Glossary of terms on Information Systems for Health

|DIGITAL TRANSFORMATION TOOLKIT

TECHNICAL TOOLS

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PAHO

Pan American Health Organization

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Information Systems for Health Toolkit
Glossary of terms on Information Systems for Health (IS4H)

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Department of Evidence and Intelligence for Action in Health
Pan American Health Organization - World Health Organization

This Glossary of Terms provides basic concepts for the effective IS4H-Maturity Model assessment.

Term	Contextual Description
Big data	Data whose characteristics require bigger efforts and new software applications to acquire, storage, use and analyze datasets than traditional data. Defined in terms of three Vs: the extreme volume of data, the variety in data types and the velocity at which data needs to be processed.
Change management	Strategies and processes that lead, produce and support the implementation of organizational change.
Client based information systems	Based on networking computing model or client/server network where all requests and services are delivered over a network. One or more client computers are connected to a central server.
Clinical Document Architecture (CDA)	The CDA is a document markup standard that specifies the structure and semantics of clinical documents. A CDA document is a defined and complete information object that can include text, images, sounds, and other multimedia content.
CMO Report	Annual report of the Chief Medical Officer, who is the senior health government official, mostly used in English speaking countries.
Collaborative platforms	Online software designed to facilitate individuals or groups to work on shared information, common activities and tasks, allowing real-time collaboration and editing.
Common data model (CDM)	Facilitates data interoperability by bringing data from multiple sources and applications together through a shared data language.
Communication standards	Set of procedures used to communicate between systems and different networks or partners.
Community of practice	Group of people who share the same interest in solving a problem, improving a situation or acquiring learning through the exchange of experiences.
Conformity checks/integrity checks/health data quality/data quality control/	A mechanism to evaluate data quality of health data and indicators and how well adhere to data standards, that were developed for the purpose of the data/indicator set.

Culture of information	Environment that promotes values and beliefs in an organization for collection, analysis and use of information to accomplish its goals and missions (Aquil et al, 2009).
Current Procedural Terminology (CPT)	Is a medical coding set that provides standardized coding for medical, surgical, and diagnostic services developed by the American Medical Association.
Data backup strategy	Plan implemented for regular backups to reduce risks and prevent data loss in addition to ensure its update.
Data exchange standard	Data exchange messaging standards to ensure interoperability across platforms. Processes and characteristics required to enable data access, management and exchange between different systems (Eg. between laboratory instruments and information management systems), networks or communities, examples are HL7, FHIRE, LOINC, SDMX (statistical data and metadata standard).
Data governance mechanism	An organization's practices, processes, and policies guiding data production, storage, and use within the organization.
Data mining	The process of discovering or extracting patterns or associations in a data set using methods like machine learning, statistical analysis, etc.
Data quality best practices	A set of guiding principles or assessments to ensure that data is gathered, stored, and used optimally within the organization, and guiding remedial actions where necessary.
Data science	Process of capturing, cleaning, transforming unstructured social media and web data, use of big-data technologies to store and process big unstructured data sets, and questions related to data ethics and regulations (Data Science, 2018 MIT).
Data visualization	Presentation of data in charts, infographics, video graphics, dashboards
Data warehouse	Information system that collates data from a wide range of sources within an organization. Data warehouses are used as centralized data repositories for analytical and reporting purposes.

