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Regional Strategy on 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. Health information systems in countries of the WHO South-East Asia (SEA) Region are at various stages of development and there are several global initiatives, networks, programmes and projects that have been launched by development partners to assist Member States in health information system development.

The WHO Regional Office for the South-East Asia took the initiative to develop a strategic framework to guide countries in strengthening and reorienting their national health information systems. After a series of country consultations, a 10-Point Regional Strategy for Strengthening Health Information Systems was developed in 2005. The strategy was endorsed at the Fifty-ninth session of the Regional Committee held in August 2006. All countries have reviewed their national health information systems, and have taken action to align them with the regional strategic framework.

Since there are many new developments in the field of health information and information communication technology, one of the Member States has suggested including “Regional Strategy on Health Information Systems” as an agenda item for the Sixty-third Session of the Regional Committee.

The High-Level Preparatory (HLP) Meeting held in the Regional Office in New Delhi from 28 June to 1 July 2010 reviewed the working paper and made the following recommendations:

Actions by Member States

- (1) The curricula for health professionals and basic health workers should be reviewed and improved in line with new developments in the area of health information systems.
- (2) The regional strategy on health information systems should continue to be implemented to ensure the use of good-quality data for decision-making at all levels.

Action by WHO-SEARO

- The Regional Office should continue to support Member States in implementing the Regional Strategy on Strengthening Health Information Systems, and in reviewing and reporting on the progress of implementation regularly to Member States.

The working paper and HLP recommendations based on it are submitted to the Sixty-third Session of the Regional committee for its consideration. The Committee is also requested to consider the draft resolution on the subject.

Background

1. 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 subnational levels is the major responsibility of any national health information system. Providing complete, timely, good-quality health information/data for programme managers for evidence-based decision-making is a challenging task for health information managers of Member States.

2. Four distinct phases of health information system development can be observed in Member States of the SEA Region over the last four-five decades (Table 1) and they are:

- (1) The era prior to the Alma-Ata Declaration on Health For All by 2000 (Before the 1980s);
- (2) The Health-for-all by 2000 (HFA 2000) era (between 1980 and 2000);
- (3) The health system performance assessment (HSPA) era (between 2000 and 2005); and
- (4) The Millennium Development Goals (MDGs) era. (2005 onwards).

Table 1: Evolution of national health information systems (NHIS) in countries of the SEA Region

| | Prior to Alma-Ata declaration | HFA 200 era | HSPA era | MDG era |
|-----------|---|---|---|--|
| Concept | NHIS concept was rarely practised. | NHIS concept was recognized. | NHIS was seen as pivotal link between health management and health policy debate. | NHIS is seen as a network of federated subsystems and components. |
| Focus | Focus was on routine service statistics on communicable diseases, health activities and health resources. | Focus was on data to meet the reporting requirements on HFA indicators. | Focus was on summary measures of health within the HSPA framework. | Focus is on development and use of routine service records at point-of-service delivery. |
| Content | Development of statistical tools and methods. | Prolific development of health indicators. | Development of health indexes. | Building up time-place related databases common to all partners. |
| Use of IT | No or little use of information technology (IT). | Beginning of use of IT. | IT use in full swing. | Mapping of health resources, geographic information system (GIS) technology and observatories. |

3. During the last three decades WHO, together with Member States of the SEA Region, made a concerted effort to develop and strengthen the countries' health information systems (HIS) and contributed to improve morbidity and mortality statistics and data collected from routine health service delivery systems. The Regional Office has conducted a large number of regional meetings, consultations and workshops to assist countries in strengthening health information systems. Below are listed some of the very important meetings held during the last decade in this subject:

- (1) Meeting of the High Level Task Force on the World Health Report 2000;
- (2) Regional Consultation and Technical Workshop on Health System Performance Assessment, 2001;
- (3) Intercountry Consultation on Strengthening Health Information Systems in Countries of the South-East Asia Region 2001;
- (4) Intercountry Workshop on Data Management for Evidence-based Decision-making, 2001;
- (5) Regional Consultation on Reporting of Datasets on UN Millennium Development Goals and WHO Core Health Indicators, 2003;
- (6) Intercountry Training Workshop on Tools and Methods for Health Measurement, 2003;
- (7) Bi-regional Consultation on Strengthening HIS in Asia and the Pacific, 2004;
- (8) Regional Consultation on 10-point Regional Strategy for HIS Strengthening in countries of the SEA Region, 2005;
- (9) Service Availability Mapping (SAM), Training of Trainers, Intercountry Orientation Workshop, 2006;
- (10) Regional Consultation on Mortality Statistics (Vital Registration System), 2007;
- (11) Regional Workshop for Trainers on the International Classification of Diseases (ICD) 2007;
- (12) Regional Workshop on Health Statistics Reporting (Annual Health Bulletins), 2007;
- (13) Regional Consultation on Use of Health information for Decision-making, 2008; and
- (14) Regional workshop on Strengthening Use of Health Information at the District Level, 2009.

