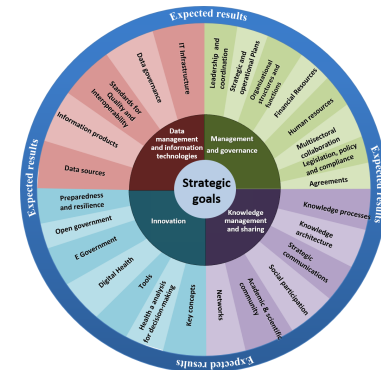


Information Systems for Health: Concept and Maturity Model Assessment



PAHO





1. Background

Background

- High-level meetings with the Caribbean Sub-regions (November 2016), Central America (December 2017) and South America (August 2018)
- Sustainable health agenda for the americas 2018-2030: a call to action for health and well-being in the Region (ASSA2030): Strengthen health information systems in order to support policy formulation and policy making evidence-based decisions
- Action Plan for the Strengthening of Health Information Systems approved by PAHO Directing Council in October 2019



Key Concepts

- Information Systems for Health
- IS4H Framework

Information Systems for Health



**Generating
quality
information for
better clinical,
management and
policy decision-
making**

Information Systems for Health

Produced through
effective
Information
Management and
the use of
Information
Technology

Information Systems for Health




Enabled through
systems of
governance,
management,
knowledge
management and
innovation

Information **Systems** for Health



In collaboration
with multi-
sectoral partners
working in
health

Information **Systems for Health**



**For better health
outcomes and
well-being for
individuals and
populations**

Information Systems for Health

Information Systems for Health

IS4H

IS4H Framework

The IS4H Framework is built around four strategic domains.



IS4H Framework

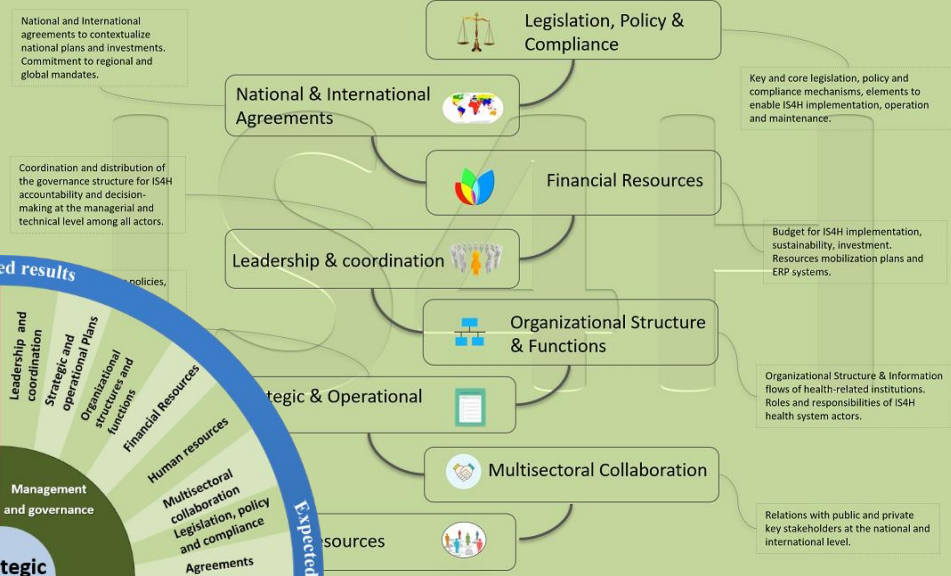
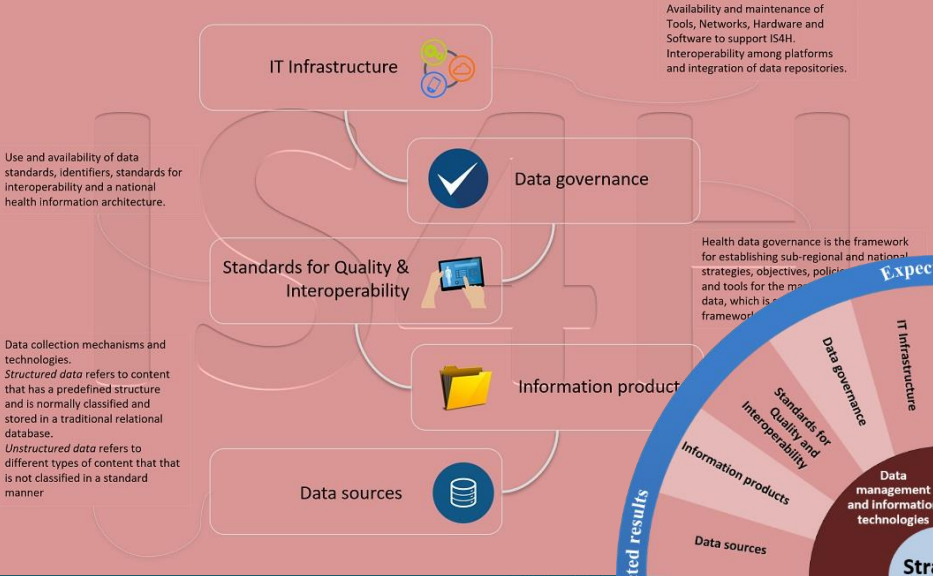
Each domain focuses on key components or capacities that are required for effective IS4H.