Descriptive statistics	Statistics that describe the important characteristics/ properties of the data using the measures of central tendency like mean/median, mode and the measures of dispersion like range, standard deviation, and variance Data can be summarized and represented in an attractive way using charts, data tables and graphs.
Digital health	Broad umbrella term encompassing eHealth, mHealth, as well as emerging areas, such as the use of advanced computing sciences, genomics and artificial intelligence. Digital health interventions should complement and enhance health system functions. (WHO 2019).
Digital Imaging and Communications in Medicine (DICOM)	International standard for storing and transmitting medical imaging information.
Digitally literate	A person with a range of digital skills, knowledge of basic principles of computing devices, skills in using computer networks, an ability to engage in online communities and social networks while adhering to behavioral protocols.
E-government	E-government is the usage of Information Communications Technology (ICT) for online government services provision to improve efficiency and transparency of information exchange between government, businesses, citizens and others.
eHealth	eHealth is the cost-effective and secure use of information and communications technology (ICT) in support of health and health-related fields. eHealth is concerned with improving the flow of information, electronically, to support the delivery of health services and the management of health systems (WHO, 2018).
Electronic health record (EHR)	The Electronic Health Record (EHR) is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting. Authorized clinicians involved in a patient's care can access the information to provide care to that patient. EHRs also share information with other health care providers, such as laboratories and specialists. EHRs follow patients – to the specialist, the hospital, the nursing home, or even across the country.
Electronic immunization registries	EIRs are computerized, confidential, population-based information systems that contain data on vaccine doses administered.

Electronic medical record (EMR)	EMR is medical information of a patient kept directly in computers and contains notes and information collected by and for the clinicians in that office, clinic, or hospital and are mostly used by providers for diagnosis and treatment. EMRs are more valuable than paper records because they enable providers to track data over time, identify patients for preventive visits and screenings, monitor patients, and improve health care quality.
Event-based public health surveillance	The practice of surveillance (versus indicator-based surveillance) considering reports, stories, rumors, and other information about health events that could be a serious risk to public health.
Evergreen policies	Refers to policies that automatically renews after the expiration date - except canceled.
Exploratory data analysis	An approach to analyzing data sets to summarize their main characteristics, often with visual methods.
Fast Healthcare Interoperability Resources (FHIRE)	Standard for electronic healthcare information exchange.
Health accounts (HA)	HA measure health care spending and track funds that flow through health system. The System of Health Accounts (SHA) is an international framework that improves accountability and governance of health resources. Health Accounts (HA) provide a systematic description of the financial flows related to the consumption of healthcare goods and services. They describe a health system from an expenditure perspective.
Health data standards	Health data standards are the foundations for e-health records and support interoperability with public health programs and health data systems.
Health Informatics	Systematic application of information and computer science and technology to public health. Term related to the integration of full life cycle of data (acquisition, storage, use, dissemination and disposal) to promote patient's participation and improve quality towards information technology and effective communication. "The interdisciplinary study of the design, development, adoption, and application of (information technology) IT-based innovations in healthcare services delivery, management, and planning." – US National Library of Medicine

Health metadata	This metadata (data about the data) is required in order for the data to be properly interpreted, transferred, or used. There are different types of metadata, depending on its purpose (statistical metadata, publishing metadata, other)
HIV-TB	Human immunodeficiency virus – tuberculosis.
HL7 Standards	Data exchange messaging standards to ensure interoperability across platforms. Processes and characteristics required to enable data access, management and exchange between different systems (Eg. between laboratory instruments and information management systems), networks or communities, examples are HL7, FHIRE, LOINC, SDMX (statistical data and metadata standard).
Identity management	Identity management refers to the authentication and authorization of individuals to access different digital resources (systems and applications).
Indicator-based public health surveillance	The systematic ongoing collection, analysis, interpretation and dissemination of highly structured information ('indicators') for public health action. A more traditional way of reporting diseases to public health officials. Indicator-based surveillance involves reports of specific diseases from health care providers to public health officials.
Individual health records (IHR)	IHR is a digital tool that contains patient's health information background such as personal information and medical history (diagnoses, medications, treatments, allergies, laboratory data, radiology and test reports), in real-time and can be set up and managed by patients.
Inferential statistics	The goal of the inferential statistics is to draw conclusions from a sample and generalize them to the population. It determines the probability of the characteristics of the sample using probability theory. The most common methodologies used are hypothesis tests, and analysis of variance.
Information architecture	Information architecture is a blueprint of how information is stored, organized, and used in an organization by its systems and users. It allows organizations to capture the structure of its information, and how systems and users produce and interact with this information throughout their workflows and processes.

