BIREME
Strategy 2023-2025

PAHO

Pan American Health Organization

World Health Organization

Regional Office for the Americas

BIREME Strategy 2023-2025

Executive Summary

BIREME is a specialized PAHO/WHO Center affiliated with the Department of Evidence and Intelligence for Action in Health (EIH). As the Latin American and Caribbean Center on Health Sciences Information, BIREME conducts a mission of health promotion by enabling access to and use of scientific and technical information for action in health. With an intensified focus on Latin American and Caribbean countries, BIREME contributes to PAHO and WHO's vision by developing and operating information products and services for health.

With this scope of operation, BIREME is centrally affected by the global megatrend towards digital transformation, which presents various challenges and opportunities. In this context, BIREME's Advisory Committee recommended the development of a Strategy for the Center, presented in this document. This strategy aims to contribute to realizing PAHO's vision and facilitate the development of BIREME's transition to 4.0 information products and services. It is also expected to contribute to the reification of the Five Pillar Vision proposed by PAHO Director in 2023, particularly the PAHO Forward Approach.

Thus, besides the requirements for an advanced digital transformation, this strategy is based on PAHO-wide programmatic priorities. Priority topics were selected from impact indicators showing insufficient progress toward the Sustainable Development Goals (SDGs) and the Sustainable Health Agenda for the Americas (SHAA). Further prioritization was carried out considering BIREME's current portfolio and expertise. Reducing the burden of communicable and non-communicable diseases, the prevention of suicide, and the reduction of maternal mortality are regarded as topics of particular interest. These topics will be developed in coordination with the relevant PAHO/WHO technical units. Four areas of work were identified to receive intensified efforts:

- Strengthening the capacity of lay people and communities for health-related decision-making;
- Strengthening the capacity of professional decision-making;
- Support health policy development;
- Support health research.

Nine strategic interventions were devised to address opportunities for improvement, build on strengths, and facilitate the development of focus areas. A theory of change articulating the nine strategic interventions with the four areas of work leading to PAHO's vision is included in the strategy. Innovation plays a central role in the theory of change, and a brief innovation plan is also presented in this strategy. The top 10 priority projects and activities for the 2024-2025 biennium are highlighted.

This document also contains an integrative matrix for the BIREME Strategy 2023-2025. In this matrix, the aims of the BIREME Strategy are lined up with outcomes, actions, outputs, and key performance indicators. Through the matrix, the strategy is materialized into actions and impact. A monitoring and evaluation plan is also presented.

Implementing the BIREME Strategy 2023-2025 will facilitate the development of 4.0 information products, contributing to PAHO's vision and consolidating the Center as" **the Pan American Center of Information for Action in Health."**

Resumen Ejecutivo

BIREME es un Centro especializado de la OPS/OMS afiliado al Departamento de Evidencia e Inteligencia para la Acción en Salud (EIH). Como Centro Latinoamericano y del Caribe de Información en Ciencias de la Salud, BIREME lleva a cabo una misión de promoción de la salud, facilitando el acceso y el uso de información científica y técnica para la acción en salud. Con un enfoque intensificado en los países de América Latina y el Caribe, BIREME contribuye a la visión de la OPS y la OMS mediante el desarrollo y la operación de productos y servicios de información para la salud.

Con este ámbito de actuación, BIREME se ve afectada centralmente por la megatendencia global hacia la transformación digital avanzada, que presenta diversos desafíos y oportunidades. En este contexto, el Comité Asesor de BIREME recomendó el desarrollo de una Estrategia para el Centro, presentada en este documento. Esta estrategia tiene como objetivo contribuir a la realización de la visión de la OPS y facilitar el desarrollo de la transición de BIREME hacia productos y servicios de información 4.0. También se espera que contribuya a la reificación de la Visión de Cinco Pilares propuesta por el Director de la OPS en 2023, en particular el abordage "Adelante OPS" (PAHO Forward).