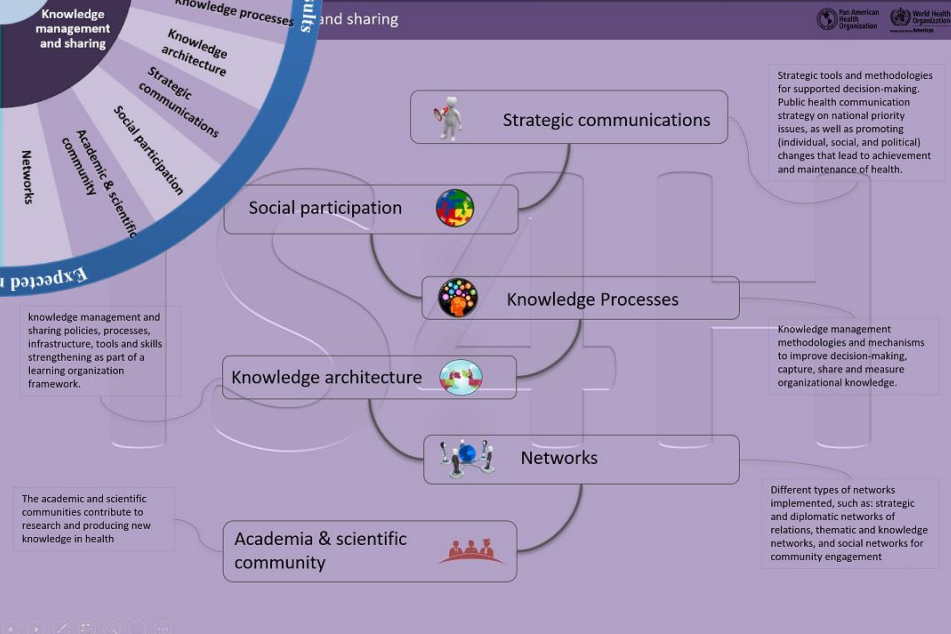
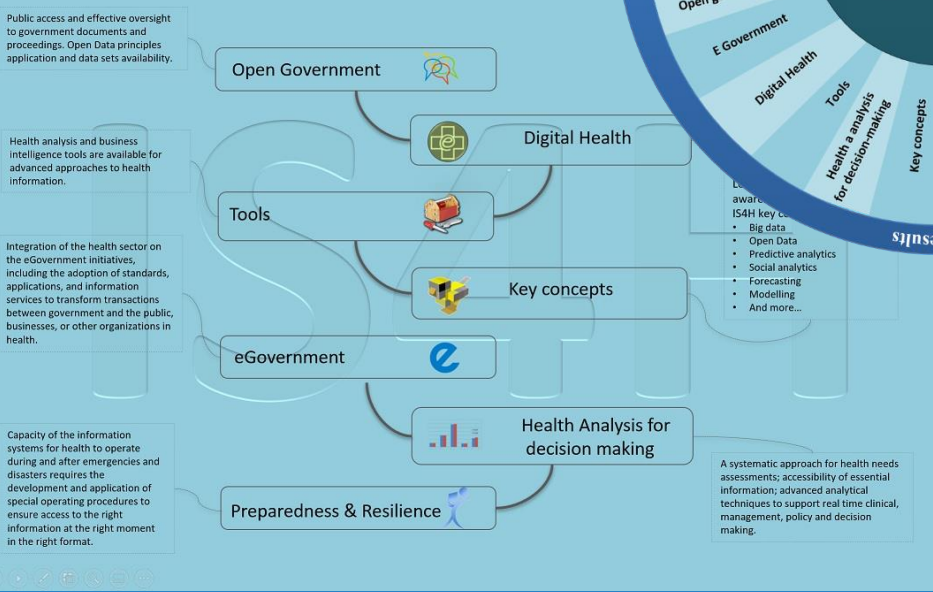
Strategic Goal 1 : Data management and information technologies