Regional Strategy for Strengthening Health Information Systems

4. Several global initiatives, networks, programmes and projects have been launched by development partners to assist countries in the area of health information system development. The demand for a wider range of health information got enhanced with health sector performance assessment, burden of diseases assessment and MDG initiatives. Considering the new requirement of a wider range of information generation through national health information systems for policy, programme management, performance assessment and monitoring of the progress of achieving health-related MDGs, the Regional Office 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 demands from development partners for valid and reliable health information at all levels.

5. In 2005, after several consultations, the Regional Office developed a 10-Point Regional Strategy for Strengthening Health Information Systems in Member States with the goal to improve the availability, quality and use of health information for enhanced efficiency and effectiveness of health programmes. The objectives of the strategy are:

- to validate, analyse 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.

6. The strategy developed by the Regional Office has 10 strategic areas to address common and main issues and challenges in health information systems strengthening in the majority of countries. The strategic areas are:

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

- Advocacy for HIS to be given higher global and national priority.
- Develop policies on HIS-related issues (release of public information, confidentiality of medical records, and electronic exchange of information, etc.).
- 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.).
- Develop and implement operational guidelines for HIS-related policies, regulations and legislation.
- Advocate for a more rigid/stricter implementation of HIS-related legislation and policies.

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

- Conduct periodic, in-depth and comprehensive assessment of HIS and its subsystems.
- Develop and implement systematic plans for HIS development and strengthening (example, HIS master plan for the country; IT master plan; short-term HIS action plans; and HIS strategic plans, etc.), including well-defined resource allocation.

- Identification/periodic review of minimum essential datasets and core health indicators to be used and shared by different programmes within and outside of the Ministry of Health (MoH), and to meet international reporting requirements (example, MDGs).
- Link and harmonize different information systems and subsystems among programmes and other units within the MoH.
- 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, and socioeconomic data, etc.).
- 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.).
- 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.).
- 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; clearing house for data collection forms; periodic and regular review of data requirements, and periodic HIS performance assessment, etc.).
- Develop and disseminate User's Manuals for HIS and its sub-systems.

Strategic Area 3: Promotion of data quality

- Develop, document, disseminate and implement data quality standards and data quality control mechanisms (example, completeness of medical records, and use of ICD).
- 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.
- Develop/strengthen capacity of surveillance and early warning systems to produce real-time data, especially during disease outbreaks, epidemics and disasters.
- Provide staff training on data quality, including the use of ICD and other international classification standards, the vital registration system and International Health Regulations.
- Design and implement a regular and institutionalized system for monitoring and evaluation of data quality at all levels.
- Establish linkages with relevant institutions to improve the coverage and timely transmission of information for vital registration and disease surveillance systems.

- Conduct activities to heighten community awareness on the need for birth and death registration.
- Provide incentives for the collection and reporting of good quality data.

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

- 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.
- Expand IT application (example, geographic information system (GIS), service availability mapping (SAM), etc.).
- Develop and implement training programme on IT for HIS staff at different levels.
- Coordinate donor requirements, especially in relation to the use of specialized softwares.

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

- Advocate for the development and implementation of a harmonization mechanism among donors at the international level.
- Develop and implement a strong country policy on HIS coordination/partnerships among countries, donors, agencies and HIS stakeholders.
- Involve donors and other stakeholders in designing the HIS.
- Develop/enhance strategies for effective communication between data providers and data users at all levels, including the provision of feedback mechanisms.

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

- 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.
- Assess/review HIS human resource requirements at different levels in both public and private sectors (example, number and type of staff needed, job descriptions and staff qualifications, etc.) and implement corrective measure as needed.
- Develop/enhance and implement career development plan for HIS workforce (example, development of career path and provision of benefits and incentives, etc.).

- Develop and implement training programmes on health information sciences and related fields (example, biostatistics, epidemiology and demography, etc.) and other forms of specialized training for data providers and data users at all levels.
- Assess/improve HIS-related physical facilities (example, storage space for medical records and computer room, etc.).
- Allocate funds for HIS-related activities, including the conduct of special studies and sample surveys.
- Resource-sharing for HIS development, strengthening and maintenance by units within the MoH, donor agencies, private organizations and NGOs.

