5 **Assess/improve HIS-related physical facilities (example, storage space for medical records, computer room, etc.).**

- Support for improvement of HIS-related physical facilities.

- Number of countries which have implemented improvement projects for HIS-related physical facilities.

6.6 **Allocate funds for HIS-related activities, including the conduct of special studies and sample surveys.**

- Advocacy for regular allocation of funds from the country health budget, for HIS-related activities.

- Number of countries which have regular allocations in their country health budgets for HIS-related activities.

6.7 **Resource sharing for HIS development, strengthening and maintenance by units within the MoH, donor agencies, private organizations and NGOs.**

- Advocacy with countries and donor agencies for the adoption of a resource-sharing mechanism for HIS development and maintenance.

- Number of countries which have implemented a resource-sharing mechanism among units within the MoH and among donors, for HIS development and maintenance.

Strategic area 7: Strengthening of data sharing, analysis and utilization, at all levels

7.1 Develop/strengthen mechanisms to facilitate vertical and horizontal transmission of information within the MoH.

- Support for the design and installation of mechanisms to facilitate easy access/sharing/interfacing of databases among different information sub-systems within the MoH (example, LAN for computerized systems).
- Number of countries which have developed and implemented mechanisms to facilitate easy access/sharing/interfacing of database among different information sub-systems within the MoH.

7.2 Provide/facilitate access to relevant external data sources, both local and international (example, Memorandum of Agreement with other agencies for the exchange and sharing of data, creation of/membership in multi-sectoral technical working groups, membership in local and international health information networks, etc.).

- Advocacy for the establishment of linkages between the MoH and other local and international institutions for the exchange and sharing of health and health-related data.
- Number of countries where the MoH has established linkages with local and international institutions for the exchange and sharing of health and health-related data.

7.3 Establish/enhance an integrated health database or "data warehouse" at national and sub-national (example, region, province, district, sub-district) levels.

- Support for the design and development/enhancement of a health "data warehouse" at national and sub-national levels.
- Number of countries which have established/enhanced a health "data warehouse" at national and sub-national levels.

7.4 Develop country-level capability for data analysis and the application of methodologies to address data problems (example, use of census data to estimate mortality levels; derivation of country-level estimates for important parameters and indicators like the prevalence and incidence of diseases, etc.).

- Support for the conduct of short-term non-degree training in quantitative methods in the Region and in countries.

- Number of training programmes in quantitative methods conducted in the Region and in countries.

7.5 **Develop/apply appropriate data analysis techniques to address specific areas of interest to data users (example, generation of specific morbidity and mortality rates according to geographic (by region, province, etc.) and demographic variables (by age, sex, cause), time series analysis for determination of trends, risk factors, gender sensitivity, equity, poverty reduction, etc.).**

- Support for the application of appropriate data analysis techniques to address specific areas of interest to data users.
- Number of countries producing data or maintaining database in a form amenable to further analysis to address specific areas of interest (example, disaggregated data; time series data, risk factor data, etc.).

7.6 **Develop and implement training programmes on data utilization for programme planning, management, monitoring, evaluation, and policy formulation for MoH staff at different levels.**

- Support for the development and reproduction of training materials on data utilization.
- Support for the conduct of training programmes on data utilization for different types of data users at different levels.
- Number of countries which have conducted training programmes in data utilization for different types of data users at different levels.

7.7 **Develop mechanisms to facilitate the transmission of essential health information/ evidence to policy and law makers, and its transformation into policy and action (example, creation of Technical Working Group, conduct of regular briefings with policy-makers, etc.).**

- Support for the design and development of mechanisms to facilitate transformation of health information/evidence into policy and action.
- Number of countries which have developed mechanisms for the transformation of health information/evidence into policy and action.
- Number of legislations enacted/policies developed/important decisions made based on data from the HIS.

7.8 **Provide incentives to government units, organizations, etc. for good performance in utilization of health information for action.**

- Support for the development of operational guidelines for the provision of incentives for good performance in utilizing health information for action.
- Number of countries which provide incentives for good performance in utilizing health information for action.

Strategic area 8: Strengthening data collection and utilization in decentralized systems

8.1 Develop and implement mechanisms to improve the quality of district-level data and their complete and timely transmission from the district to provincial and national levels, under a decentralized system.

- Support for the development and implementation of mechanisms to improve data quality at the district level, and ensure the timely transmission of data from the district to the provincial and national levels.
- Number of countries with decentralized systems, which have improved data quality at the district level.
- Number of countries with decentralized systems which have developed mechanisms for complete and timely transmission of data from the district to the provincial and national levels.

8.2 Train district-level staff on data analysis and utilization for programme planning, monitoring, management and evaluation.

- Support for the training of district-level staff on data analysis and utilization for programme planning, monitoring, management and evaluation.
- Number of countries which have trained district-level staff on data analysis and utilization.

8.3 Develop and implement mechanisms for the proper dissemination of integrated district-level data.

- Support for the development and implementation of mechanisms for the proper dissemination of integrated district-level data.
- Number of countries with decentralized systems which have disseminated integrated district-level data widely.

Strategic area 9: Effective marketing of HIS products

9.1 Conduct needs assessment and situational analysis for the marketing of HIS products.

- Support for the conduct of needs assessment and situational analysis for the marketing of HIS products.
- Number of countries which have conducted needs assessment and situational analysis for the marketing of HIS products.