Strategic Goal 2 : Management and governance

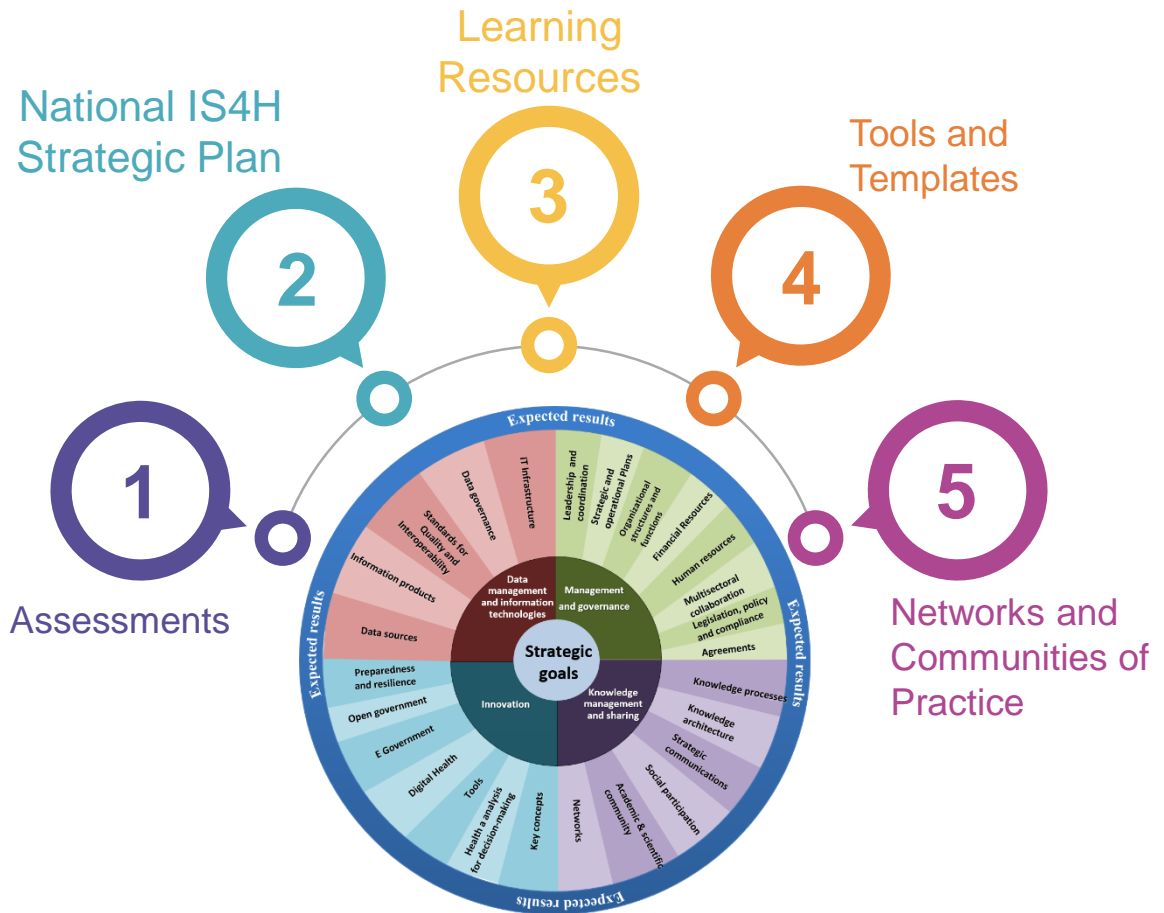


Strategic Goal 4 : Innovation



IS4H Framework

The Framework provides guidance to national health authorities on investment and capacity building.



