

57th DIRECTING COUNCIL

71st SESSION OF THE REGIONAL COMMITTEE OF WHO FOR THE AMERICAS

Washington, D.C., USA, 30 September-4 October 2019

Agenda Item 4.7

CD57/9, Rev. 1
2 October 2019
Original: Spanish

PLAN OF ACTION FOR STRENGTHENING INFORMATION SYSTEMS FOR HEALTH 2019-2023

Introduction

1. The countries of the Region of the Americas have made substantial progress in improving information systems for health (IS4H). However, they still face major challenges in ensuring reliable, secure, and timely data in the necessary format to inform decision-making, policy development, monitoring and evaluation, and the production of intelligence for action in health. At the same time, emerging technologies and the potential offered by the information society, such as big data, may offer benefits to public health never before seen in human history (1).

2. In order to achieve the Sustainable Development Goals' objective of ensuring that "no one is left behind", countries will need to reassess their approaches, actions, and priorities in data and information management, as well as the costs associated with these interventions. They must also bear in mind the need to disaggregate data by income, sex, age, race, ethnic origin, disability, geographical location, and other relevant characteristics of their national and subnational context.

3. This document presents the Plan of Action for Strengthening Information Systems for Health 2019-2023, which contains strategic lines of action and tools to support implementation of the 2030 Agenda for Sustainable Development (2). Its purpose, moreover, is to help health institutions in the Member States to advance toward meeting the targets of the Sustainable Health Agenda for the Americas 2018-2030 (3), especially targets 6.1 and 6.2, in alignment with other government initiatives such as open government and e-government (4).

4. The plan of action strengthens and complements the implementation of important mandates of the Member States that contain aspects relevant to the achievement of more effective and integrated information systems: the Plan of Action for the Strengthening of Vital Statistics 2017-2022 (5), and the Strategy for Universal Access to Health and Universal Health Coverage (6), as well as the International Health Regulations (7). It also considers the convergence of actions and synergies with major networks and initiatives in which the Member States participate, such as the Latin American and Caribbean Network to Strengthen Health Information Systems (RELACSYS); the American Network of Cooperation in the Development of eHealth (RACSEL); the Virtual Health Library (VHL), coordinated by the Latin American and Caribbean Health Sciences Information Center (BIREME); and the collaborating centers of the World Health Organization (WHO).

Background

5. During the 29th Pan American Sanitary Conference (2017), the Member States approved the Plan of Action for the Strengthening of Vital Statistics 2017-2022 (5) and requested the Pan American Sanitary Bureau to prepare a plan of action on information systems for health.

6. One of the strategic areas of the PAHO Strategic Plan 2014-2019 (amended) is strengthening health systems, with a focus on strengthening information systems and national health research systems and facilitating transfer of knowledge and technologies, operationally manifested in program category 4.4 (“Health Systems Information and Evidence”) (8).

7. According to the Strategy for Universal Access to Health and Universal Health Coverage (6), national information systems must be strengthened “to conduct monitoring and evaluate progress toward universal access to health and universal health coverage, including the measurement of health outcomes, comprehensive health services, and inequities and social determinants of health,” adding that it “is necessary to ensure the quality and reliability, completeness and timeliness of data, which calls for interoperability with other entities and the development of indicators that allow the monitoring and evaluation of health conditions and of equity and its determinants. Data should be disaggregated to facilitate the monitoring of progress toward equity. Data analysis should be used to develop and focus policies and plans with a view to advancing toward universal access to health and universal health coverage” (6).

8. Guided by a roadmap developed in the English-speaking Caribbean and endorsed by the Caribbean Community (CARICOM), PAHO held three high-level meetings between 2016 and 2018, one for each subregion, in which a revamped conceptual framework for information systems for health was approved to move toward the creation of interoperable information systems with reliable data used in a secure and ethical fashion for the production of strategic information for the benefit of public health (9-11).