9.2 Increase awareness of data users (both within and outside the MoH) on HIS products (example, types of health information available, how they can be accessed, etc.), using the services of a professional for the marketing of such products, as needed.

- Support for the implementation of activities aimed to create awareness of HIS products.
- Number of countries implementing marketing strategies for HIS products.

9.3 Regularly publish integrated HIS summary reports covering the core health indicators, including the MDGs (example, annual health bulletins, health system profiles, etc.).

- Support for the preparation, publication and distribution of integrated HIS summary reports.
- Number of countries which regularly publish integrated HIS summary reports.

9.4 Improve the quality and content of HIS-related reports and publications.

- Support in improving the quality and content of HIS reports (undertaking comparative analysis, inclusion of analytic write-ups, including data and analysis on topics of current interest, etc.).
- Support for the publication and distribution of analytic reports.
- Number of countries with regular HIS publications which include not only presentations (graphs and tables) but also critical analysis of data.

9.5 Increase the types/modes, coverage and frequency of dissemination of HIS products for all types of audience, from the general public to policy-makers and national government officials (example, members of the cabinet, parliament, etc.), and the international community.

- Support for the design and development of different modes of dissemination of HIS products appropriate for different types of audience and users.

- Financial support for the reproduction and distribution/conduct of different kinds of dissemination materials/activities.
- Number and types of dissemination materials/activities for HIS products developed/implemented by countries.

9.6 Develop, maintain and market the MoH website.

- Support for the development, maintenance and marketing of the MoH website.
- Number of countries which have developed, maintained and marketed the MoH website.
- Number of countries posting updated health information on the MoH website.

Strategic area 10: Strengthening linkage between the national health information system and the national health research system

10.1 Advocate for generation of research-based evidence in the health information area.

- Support for orientation meetings and workshops for increasing awareness on the need for research-based evidence to support health information.
- Number of countries which have developed and implemented policies for research in the health information area.

10.2 Develop/enhance mechanisms to facilitate the dialogue between national HIS and health research institutions to undertake operations research on issues related to health information.

- Support in identification of issues and the strategic plan.
- Number of countries which have developed plans for operations research.

10.3 Advocate for involvement of research institutions, collaborating centres, and individual researchers engaged in health system research to undertake studies on issues related to application of health measurement tools and methods.

- Support for studies on application of global burden of disease methodology, health system performance assessment, and other summary measures of population health.
- Number of countries which have developed plans for measuring health status.
- Number of countries which have developed adequate human resource capacity and analytical capability for such measures.

10.4 Enhance facilitation/mechanisms for transmission of results of research studies to help validate the estimates produced based on disease surveillance data.

- Support to facilitate easy access/sharing/interfacing of databases.
- Number of countries which have developed and implemented mechanisms to facilitate easy access to health system research studies.

10.5 **Develop at national/sub-national-level, the capacity for probing into the routine service records, bringing up any issue requiring action by programme managers, and relating it to meta-data of research studies.**

- Meetings/workshops/fellowships to raise awareness of the importance of a closer look at routine records for reporting to initiate timely action where it is needed most.
- Number of countries which have developed and implemented mechanisms for health system research at point of health service delivery.

From strategy to action

Using the strategic framework as a guide and considering country priorities and the level of development in the HIS area, countries may wish to further elaborate the country action plans for strengthening HIS, which were drafted and presented during the intercountry consultative meeting in December 2005.

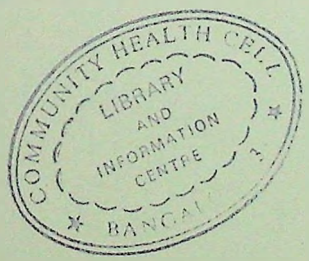
It is a Regional Strategy, drafted after several consultative meetings and discussions with Member countries. Since the health information systems in countries of the Region are at various stages of development and strengthening, the countries may opt for different steps in their plans related to improving their HIS as follows:

- situation analysis/assessment of their HIS, by involving all stakeholders and by using available assessment tools; or
- selecting strategic areas to be addressed as a priority based on previous reviews, assessments and changing needs, and
- based on results of the assessment, prioritizing and making a short- and long-term plan of activities for strengthening their HIS including indicators, time-frame and an estimation of the cost.

Alignment of the stakeholders and partners in health with the countries' plan for strengthening HIS would be crucial for successful implementation of the action plan. To achieve this, bringing the partners together during both the planning and implementation phases is essential. Ownership of the data by countries at both the national and sub-national levels should be emphasized and expressed by its use at various levels of the health system for evidence-based decisions.

WHO is prepared to technically support the countries in their planning and implementation efforts. In addition to its technical assistance, WHO would play a catalyzing role in harmonization of the partners in health and their work related to the countries' HIS.

Regional indicators proposed in this Strategy will be used for monitoring, and reviewing the progress and for evaluation of the achievements related to countries implementation of the national strategies, 2006-2015. Periodic programme managers meetings and external reviews of the countries' HIS in view of the possible changing needs would be held. The Health Metrics Network tool for assessment of the national HIS might be considered as a standard for reviewing the progress in strengthening various components of the HIS at the national and sub-national levels.



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