IS4H Resources

Framework

Toolkit

Maturity Model

Factsheets

Links to additional resources

PAHO.org/ish

IS4H Stories

St. Vincent and the Grenadines is digitizing the Medical Records Department at the Milton Cato Memorial Hospital

The medical records system at the Milton Cato Memorial Hospital is antiquated and cumbersome. The entire process remains paper-based and with tens of thousands of medical records kept on-site. Indeed, all records since 1984 remain stored at the facility. The increase in temporary staffing necessary to handle the influx of paper forms has threatened the privacy of patient medical records. Data protection... [Read More](#)



More IS4H Stories

Project in San Carlos de Bariloche, Argentina, implements registry, epidemiology and evaluation of information systems strategies and support for caregivers of cancer patients

Uruguay will incorporate an infant mortality risk score to its Electronic Live Birth Certificate

One vision, multiple partners, one objective: Strengthen Information Systems in the countries

Argentina develops a strategy and action plan for the governance of data on Antimicrobial Resistance

Four testimonial cards with photos and names of key stakeholders:

- DR. CARISSA F. ETIENNE**, PAHO Director: "I'm encouraged by the level of collaboration that we noticed..."
- IAN BROOKS**, Director of Health Sciences, National Center for Supercomputing applications, Faculty Affiliate, Center for Health, Aging, and Disability, Faculty Affiliate, Center for African Studies: "The University of Illinois is excited by this opportunity to partner with PAHO..."
- DR. CARLENE RAJIC, MD, MPH**, Head of Health, Human & Social Cluster, OECO Organisation of Eastern-Caribbean States (OECO) Commission: "The OECO Health Unit welcomes PAHO's Caribbean IS4H roadmap..."
- DR. IRAD POTTER**, DVID, Government of the Virgin Islands, Chair of the Caribbean Technical Working Group for Information Systems for Health: "To ensure a successful IS4H implementation, it is important to utilize multi-sectoral collaboration..."

[More testimonials](#)

Maturity Model

The Information Systems for Health Maturity Assessment Tool (IS4H-MM) describes the method, tool and questions for assessing organizational capacity related to governance, data management, digital transformation, innovation and knowledge management. The IS4H-MM is part of the IS4H Blueprint for a successful implementation, and is organized according to the 4 strategic goals of the IS4H conceptual Framework.

The IS4H-MM is also a reference framework guiding Information Systems for Health to keep walking through the changing path of information and knowledge revolution, and how countries and organizations might grow in capabilities to operate, interact and benefit from them. [Read more](#)