9. Between 2016 and 2019, with financial support from the Government of Canada and the United States Agency for International Development (USAID), PAHO developed a series of tools (IS4H Toolkit),¹ significant among them one that allows for standardized measurement of the maturity of the information system in each country in the Region.

Situation Analysis

10. The countries of the Region share a multitude of challenges in strengthening information systems for health. These include a necessary updating of legal frameworks, implementation of memorandums of understanding for data sharing among institutions, intra- and interinstitutional collaboration agreements, development of revamped governance and leadership models, creation of dictionaries of standardized health data and specific indicators that include the disaggregation of data at all levels, and adoption of a series of standards and procedures for measuring, monitoring, and continuously improving the quality of information. There is a real opportunity for networked collaboration to meet common challenges, with outcomes that can be converted to public goods for use in the Region.

Management and governance of information systems

11. The majority of information systems for health have focused primarily on software development and the adoption of isolated technology solutions. They have not been conceived as a strategic governance mechanism that ensures the convergence of investments and action, as well as the interconnection and interoperability of databases and applications that facilitate access to reliable data, information, and knowledge at the right time, in right place, and in the right format—all at the lowest possible production cost and avoiding the duplication of efforts and wasted resources.

12. In policy-making and management, decision-making, and resource allocation for the health sector, open access to data and interoperability among technology applications—especially those related to birth and death data, electronic health records, and epidemiological data—are still not systematically considered critical factors for success. However, although there is still a gap in renewing legal frameworks, some countries in the Region have updated laws for patients to access their health information in order to be empowered in their health care. Additionally, a substantial number of countries in the Region² have already set up portals to meet the obligation to make government data public.

13. Improving the living conditions of different population groups and reducing inequities between and within them requires governance mechanisms to facilitate the use

¹ For more information, visit: <http://www.paho.org/ish/index.php/en/toolkit>.

² Some examples of this are the open data portals of Argentina (<https://datos.gob.ar>), Brazil (<http://dados.gov.br>), Canada (<https://open.canada.ca/en/open-data>), Chile (<http://datos.gob.cl>), Colombia (<https://www.datos.gov.co>), Jamaica (<https://data.gov.jm>), Mexico (<https://datos.gob.mx>), Saint Lucia (<https://data.govt.lc>), the United States (<https://healthdata.gov>) and Uruguay (<https://catalogo.datos.gub.uy/>).

of health sector information in decision-making processes at all levels. This will facilitate evidence-based health care and policy-making (8).

14. High-level subregional policy agreements, especially those of CARICOM, the Council of Ministers of Health of Central America and the Dominican Republic (COMISCA), the Andean Health Organization (ORAS), and the Amazon Cooperation Treaty Organization (ACTO), have stressed the importance of coordinating data capture to foster innovation to make the Member States globally competitive in the development of the digital health ecosystem. Member States are at different levels of development in this area and this will be taken into account, as will opportunities for collaboration and cooperation among Member States, in order to guarantee that everyone benefits from the regional development of information systems for health.

Data management and information technology

15. In the three high-level meetings convened by PAHO between 2016 and 2018 in the Caribbean, South American, and Central American subregions, the countries recognized that timely, accessible, reliable, and disaggregated quality data are key to decision-making and transparent reporting.

16. Information and communication technologies, the use of digital health technologies, automated data collection, and adequate funding and design of information systems for health are essential for obtaining more readily available and timely higher-quality information. This will help to overcome institutional barriers and some of the persistent obstacles to the improvement of these systems, such as limitations on people's right to access information (12).

17. There is also an immediate need to review legislative frameworks and the regulations governing access and the ethical use of data, focusing on the collection of data from all sectors (including the private sector), as well as privacy, confidentiality, and security.

18. Health system information and communication technologies make interoperability possible within different health organizations, help meet both social and economic objectives by improving people's ability to access timely and efficient health care, and facilitate the continuity of care while controlling rising costs, optimizing procedures, and reallocating resources (13).