Así, además de los requisitos para una transformación digital avanzada, esta estrategia se basa en las prioridades programáticas de toda la OPS. Los temas prioritarios fueron seleccionados a partir de los indicadores de impacto que muestran un progreso insuficiente hacia los Objetivos de Desarrollo Sostenible (ODS) y la Agenda de Salud Sostenible para las Américas (SHAA). La priorización se llevó a cabo teniendo en cuenta la cartera actual y la experiencia de BIREME. La reducción de la carga de enfermedades transmisibles y no transmisibles, la prevención del suicidio y la reducción de la mortalidad materna se consideran temas de particular interés. Estos temas se desarrollarán en coordinación con las unidades técnicas pertinentes de la OPS/OMS. Se identificaron cuatro áreas de trabajo en las que se intensificarán los esfuerzos:

- Fortalecimiento de la capacidad de personas legas y las comunidades para la toma de decisiones relacionadas con la salud;
- Fortalecimiento de la capacidad de los profesionales de salud para la toma de decisiones;
- Apoyar el desarrollo de políticas sanitarias;
- Apoyar la investigación sanitaria.

Se diseñaron nueve intervenciones estratégicas para abordar las oportunidades de mejora, aprovechar los puntos fuertes y facilitar el desarrollo de las áreas prioritarias. En la estrategia se incluye una teoría del cambio que articula las nueve intervenciones estratégicas con las cuatro áreas de trabajo que conducen a la visión de la OPS. La innovación desempeña un papel central en la teoría del cambio, y en esta estrategia también se presenta un breve plan de innovación. Se destacan los 10 proyectos y actividades prioritarios para el bienio 2024-2025.

Este documento también contiene una matriz integradora para la Estrategia BIREME 2023-2025. En esta matriz, los objetivos de la Estrategia BIREME se alinean con los resultados, acciones, productos e indicadores clave de rendimiento. A través de la matriz, la estrategia se materializa en acciones e impacto. También se presenta un plan de seguimiento y evaluación.

La implementación de la Estrategia BIREME 2023-2025 facilitará el desarrollo de productos de información 4.0, contribuyendo a la visión de la OPS y consolidando el Centro como "**el Centro Panamericano de Información para la Acción en Salud**".

Resumo Executivo

A BIREME é um centro especializado da OPAS/OMS afiliado ao Departamento de Evidência e Inteligência para Ação em Saúde (EIH). Como Centro Latino-Americano e do Caribe de Informação em Ciências da Saúde, a BIREME tem como missão a promoção da saúde, facilitando o acesso e o uso de informações científicas e técnicas para a ação em saúde. Com um foco intensificado nos países da América Latina e do Caribe, a BIREME contribui para a visão da OPAS e da OMS ao desenvolver e operar produtos e serviços de informação para a saúde.

Com esse escopo de atuação, a BIREME é afetada de forma central pela megatendência global de transformação digital, que apresenta vários desafios e oportunidades. Nesse contexto, o Comitê Assessor da BIREME recomendou o desenvolvimento de uma Estratégia para o Centro, apresentada neste documento. Essa estratégia visa contribuir para a concretização da visão da OPAS e facilitar o desenvolvimento da transição da BIREME para produtos e serviços de informação 4.0. Também se espera que contribua para a reificação da Visão de Cinco Pilares proposta pelo Diretor da OPAS em 2023, particularmente a "Adiante OPAS" (PAHO Forward).

Assim, além dos requisitos para uma transformação digital avançada, essa estratégia é baseada nas prioridades programáticas de toda a OPAS. Os tópicos prioritários foram selecionados a partir de indicadores de impacto que mostram progresso insuficiente em relação aos Objetivos de Desenvolvimento Sustentável (ODS) e à Agenda de Saúde Sustentável para as Américas (ASSA). A priorização adicional foi realizada considerando o portfólio atual e a experiência da BIREME. A redução do ônus das doenças transmissíveis e não transmissíveis, a prevenção do suicídio e a redução da mortalidade materna são considerados tópicos de interesse especial. Esses tópicos serão desenvolvidos em coordenação com as unidades técnicas relevantes da OPAS/OMS. Quatro áreas de trabalho foram identificadas para receber esforços intensificados:

- Fortalecimento da capacidade das pessoas leigas e das comunidades para a tomada de decisões relacionadas à saúde;
- Fortalecimento da capacidade de tomada de decisões dos profissionais;
- Apoio ao desenvolvimento de políticas de saúde;
- Apoio à pesquisa em saúde.