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

- Develop/strengthen mechanisms to facilitate vertical and horizontal transmission of information within the MoH.
- Provide/facilitate access to relevant external data sources, both local and international (example, Memorandum of Agreement with other agencies for exchange and sharing of data, creation of/membership in multisectoral technical working groups and memberships in local and international health information networks, etc.).
- Establish/enhance an integrated health database or “data warehouse” at national and subnational (example, region, province, district, subdistrict) levels.
- 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.).
- 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 and poverty reduction, etc.).
- Develop and implement training programmes on data utilization for programme planning, management, monitoring, evaluation and policy formulation for MoH staff at different levels.
- 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 a technical working group, and conduct of regular briefings with policy-makers, etc.).
- Provide incentives to government units and organizations, etc. for good performance in utilization of health information for action.

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

- 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.
- Train district-level staff on data analysis and utilization for programme planning, monitoring, management and evaluation.
- Develop and implement mechanisms for proper dissemination of integrated district-level data.

Strategic Area 9: Effective marketing of HIS products

- Conduct needs assessment and situational analysis for marketing of HIS products.
- Increase awareness of data users (both within and outside the MoH) on HIS products (example, types of health information available, and how they can be accessed, etc.), using the services of a professional for marketing of such products, as needed.
- Regularly publish integrated HIS summary reports covering the core health indicators, including the MDGs (example, annual health bulletins and health system profiles, etc.).
- Improve the quality and content of HIS-related reports and publications.
- 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, member of the cabinet, parliament, etc.), and the international community.
- Develop, maintain and market the MoH website.

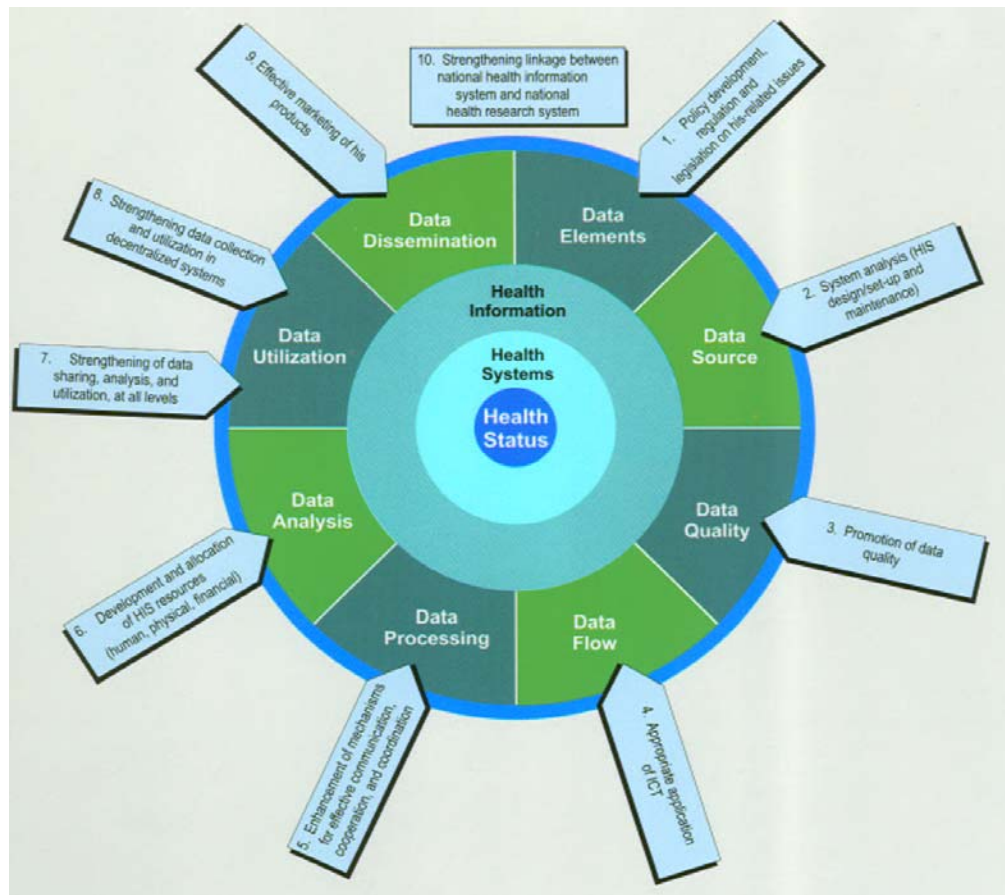
Strategic Area 10: Strengthening linkage between the national health information system and the national health research system