19. In some cases, information systems in the Region have a master list of patients (that enables them to compile and store accurate information on every patient in the health system by linking the records of the different systems), a repository of clinical data, and clinical records systems. However, the integration of their databases with those of other systems is limited. This means that health care providers have difficulty securing reliable and timely information for a comprehensive overview of the patient's health, and policymakers have problems securing reliable and timely information for an accurate picture of the population's health situation to inform decision-making (13).

20. The evaluation of the Strategy and Plan of Action on eHealth revealed, among other things, basic requirements for a good health information system are inadequate in many low and lower-middle-income countries. Some studies also show that the countries with the greatest health challenges generally have the weakest systems for compiling, administering, analyzing, and utilizing information (14).

21. Within the framework of open access to data, it is necessary to promote the dissemination and sharing of research data to improve systems for scientific communication in the Region. Robust systems for scientific communication, based on access to information and open data, are the foundation for strong, innovative health systems.

Information and knowledge management

22. Health information remains the key factor supporting all aspects of action, such as research, planning, decision-making, priority-setting, policy-making, operations, monitoring, and evaluation, which should be based on the greatest possible evidence. Nonetheless, there are persistent disparities between countries in the coverage, reliability, and timelines of the information provided by information systems for health. There are also disparities in the analytical and research capacity to produce disaggregated health data and to use that data to analyze the causes of the problems affecting different population groups and the best available options to address them (8).

23. The Region's health systems are marked by fragmentation, lack of access, and inequality in health care. This is reflected, in turn, in the fragmentation of the information they produce (13).

24. Other challenges include different interpretations of what information is needed. Information systems may be viewed simply as health records, but they should also include surveys of risk factors and demographic data.

Innovation, integration, and convergence

25. Integrated information systems for health are needed to buttress the leadership and governance function of health ministries. The key elements for ensuring innovation, integration, and convergence include (3):

- a) Determining the maturity of the countries' information systems for health as a first step in identifying gaps and needs.
- b) Establishing clear formal governance mechanisms for data management and information and communication technologies.
- c) Developing national strategies for managing information and knowledge for health.

- d) Implementing plans for building national human resource capacity and infrastructure for managing information systems and analyzing data to produce health intelligence.
- e) Developing information systems for health, including electronic health records and civil registries that systematically and routinely facilitate interconnectivity and interoperability through data integration processes.

26. The absence of leadership in the implementation of digitization projects, evidenced in a lack of focus on the issue in national strategic health plans, can be a significant impediment to strengthening integrated, interoperable systems. Failure to plan for informatics needs has resulted in isolated systems that hinder information exchange and are expensive to maintain. In addition, many of these systems currently rely on technologies that are obsolete or functionally limited.

27. Rapid technological development requires the Region to prepare for innovations that will affect health systems, such as predictive and prescriptive analytics, the internet of things, cloud computing, big data analysis, and artificial intelligence.

Proposal

28. This plan of action is designed mainly for health sector institutions at the national and subnational level. However, given the characteristics of the proposed framework for action, it is important for different entities to be involved in its implementation, including groups of experts (especially from academia), multilateral and bilateral agencies, nongovernmental institutions, and civil society sectors that not only support the health sector but produce and analyze relevant data for action in public health, such as the data used for standards, population databases, and training materials.

29. The goal of this plan of action is to strengthen the activities of Member States aimed at upgrading health systems through the use of interconnected and interoperable information systems. It will also help the Member States introduce information and communication technologies and improve information exchange and the management of structured and unstructured data³ for the benefit of public health.

30. This plan of action is intended to help the Member States lay the necessary foundations for quality management of data and information; the collection and use of cumulative knowledge and experience for the production of health sector intelligence to support decision-making; policy development, monitoring, and evaluation; the introduction of cost-effective technology solutions; the improvement and adoption of standards; the drafting of legislation; and the strengthening of human resource capacity for proper implementation of information systems for health as appropriate to the contexts, needs, vulnerabilities, and priorities of Member States.