Nove intervenções estratégicas foram planejadas para abordar oportunidades de melhoria, aproveitar os pontos fortes e facilitar o desenvolvimento de áreas de foco. Uma teoria da mudança que articula as nove intervenções estratégicas com as quatro áreas de trabalho que levam à visão da OPAS está incluída na estratégia. A inovação desempenha um papel central na teoria da mudança, e um breve plano de inovação também é apresentado nesta estratégia. Os 10 principais projetos e atividades prioritários para o biênio 2024-2025 são destacados.

Esse documento também contém uma matriz integrativa para a Estratégia BIREME 2023-2025. Nessa matriz, os objetivos da Estratégia BIREME são alinhados com resultados, ações, produtos e indicadores-chave de desempenho. Por meio da matriz, a estratégia é materializada em ações e impactos. Um plano de monitoramento e avaliação também é apresentado.

A implementação da Estratégia BIREME 2023-2025 facilitará o desenvolvimento de produtos de informação 4.0, contribuindo para a visão da OPAS e consolidando o Centro como "**o Centro Panamericano de Informação para Ação em Saúde**".

Summary

BIREME Strategy 2023-2025

Introduction

BIREME[1] is a specialized PAHO/WHO Center affiliated with the Department of Evidence and Intelligence for Action in Health (EIH). It was established in 1967 in São Paulo, Brazil, as a Regional Library of Medicine, and in 1982, it became the Latin American and Caribbean Center on Health Sciences Information. BIREME conducts a mission of health promotion by enabling access to and use of scientific and technical information for action in health. With an intensified focus on Latin American and Caribbean countries, BIREME contributes to PAHO and WHO's vision by developing and operating information products and services for health (Figure 1, Box 1).

Nevertheless, BIREME's scope of operation is centrally affected by the global megatrend towards advanced digital transformation. The current stage of digital transformation is reshaping human interactions, culture, and businesses worldwide. The exponential increase in information processing capacity, hyperconnectivity, mobile technology's ubiquity, and new machine learning developments are forging the fourth industrial revolution and the birth of Industry 4.0. With the ability to process vast amounts of data and automate repetitive tasks, artificial intelligence (AI) is driving significant improvements in efficiency and productivity, enabling organizations to make better decisions faster and with greater accuracy. Thus, digital transformation presents simultaneously an array of opportunities and challenges for BIREME.

The main attributes of 4.0 information products and services are summarized in Box 2. These attributes should guide the development of the next generation of BIREME's information products and services. The transition to Industry 4.0 requires significant technological and operational advancements. In this context, the BIREME Advisory Committee suggested developing the Center's Strategy presented in this document. The intended audience of the present Strategy is BIREME stakeholders and PAHO/WHO personnel. The guiding principles and methods used in preparing this document are summarized in Box 3.