Latest Blog Posts

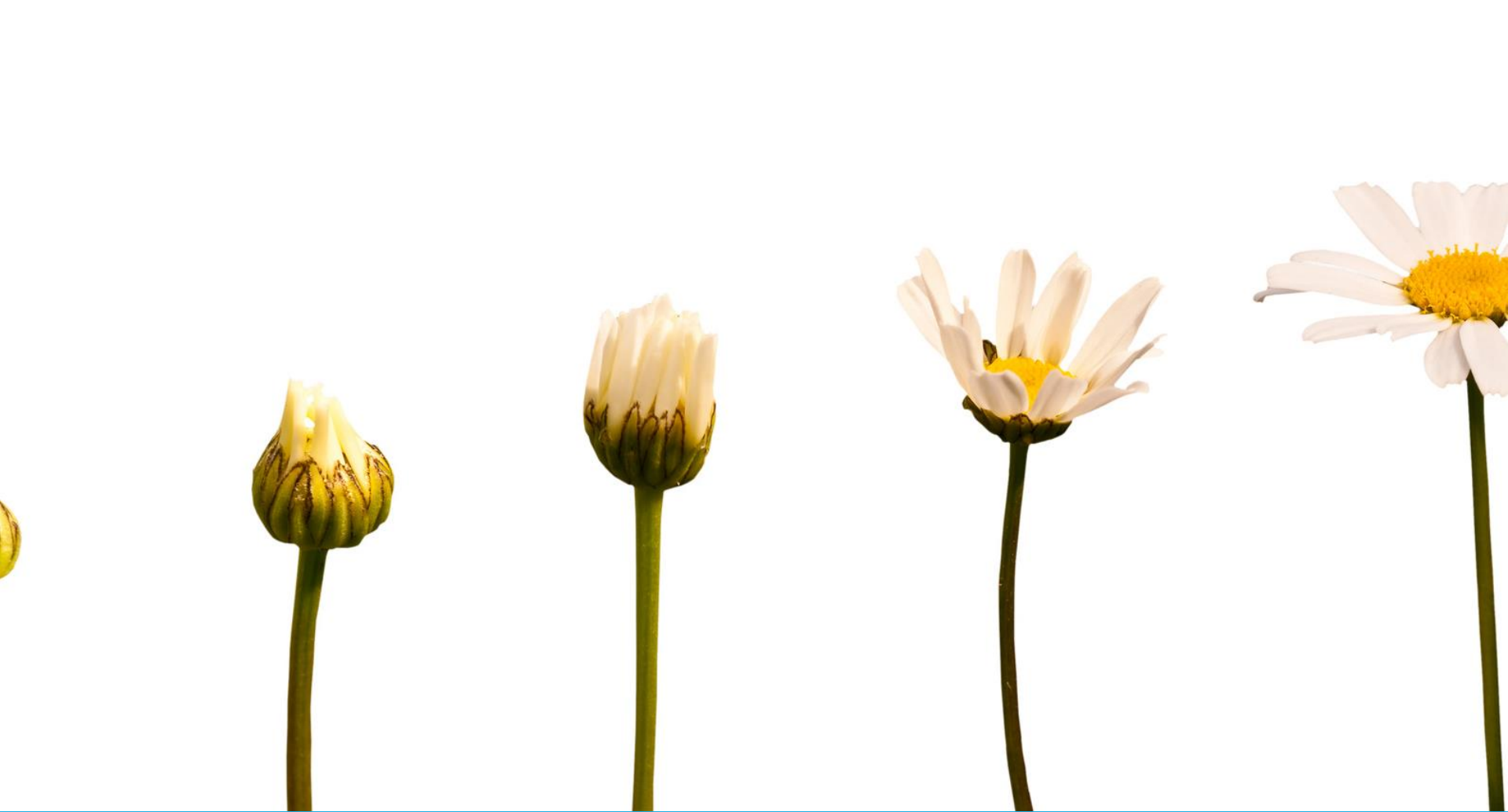
[Grenada aims to strengthen health information](#)

[Call for Blog Posts Submissions](#)

ADDITIONAL RESOURCES

- [PLISA Platform](#)
- [Core Indicators](#)
- [IS4H Toolkit](#)
- [RELACISIS](#)
- [Photos](#)
- [Videos](#)
- [Knowledge Management Methodologies](#)

[IS4H FACTSHEETS](#)