³ Unstructured data are content without an identifiable internal structure, unlike traditional databases. They are large clusters of disorganized information objects that have no value until they are identified, processed, and stored in an organized way. Social networks are an example of this.

31. This plan of action is structured around four strategic lines of action, with their respective strategic objectives and progress indicators.

Strategic Line of Action 1: Information system management and governance

32. This refers to institutional strengthening for process management, decision-making, and policy-making, based on the different components of an information system for health, with emphasis on leadership; use of information technology; data production, management, and processing; infrastructure for internet access; standards and regulations for the development or introduction of software applications and databases; enhanced capacity building; and review and updating of legislation.

Objective	Indicator	Baseline (2019)	Target (2023)
1.1 Strengthen the management and governance mechanisms of information systems for health	1.1.1 Number of countries and territories that have implemented a governance mechanism (policy, plan of action, or strategy) for information systems for health	5	10
	1.1.2 Number of countries and territories that have used the PAHO model to determine the maturity of their information systems	5	15
	1.1.3 Number of countries and territories that have a regulatory framework that supports the use, management, and exchange of data and information through electronic media and addresses the aspects of dissemination, access, privacy, ethics, interoperability, and domain or property	0	10
	1.1.4 Number of countries and territories that have developed their health information architecture with emphasis on the flow and processing of relevant data for the health sector	0	10
	1.1.5 Number of countries and territories with a monitoring and evaluation framework for their information systems for health	0	10
	1.1.6 Number of countries and territories with an interinstitutional committee for implementation of information systems for health	2	10
	1.1.7 Number of countries and territories that have adopted national policies and created government or private sector electronic health record (EHR) portals with open data for health	15	19

Objective	Indicator	Baseline (2019)	Target (2023)
	1.1.8 Number of countries and territories that have implemented a national health data governance strategy or policy for continuous quality assurance, security, and confidentiality of data	0	10
	1.1.9 Number of countries and territories that have introduced methods and tools for the analysis of unstructured data for the benefit of public health	0	10
	1.1.10 Number of countries and territories that report data disaggregated by age group, sex, and ethnicity at the national and subnational level	4	15

Strategic Line of Action 2: Data management and information technologies

33. This refers to technology tools and regulatory instruments, standards for electronic health records, the identification and classification of information products, technology infrastructure, and the definition, classification, and integration of health data sources comprised of structured and unstructured data.

Objective	Indicator	Baseline (2019)	Target (2023)
2.1 Promote the development of interconnected and interoperable information systems	2.1.1 Number of countries and territories that have introduced standards to facilitate the interoperable exchange of data (e.g., Fast Healthcare Interoperability Resources - FHIR)	10	15
	2.1.2 Number of countries and territories that have set standards for the introduction of new information and communication technologies	10	15
	2.1.3 Number of countries and territories with a national electronic health records system (for at least the public health sector) based on the use of unique identification numbers or patient matching utilizing health information technology	10	18
	2.1.4 Number of countries and territories that have developed or introduced a tool (data dictionary) to describe the type of data compiled in a database, their format and structure, and how they are used in the health system	2	10

Objective	Indicator	Baseline (2019)	Target (2023)
	2.1.5 Number of countries and territories with formal standard operating procedures for secure access to data for health organizations (public and private) that allow patients to securely access their health data	2	10

Strategic Line of Action 3: Information and knowledge management

34. This refers to active participation by the scientific and academic community, civil society, and information producers and users in the real-time collection or capture of data and information, and facilitation of access to accurate information at the right time and in the right format.