- Advocate for generation of research-based evidence in the health information area.
- Develop/enhance mechanisms to facilitate the dialogue between national HIS and health research institutions to undertake operations research on issues related to health information.
- 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.
- Enhance facilitation/mechanisms for transmission of results of research studies to help validate the estimates produced, based on disease surveillance data.
- Develop at national/subnational-level, the capacity for probing into routine service records, bringing up any issue requiring action by programme managers, and relating it to meta-data of research studies.

7. A conceptual framework is shown in the figure. It shows that improving the health status is the goal (in the centre), and that it can be achieved by a well-functioning health system as it is one of the important determinants of health, and also that health information plays a crucial role in this process. It also depicts the relationship that the 10 strategic areas have with all aspects of data management for evidence-based decision-making.

8. The 10-Point Regional Strategy for Strengthening Health Information Systems was endorsed at the Fifty-ninth session of the WHO Regional Committee for South-East Asia held in August 2006 subsequently, WHO country programmes and regional programmes were developed based on these 10 strategic areas.

The figure below illustrates the relationship between the 10-Point regional strategy for strengthening health information systems and health status.



Current Status

9. Since health information systems in countries of the Region are at various stages of development and strengthening, the countries have opted for different steps in their plans related to improving their HIS.

10. The Health Metrics Network (HMN) has developed a framework to assess country health information systems. Most Member States have reviewed their HIS using this framework and have developed their HIS plans in line with the 10-point regional strategy. Six countries in the Region were supported by the HMN for assessment and development of HIS implementation plans.

11. Bangladesh has reviewed its country health information system (HIS) and strengthened it by introducing ICT (information communication technology), which is updated to ensure that timely information reaches the national level.

12. Bhutan has assessed and revised its national HIS, and introduced an electronic data transfer system to disseminate information upwards from the district level. It is now working to establish a wide area network linking all its district health offices.

13. DPR Korea is piloting an ICT-enabled district health information system to generate better information for decision-making.

14. India is already considering a proposal for "Indian Health Information Network Development" linking all medical and para-medical educational institutions, pharmacies, diagnostic laboratories, primary health clinics/centres, district hospitals, private hospitals, nursing homes, public health institutions and physicians' offices to a regional health information hub.

15. Indonesia has conducted a review and assessment of its country HIS and re-designed it by introducing an ICT - enabled solution that links institutional, district and provincial information to the Centre for Health Data and Information.

16. Maldives is revising its country health information component including revision of the hospital information system. It also plans to assess its Vital Registration System in October 2010, so as to produce better cause-of-death information.

17. Myanmar has reviewed its country HIS and developed an HIS implementation plan to be completed in the next five-six years.

18. Nepal is planning to review its country HIS including hospital information system.

19. Sri Lanka has piloted a revised district HIS and a new ICT-enabled hospital information system to be implemented throughout the country. Also a country health information system review has been planned for August 2010.

20. Thailand has approved a national strategy on HIS, as well as a specific issue-based National Health Assembly and National Health Commission, to be chaired by the Prime Minister.

Thailand is spending US\$ 50 million a year for over a five-year period to strengthen its country HIS by linking all provinces, districts and health institutions to an ICT network.

21. Timor-Leste has reviewed its country HIS, and is implementing a World Bank-assisted project to strengthen it. Under this project all district health offices and hospitals will be linked to an ICT network.

22. The WHO Regional Offices for South-East Asia and the Western Pacific regions, together with the World Bank, Asian Development Bank, Australian Agency for International Development and other interested stakeholders, are planning to establish an Asia-Pacific health observatory (APO) on health systems and policies. The Regional Office is working on the issues of health financing and human resources for health hubs as part of the Asia-Pacific observatory initiative.

23. WHO headquarters have developed a global health observatory (GHO) providing access to data and analysis for monitoring the global health situation. It provides critical data and analysis for key health themes, as well as direct access to the full database. The GHO presents data from all WHO programmes and is providing links to support information.

Conclusion

24. Considering the global, regional and country health information system developments and the expanded information needs of national, regional and global stakeholders/users, as well as considering the new developments in the field of ICT, this agenda item requests the Regional Committee to review the current Regional Strategy on Health Information Systems, and to make suitable recommendations.