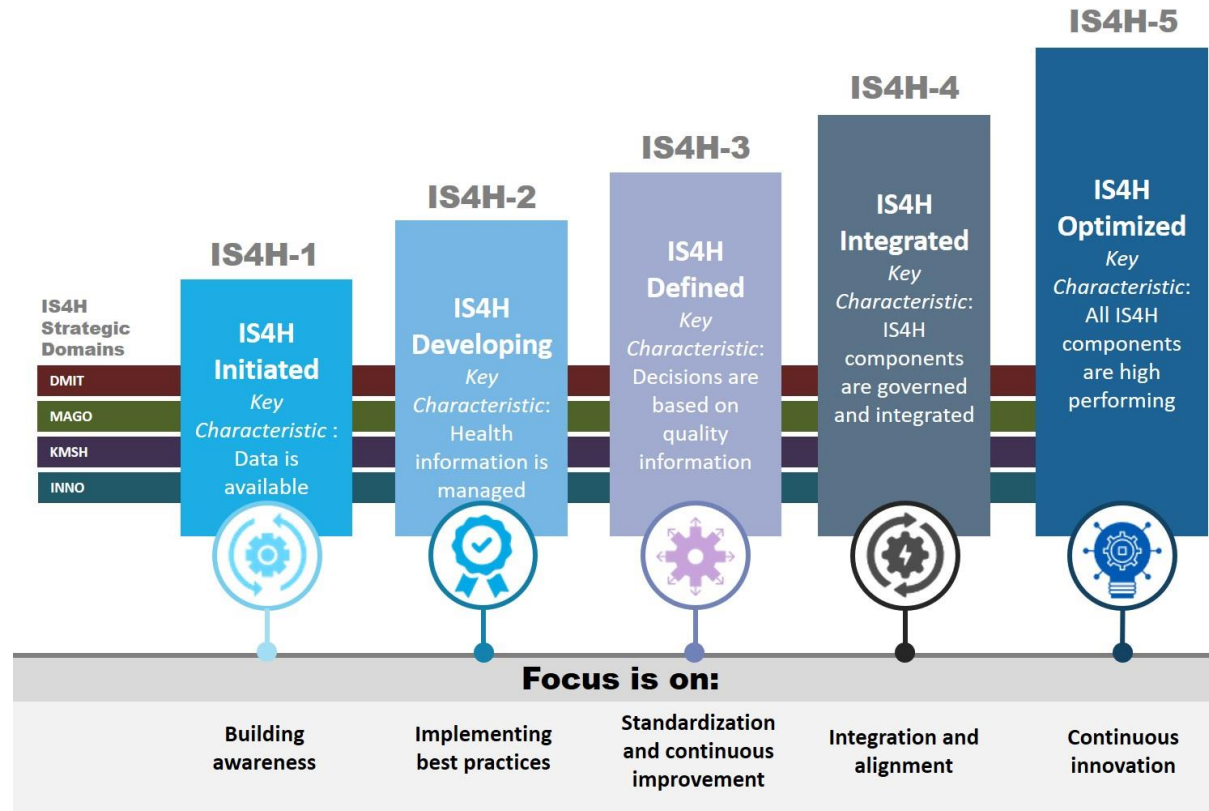


IS4H Maturity Model

IS4H- Maturity Model

The IS4H-MM is a tool for assessing an organization's maturity level for Information Systems for Health.