Purpose of the Strategy
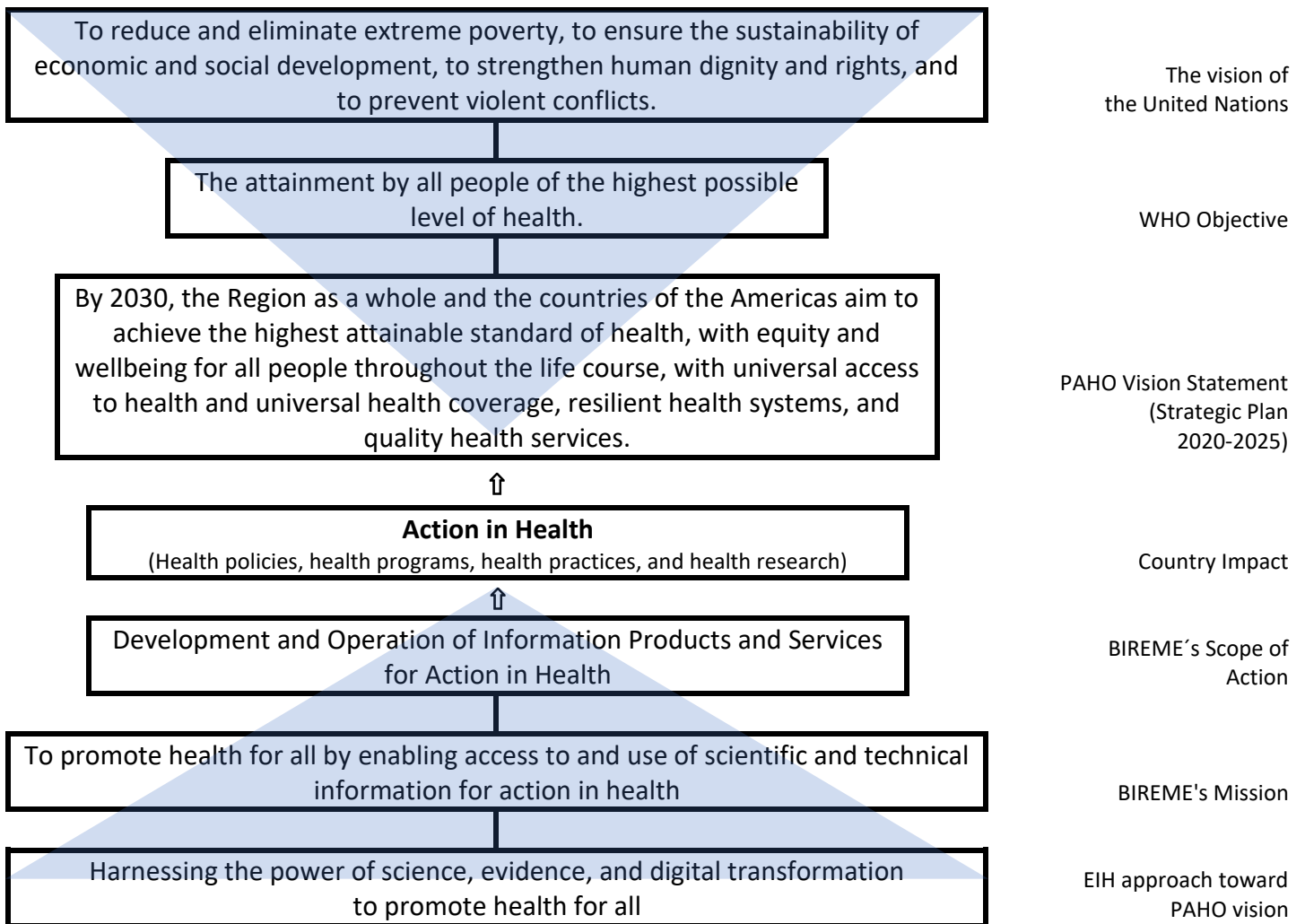
The purpose of this strategy is twofold:

1. To contribute to the realization of PAHO's vision and the Five Pillar Vision (PAHO Forward)[2];

2. To facilitate BIREME's transition to 4.0 information products and services.

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[1] "BIREME" is a noun that alludes to the Center origins as a regional library of medicine (*BIblioteca REgional de MEdicina)*.
[2] PAHO Strategic Plan 2020-2025

To reduce and eliminate extreme poverty, to ensure the sustainability of economic and social development, to strengthen human dignity and rights, and to prevent violent conflicts.	The vision of the United Nations
The attainment by all people of the highest possible level of health.	WHO Objective
By 2030, the Region as a whole and the countries of the Americas aim to achieve the highest attainable standard of health, with equity and wellbeing for all people throughout the life course, with universal access to health and universal health coverage, resilient health systems, and quality health services.	PAHO Vision Statement (Strategic Plan 2020-2025)
Action in Health (Health policies, health programs, health practices, and health research)	Country Impact
Development and Operation of Information Products and Services for Action in Health	BIREME´s Scope of Action
To promote health for all by enabling access to and use of scientific and technical information for action in health	BIREME's Mission
Harnessing the power of science, evidence, and digital transformation to promote health for all	EIH approach toward PAHO vision

Figure 1: BIREME's logic model (BIREME contributes to the realization of PAHO's vision within EIH's approach toward that vision. With that approach, BIREME promotes health for all by enabling access to and use of scientific and technical information for action in health. This mission is conducted through developing and operating Information Products and Services, which are expected to support Action in Health at the country level. Action in Health is vital for impact at the country level and advancement toward the PAHO vision, contributing to the WHO objective and UN vision).

