

A.3.5. Content Requirements for Healthcare Information

The primary input data for the information system should consider the components of the health promotion and care delivery (structure, process, and results). Several factors determine the characteristics of the information required, planned, collected, or produced:

- Specific issues to be covered related to the healthcare organization, the institutional aspects, the process of health education and care, the population, and the environment.
- Operational utilization of the information. The users, mainly those responsible for clinical, educational, and managerial decisions, must define each specific application and utility of information.
- Options regarding the use of new data, to be generated, or use of already existing data, either from internal or external sources.
- Level of aggregation (individual, local center, health care network, national level)
- Expectations for the quality and adequacy of the resulting information. Expectations are linked to the feasibility of collecting and producing adequate information.

A.3.5.1. Patient-Based Data

Individual data are focused in identification, administrative, and clinical data captured for each patient:

- Identification: unique coded identification, name, age, gender, address
- Administrative data: insurance type, insurance healthcare number
- Clinically useful data: pre-existing diseases and risk status, disabilities, anthropometric measures, diagnoses, and clinical performance tests
- Healthcare process data: consultations, hospital admissions, examination procedures, clinical procedures for treatment, clinical findings, and the patient's perception about the health problem
- Resources used in clinical procedures and the production of intermediate activities
- Procedures and norms: clinical guidelines applicable to patients
- Social health-related useful data: income, type of work, family structure, ethnicity, language

- Degree of patient knowledge about the health problem, how to avoid it, the treatment and satisfaction with healthcare: past and current individual opinions and survey results on perceptions and experiences with healthcare delivery

A.3.5.2. Aggregated Variables and Indicators

Health and healthcare indicators are currently relevant for supporting the role of the state and the new models of health promotion and care. Issues such as health unit autonomy, management, and contracting for services require dynamic and opportune information in order to allow the whole health promotion and care delivery system to operate appropriately.

Health and healthcare indicators can be categorized according to the thematic area of information to which they are related; the healthcare dimension to be evaluated; or the health situation they intend to represent. Some of the types of indicators currently used are:

- *Indicators related to health situation* - such as dwelling, socioeconomic and educational level, clean water and waste disposal, contacts with animals, etc.
- *Indicators related to health needs* - such as those of socioeconomic deprivation, differential ill-health status and risk situations,
- *Indicators of health promotion and care delivery* - from structure (resources and organization), the process of care, and results (outputs and outcomes),
- *Indicators of population access, coverage, and use of healthcare* - access, coverage of resource, coverage of activities, and use of services. Some of these indicators are used for equity analysis,
- *Indicators for efficiency assessments* - indicators used to assess how efficiently the resource is allocated between areas or groups of the population; indicators for cost-benefit analysis; performance or productivity of the resource used (compared to standards for comparison),
- *Indicators for effectiveness assessment* - related to outcomes of health interventions and impacts in the global health status of population groups,
- *Indicators of quality of health education and care* - related to structure and process of health promotion and care, from the technical and scientific perspectives,
- *Indicators of user's and health workers' satisfaction* - involving physical and human conditions of the environment and process of care,
- *Indicators of social participation* - degree of involvement of community groups and other stakeholders,

- *Indicators of adherence to specific health programs* - related to specific curative and preventive services.

The main components involving different groups of indicators according to the different dimensions of health promotion and care (institutional, population, socioeconomic, and geographical) that are commonly used in the description and analysis of health systems and services are:

- *Systems macro context* – political, economic, and social context,
- *Geographic environment* - climate; natural determinants to lifestyle and health,
- *Health systems* - system organization, normative and financial framework; role of the State; role of the market; insurance and financing,
- *Change process in health systems* - sector development; sector reform; specific adjustment,
- *Health services structure, organization, and functions* - type of health promotion and care provider; public/private sector; administrative organization; health promotion and clinical care organization; health promotion and care financing; human resources, physical structure and equipment; inpatient and outpatient services; preventive-oriented services; collective actions of prevention and promotion, and
- *Population and health conditions* - demography (including structure and geographic distribution); health, ill-health and risk; socioeconomic circumstances; other determinants; population factors influencing differential access and use of services.

A listing of indicators used in health care is given in References 1 and 2. They include variables currently utilized by the Pan American Health Organization Core Data Set (PAHO Core Data), based on data produced by the countries of the Region of the Americas, and variables used by the Organization for Economic and Cooperation Development (OECD) database.