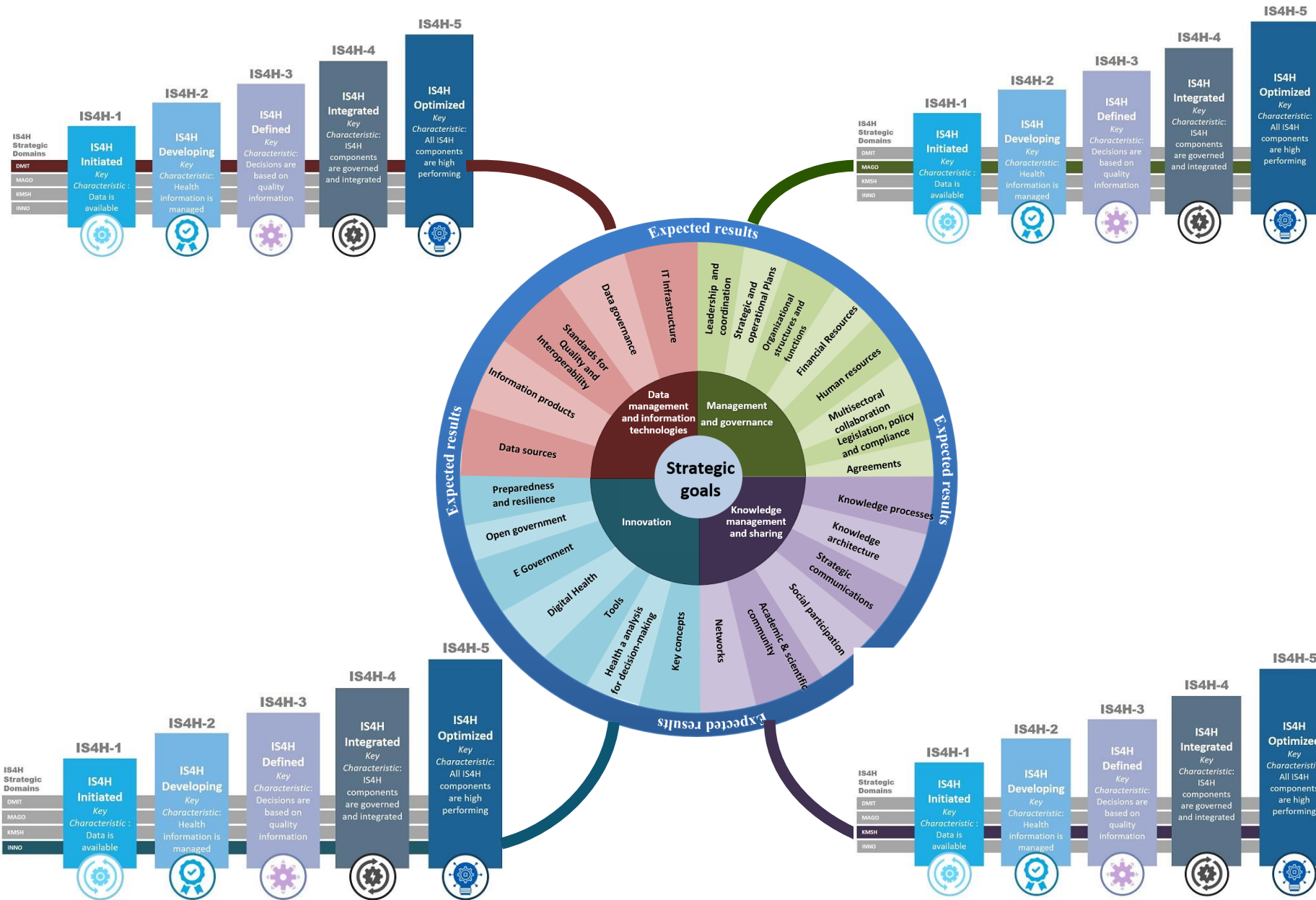
Maturity is measured across the four strategic goals of the IS4H Framework.



IS4H-MM Purpose

How can the results of the IS4H-MM be used?

1. Provides a benchmark of IS4H maturity against other health authorities in the Caribbean and Latin American Region
2. Provides the basis for establishing strategic priorities and work plans for IS4H capacity development
3. Provides input and focus for process improvement across the various IS4H domains
4. Provides a basis for ongoing monitoring of IS4H capacity and process improvement



Maturity is measured over each COMPONENT of each STRATEGIC AREA

The tool

Home institutional data and guidance to complete

Glossary: of terms

Pan American Health Organization
Welcome to the Information Systems for Health (IS4H) Maturity Assessment

Home

Results

1. Data Management and Information Technologies

2. Management and Governance

3. Knowledge Management and Sharing

4. Innovation

Glossary

Instructions for using the IS4H Maturity Assessment Tool:

1. Save this document with the name of your country or institution, and the date.
2. Fill in the organizational information profile below.
3. Respond to each question for each of the 4 categories by selecting the number that best describes your organization at present from the "Select Ranking" column.

Please enter the following information about your organization:

Name(s)	
Date	
Location	
Organization	
Additional Information	

Pan American Health Organization
IS4H Maturity Model Assessment Tool: Glossary

Home

Term	Contextual Definition
Health accounts	<i>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.</i>
Health data standards	<i>Health data standards are the foundations for e-health records and support interoperability with public health programs and health data systems.</i>
Health metadata	<i>Information associated with another data item, such as the image resolution information for a diagnostic image. This metadata (data about the data) is often required in order for the data to be properly interpreted, transferred, or used.</i>
International Health Regulation (IHR)	<i>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.</i>
Indicator-based public health surveillance	<i>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. Such information may be described as structured information because the information obtained is standardized.</i>
Inferential statistics	<i>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.</i>
Internet of things	<i>The internet-facilitated connection of objects in a system such that</i>

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Organizational Results
DMIT
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INNO
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+