Objective	Indicator	Baseline (2019)	Target (2023)
3.1 Promote the production and exchange of technical and scientific information to support the operation of information systems	3.1.1 Number of countries and territories that have adopted methodologies to document lessons learned, experiences, and good practices, and to promote the sharing of knowledge about the implementation of information systems	To be determined	10
	3.1.2 Number of countries and territories in which academic institutions or professional associations participate in national committees to support the implementation of information systems for health	2	5
	3.1.3 Number of countries and territories that participate in communities of practice to create information services or resources, ensuring that populations in conditions of vulnerability are taken into consideration	0	10

Strategic Line of Action 4: Innovation, integration, and convergence

35. This refers to the introduction of innovative methodological models and technological applications related to the rapid growth of the internet, the evolution of information technology, and big data, including the health sector's participation in e-government and open government initiatives. It also includes the implementation of a digital literacy strategy to develop a pool of trained human resources to function in the information society, using information and communication technologies, and managing databases that facilitate informed policy- and decision-making (1).

Objective	Indicator	Baseline (2019)	Target (2023)
4.1 Establish a network of institutions and experts to advise PAHO and the Member States on the introduction of innovative models for the development of information systems	4.1.1 The Member States have formed a network to ensure the introduction of models and technologies that facilitate digital transformation in the health sector	0	1
	4.1.2 The Member States have a standardized monitoring and evaluation framework consisting of a set of key performance indicators, as well as key objectives and outcomes for establishing, communicating, and periodically monitoring targets and outcomes in the implementation of information systems for health	0	1
	4.1.3 Number of countries and territories in which the health sector formally participates in e-government initiatives, including the introduction of standards for national use and global use (e.g. SNO-med), the optimization of investments in technology infrastructure, and the convergence of current initiatives and investments	4	10
4.2 Improve human resource training in all aspects of information systems for health	4.2.1 Number of countries and territories with ongoing professional training strategies or digital literacy programs for the use of new technologies	To be determined	5

Monitoring and Evaluation

36. This plan of action contributes to the achievement of goals 6 and 7 of the Sustainable Health Agenda for the Americas 2018-2030.

37. Monitoring and evaluation will be consistent with the Organization's results-based management framework and performance management procedures. Progress toward achievement of the goals contained in the plan of action will be evaluated through a progress report to the Governing Bodies of PAHO in 2022. For an in-depth review of the progress made, a final report will be submitted in 2024.

Financial Implications

38. The estimated cost of implementing the plan of action for the period 2019-2023 is US\$ 3,750,000,⁴ which includes expenditures on technical and administrative staff, as well as direct technical cooperation activities for the implementation of national plans and policies on information systems for health. The estimated financing gap is 25% of the total budgeted amount. Meeting the goals established in this plan will require the Member States' commitment and investment in its implementation, together with support from collaborating centers and relevant partners. The Pan American Sanitary Bureau is fully committed to providing the necessary technical cooperation and support with seed capital for the development of projects on information systems for health. Substantial support will also be provided by the PAHO/WHO Representative Offices in the countries and specialized Pan American centers, such as BIREME, the Latin American Center for Perinatology and Human Development (CLAP), and the Pan American Foot-and-Mouth Disease Center (PANAFTOSA) to forge partnerships and identify donors that will support the plan in the countries.

Action by the Directing Council

39. The Directing Council is requested to review the Plan of Action for Strengthening Information Systems for Health 2019-2023, make the relevant comments and recommendations, and consider adopting the proposed resolution presented in Annex A.

Annexes

References

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⁴ Unless otherwise indicated, all monetary amounts in this report are expressed in United States dollars.

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57th DIRECTING COUNCIL

71st SESSION OF THE REGIONAL COMMITTEE OF WHO FOR THE AMERICAS

Washington, D.C., USA, 30 September-4 October 2019

CD57/9, Rev. 1
Annex A
Original: Spanish

PROPOSED RESOLUTION

PLAN OF ACTION FOR STRENGTHENING INFORMATION SYSTEMS FOR HEALTH 2019-2023

THE 57th DIRECTING COUNCIL,

(PP1) Having reviewed the *Plan of Action for Strengthening Information Systems for Health 2019-2023* (Document CD57/9, Rev. 1);