Institutional memory	Criteria, methodologies and content management platforms that allow to record, sort, preserve and disseminate information and knowledge generated in the Institution.
Institutional taxonomy	Establishment of document classifications according to their characteristics.
International Health Regulations (IHR)	The International Health Regulations (2005) define public health surveillance as, "the systematic on-going collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary.
Internet of things	The internet-facilitated connection of objects in a system such that they can share data and metadata between them.
Knowledge architecture	A blueprint detailing the flows and stores of knowledge within an organization.
Knowledge management metrics	Established measures set by an organization to determine how well the organization is managing knowledge within. Examples include number of help desk requests initiated, etc.
LOINC	Logical Observation Identifiers Names and Codes (LOINC) is an international standard focused on identifying measurements and documents related to health used in pharmacy and drug management.
Machine learning	Provides algorithms to automatically analyze large data sets, focuses on the design and evaluation of algorithms for extracting patterns from data (Data Science, 2018, MIT).
Metadata best practices	A series of guiding principles and practices to ensure that all required metadata is captured and stored in a way that ensures the data is interpretable and complete.
mHealth	Mobile health is a subset of ehealth and is defined as the use of mobile wireless technologies for public health practice.
National health authorities	A governance model describing the collective national unit coordinating and delivering or responsible for providing health care in that nation.

National health observatory	Health observatories produce and disseminate intelligence for their host area in order to inform policy. Public health observatories reflect the increasing importance placed on cross agency work, health inequalities, and the importance of evidence-based policy making (Hemmings J, Epi and Community Health).
National health system	The mechanisms and policies surrounding health care delivery in a country.
National set of core health indicators	A nationally defined set of metrics that allow the characterization of the health status of a country to monitor achievement of national set targets, to compare with subnational population groups and countries, and for trend analysis.
Open access	Available, free of cost and without access barriers to unrestricted open data online content.
Open data	Open data is data that can be freely used, shared and built-on by anyone, anywhere, for any purpose.
Open data concepts	Open data is public, accessible, described, reusable, complete, and available in a timely manner.
Open government	A culture of governance that promotes the principles of transparency, integrity, accountability and stakeholder participation in support of democracy and inclusive growth. OECD, 2017
Public health modeling	Modern public health research and practice increasingly utilizes models to better understand and manage dynamic processes—from decision-making in health care delivery and design of clinical trials, to prediction and control of infectious disease outbreaks, to mitigating the effects of drug overdoses.
Public health syndromic surveillance	The use of syndromic or symptom-related data to perform public health surveillance activities. Syndromic surveillance refers to methods relying on detection of individual and population health indicators (symptoms, signs) that are detectable before confirmed diagnoses.
Standard operation procedures (SOP's)	SOP's are a set of descriptive directions that ensure the correct development of specific activities and processes.
Structured data	Group of organized and defined data which main characteristics makes their access and usage easier and which data resides in relational databases

Structured format	A consistent format for information to be collected and stored in, such that it is organized in the same way for different people and across different organizations. For example, the decision to store the date in all systems always as dd-mm-yy, rather than mm-dd-yyyy.
Structured health record	Facilitates access to information relating to care given to a patient during hospitalization. Structure refers to form, language and layout to be uniform. Structured forms are easily automated
Telemedicine	This term is referred to the facilitation of healthcare access and information with the use of Information and Communications Technology (ICT).
Unstructured data	Data and information generated by society in an unstructured manner can be highly useful for health systems and for decision-making in general. Aspects of culture and social customs also come into play, as do people's behavior with regard to their ailments and clinical recommendations, health behaviors that are outside the health care system, and community health assets, among others. Health in the Americas, 2017
Video conference	Involves communicating between people located in separate places by using digital tools such as software to exchange different types of information such as audio, video and presentations.
Web conference	Meetings held using digital tools such as software and applications that facilitate knowledge exchange and effective collaboration of individuals.
WHO-FIC	The WHO Family of International Classifications includes the classification of ICD 10 (International Classification of Diseases), ICF (International Classification of Functioning, Disability and Health) and ICHI (International Classification of Health Interventions) as well as derived and related classifications, for example ICPC (International Classification of Primary Care).