The tool

Questions Likert scale

Organized by strategic area

Organized by component

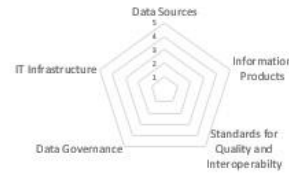


Pan American Health Organization		IS4H Maturity Model Assessment Tool: Data Management and Information Technologies					Select Ranking	Comments
Home	Question	Level 1	Level 2	Level 3	Level 4	Level 5		
	Data Governance <i>Health data governance is the framework for establishing national and sub-national strategies, objectives, policies, standards, and tools for the management of technical data, which is supported by a legal framework.</i>	There are a few if any best practices for data management is largely ad hoc. There are no formal mechanisms for decisions about data quality and standards.	Data management best practices are in development, but not fully implemented. Data quality is not routinely monitored. Decision about standards quality and standards are made at the facility/unit/team level.	Data management processes and best practices are implemented for some facilities/units/teams. (e.g. Data quality frameworks, data standards, policies, SOPs...) Core data sets are readily available. Data are often integrated for analysis across various sources. Some metadata are documented and maintained (indicator compendium, data dictionaries). A data governance body within the national health authority exists.	A formal health data governance mechanisms has been established at the national level with other health data stakeholders, and there are processes and plan in place to strengthen alignment of standards, data quality frameworks and data management practices across all stakeholders.	Data management policies, procedures and best practices are consistently applied, resulting in availability of quality data. Formal data governance mechanisms (committees, policies, data quality frameworks, data sharing agreements etc.) have been established among national health stakeholders, including private sector, are effectively functioning. Continuous improvement processes established to monitor and invest in data quality.	0	
	There is a formal data governance body that makes decisions about data quality, standards and investments.	There are no formal mechanism for making decisions about data.	Decision about data are made within the facility/unit/team.	The national health authority has established a formal body for making decisions about data	There is a national body that makes decisions about health data that meets and works across sectors including part of private sector	There is a national body that make decisions about data and that functions and works across sectors including the private sector		
	There is a data quality framework in place.	no framework	Some facilities/units/teams work on data quality but no data quality framework exists.	There is a data quality framework for the national health authorities.	There is a data quality framework that is shared or aligned between national health authorities and some key multisectoral stakeholders	There is a data quality framework that is aligned and fully implemented at the national health system		
	There are defined SOPs for data management (data collection, aggregation, cleansing, store and archiving, etc.)							
	Cause of Death Data	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	Maternal Mortality	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	(Cancer, fasting blood glucose-diabetes)	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	Malaria, Dengue (communicable diseases)	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	HIV - TB (communicable diseases)	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	Disability statistics	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	Vaccine preventable diseases and immunization coverage	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	Overweight and obesity (NKH Factors)	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	Physicians, Nurses, Dentists (Health Systems)	No	Defined for facilities/units/teams, but not formally implemented	Fully implemented in some facilities/units/teams	Fully implemented and aligned across national health authorities	Yes, fully implemented at the national health system		
	The quality of data is monitored	No	On an ad hoc basis	Routinely for some data sets, but there is a lack of investments for improve data	Routinely for all data sets, and there are formal plans, technical discussions and	Data quality monitored and improved continuously.		

IS4H Maturity Assessment



Data Management and Information Technology



Data Management and Information Technology	
Overall Score:	#DIV/0!
Domain	Level
Data Sources	0
Information Products	0
Standards for Quality and Interoperability	0
Data Governance	0
IT Infrastructure	0

Management and Governance



Management and Governance	
Overall Score:	#DIV/0!
Domain	Level
Leadership and Coordination	0
Strategic and Operational Plans	0
Organizational Structures and Functions	0
Financial Resources	0
Human Resources	0
Multisectoral Collaboration	0
Legislation, Policy, and Agreements	0

Knowledge Management and Sharing



Knowledge Management and Sharing	
Overall Score:	#DIV/0!
Domain	Level
Knowledge Processes	0
Knowledge Architecture	0
Strategic Communications	0
Social Participation	0
Academic and Scientific Community	0
Networks	0

Innovation



Innovation	
Overall Score:	#DIV/0!
Domain	Level
Key Concepts	0
Health Analysis for Decision Making	0
Tools	0
Digital Health	0
E Government	0
Open Government	0
Preparedness and Resilience	0

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