(PP2) Having considered the need to support the Plan of Action for the Strengthening of Vital Statistics 2017-2022 and advance with the countries of the Caribbean, Central America, and South America in implementing the conclusions and recommendations of the three high-level meetings on information systems for health;

(PP3) Bearing in mind that the Sustainable Health Agenda for the Americas 2018-2030 proposes a specific goal (goal 6) aimed at “improving information systems for health (IS4H), which are essential in order to improve health policy and decision-making, as well as to measure and monitor health inequalities in the population and progress toward the achievement of universal access to health and universal health coverage”;

RESOLVES:

(OP)1. To approve the *Plan of Action for Strengthening Information Systems for Health 2019-2023* (Document CD57/9, Rev. 1).

(OP)2. To urge the Member States, considering their contexts, needs, vulnerabilities, and priorities, to:

- a) promote implementation of the Plan of Action for Strengthening Information Systems for Health 2019-2023 to advance more effectively toward integrated and interoperable systems;
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- b) support implementation of the national and subnational initiatives spelled out in the plan in order to integrate data on populations in conditions of vulnerability into the health systems;
- c) strengthen the technical capacity and competencies of health workers, especially in primary care, to improve data collection and data sharing for more informed decision-making based on the greatest possible evidence.

(OP)3. To request the Director to:

- a) provide technical support to the Member States to strengthen national capacity for the implementation of interconnected and interoperable information systems for health;
- b) provide technical support to the Member States for standardized measurement of the maturity of information systems for health;
- c) support technical teams in developing countries' capacity to produce complete and up-to-date quality data and information and report regularly on progress in monitoring the achievement of the Sustainable Development Goals, health situation analysis, and scenario development.

Report on the Financial and Administrative Implications of the Proposed Resolution for PASB

1. Agenda item: 4.7 - Plan of Action for Strengthening Information Systems for Health 2019-2023

2. Linkage to the Proposed PAHO Program Budget 2020-2021:*

Outcome 20: Integrated information systems for health developed and implemented with strengthened capacities in Member States and the Pan American Sanitary Bureau.

Output 20.1: Countries and territories enabled to develop and implement national plans for strengthening information systems for health (IS4H) that are based on assessments.

* *The proposed Program Budget 2020-2021 was presented to the 13th Session of the Subcommittee on Program, Budget and Administration and the 164th Session of the Executive Committee. The 57th Directing Council will review this proposal in September 2019. Therefore, the final version of the Program Budget may contain certain changes in the outcomes, which will be reflected in this Plan of Action as well.*

3. Financial implications:

a) Total estimated cost for implementation over the lifecycle of the resolution (including staff and activities):

The estimated cost of implementing the plan over the period 2019-2023 will be US\$ 3,750,000 and includes the expenditures corresponding to technical and administrative staff, as well as direct technical cooperation activities for implementing national plans and policies on information systems for health. The estimated gap is 25% of the total budgeted amount. Meeting the goals of this regional plan will require the Member States' commitment and investment in its implementation, as well as support from collaborating centers and relevant partners.

Areas	Estimated cost (in US\$)
Human resources	2,000,000
Training	300,000
Consultants/service contracts	700,000
Travel and meetings	400,000
Publications	200,000
Supplies and other expenses	150,000
Total	3,750,000

b) Estimated cost for the 2020-2021 biennium (including staff and activities):

The estimated cost of implementing the plan for the period 2020-2021 will be US\$ 1.5 million and includes the expenditures corresponding to technical and administrative staff, as well as direct technical cooperation activities for implementing national plans and policies on information systems for health.

c) Of the estimated cost noted in b), what can be subsumed under existing programmed activities?

Of the estimated cost, 40% could be subsumed under existing programmed activities.

4. Administrative implications:

a) Indicate the levels of the Organization at which the work will be undertaken:

All levels of the Organization (regional, subregional, and country) will participate in activities to implement the plan of action, in keeping with their defined responsibilities.

b) Additional staffing requirements (indicate additional required staff full-time equivalents, noting necessary skills profile):

It will be necessary to work with experts in a network and engage in formal collaboration with institutions of excellence, strengthening current initiatives and taking advantage of existing capacities in Member States. Additional posts will not be needed, since a list of experts with the specific competencies needed to support the plan of action's four strategic lines of action has already been drawn up.

c) Time frames (indicate broad time frames for the implementation and evaluation):

Time frames for the implementation and evaluation activities are aligned with those established in the Organization's strategic and operational planning—that is, with the programs and budgets and the Strategic Plan, following the schedule adopted by the Governing Bodies.

To evaluate the progress made in achieving the targets of the plan of action, a progress report will be presented to the Governing Bodies in 2022. For deeper analysis of the progress made, a final report will be presented in 2024 .

Analytical Form to Link Agenda Item with Organizational Mandates

1. Agenda item: 4.7 - Plan of Action for Strengthening Information Systems for Health 2019-2023
2. Responsible unit: Department of Evidence and Intelligence for Action in Health (EIH)
3. Preparing officer: Dr. Jacobo Finkelman, Interim Director, and Mr. Marcelo D'Agostino, Senior Advisor in Information Systems for Health
4. Link between Agenda item and Sustainable Health Agenda for the Americas 2018-2030: The Sustainable Health Agenda for the Americas 2018-2030 includes a specific goal (goal 6) for improving information systems for health (IS4H), which are essential for improving health policy and decision-making and for measuring and monitoring health inequalities in the population and progress toward the achievement of universal access to health and universal health coverage
<p>5. Link between Agenda item and the Proposed Strategic Plan of the Pan American Health Organization 2020-2025:*</p> <p><i>Outcome 20:</i> Integrated information systems for health developed and implemented with strengthened capacities in Member States and the Pan American Sanitary Bureau.</p> <p><i>* The proposed PAHO Strategic Plan 2020-2025 was presented to the 13th Session of the Subcommittee on Program, Budget and Administration and the 164th Session of the Executive Committee. The 57th Directing Council will review this proposal in September 2019. Thus, the final version of the Strategic Plan may contain certain changes in the outcomes, which will be reflected in this Plan of Action as well.</i></p>
<p>6. List of collaborating centers and national institutions linked to this Agenda Item:</p> <p>The plan of action will require greater collaboration with national and academic institutions working in a network and an increase in collaborating centers working in the field of information systems and information technology:</p> <ul style="list-style-type: none"> • CARICOM Technical Working Group on Information Systems for Health • Italian Hospital of Buenos Aires (Argentina) • University of Illinois (United States) • University of Utah (United States) • Harvard University (United States) • Open University of Catalonia (Spain) • Inter American Development Bank (IDB) • United States Agency for International Development

- International Telecommunications Union (UTI)
- Economic Commission for Latin America and the Caribbean (ECLAC)

7. Best practices in this area and examples from countries within the Region of the Americas:

The Region has numerous successful initiatives for strengthening information systems for health, especially in the areas of open government, laws on access to information and open data, and aspects of the use of applications for electronic health records.

Examples of support networks in these areas are the Latin American and Caribbean Network for Strengthening Health Information Systems (RELACSYS), the American Network of Cooperation on Electronic Health Records (RACSEL), and the Virtual Health Library (VHL). Other examples of open data and open government initiatives supported by updated legislation in these areas can be found on the open data portals of countries such as Argentina (<https://datos.gob.ar>), Brazil (<http://dados.gov.br>), Canada (<https://open.canada.ca/en/open-data>), Chile (<http://datos.gob.cl>), Colombia (<https://www.datos.gov.co>), the United States (<https://healthdata.gov>), Jamaica (<https://data.gov.jm>), Mexico (<https://datos.gob.mx>), Saint Lucia (<https://data.govt.lc>), and Uruguay (<https://catalogodatos.gub.uy>), among others.

8. Financial implications of this Agenda item:

The estimated total budget for implementing this plan of action for the period 2019-2023 is US\$ 3,750,000.