BIREME/EIH/PAHO/WHO

Box 1: BIREME Information Products and Services

BIREME develops and operates over 40 information products and services, including:

1. LILACS (Health Sciences Latin American and Caribbean Literature)
   - Access to 1.2M documents
2. The Global Index Medicus (Knowledge Management System that integrates WHO regional databases of scientific literature)
3. DECS/MESH
   - Multilingual thesaurus DeCS/MeSH – Health Science Descriptors/Medical Subject Headings
   - DeCS Finder (Application)
4. The Virtual Health Library
   - A scientific and technical evidence portal with 53 sources of information, access to 34M documents, and 14 million users
   - 67 local instances in 30 countries and 2300 organizations affiliated with the BVS network
5. Windows of Knowledge
   - Summaries of scientific and technical evidence
6. Evidence maps and living systematic reviews
7. BIGG, an international repository of GRADE guidelines
8. BIGG-REC, a repository of PAHO and WHO recommendations
9. PIE, a repository of Evidence-informed health policies
10. EVID@Easy: an application for guided search of scientific evidence
11. e-Blue info: an application to facilitate health provider's access to health information
12. SOF (Formative Second Opinion), an information program to support health providers' practice and continued education
13. ProEthos: Processing tool for bioethics review of scientific projects
14. Training courses and project management for the development and operation of new information products and services

Box 2: The main attributes of 4.0 information products and services

1. **Personalization:** With the help of artificial intelligence and machine learning algorithms, information products and services are customized to meet individual users' specific needs and preferences.
2. **Real-time data:** 4.0 information products and services provide users with access to up-to-date, real-time data, enabling them to make informed decisions and take action quickly.
3. **Mobility:** Information products and services are increasingly designed to be accessed from mobile devices, allowing users to stay connected and productive on the go.
4. **Interconnectivity:** 4.0 information products and services are designed to be interconnected, allowing users to easily access and share data across different platforms and devices.
5. **Security:** With the increased use of digital technologies and data sharing, security and privacy become essential features of information products and services.
6. **Automation:** Many 4.0 information products and services are designed to be automated, using algorithms and other tools to analyze data and make decisions without human intervention.
7. **Collaboration:** Information products and services are increasingly designed to facilitate cooperation and teamwork, enabling users to collaborate and share information more easily.

Box 3: Guiding principles and methods used in the development of the BIREME Strategy 2023-2025

> **Guiding Principles**
>
> 1. Alignment with the Sustainable Health Agenda for the Americas 2018-2030, PAHO's Strategic Plan 2020-2025 and PAHO Forward approach;
>
> 2. Integration within EIH approach towards PAHO's Vision;
>
> 3. Positioning towards Action for Health;
>
> 4. Producing impact at the country level (country focus)
>
> 5. Enabling the transition towards 4.0 Information Products and Services
>
> **Methods**
>
> The BIREME Strategy for 2023-2025 was developed in five steps:
>
> 1. Situational analysis
>
> 2. Adoption of guiding principles for Strategy Development
>
> 3. Iterative strategic planning
>
> 4. Development of a roadmap for implementing the BIREME Strategy 2023-2025
>
> 5. Development of key performance indicators and a matrix for monitoring and evaluating the Strategy.
>
> Through these steps, a draft Strategy was prepared, presented, and shared with multiple stakeholders, including staff from BIREME and other PAHO units. Feedback was incorporated, and an advanced draft was reviewed by BIREME's Scientific Committee, which considered the present strategy a valid approach to stimulate innovation, favor digital transformation, and facilitate developing and implementing a work plan conducive to BIREME's objectives. The Scientific Committee supported the adoption of agile methodologies, noted the centrality of users' needs when developing and operating information products, and provided additional recommendations. The proposed Strategy was then revised and presented at the 2023 BIREME Advisory Committee meeting. The Advisory Committee recognized the proposed strategy as a valid approach to contribute to PAHO's vision of health for all and to facilitate the development of information products compatible with the most advanced stage of digital transformation. With this input, the Strategy was finalized and moved to the implementation phase in the third quarter of 2023.

The Strategy

Strategic priorities will drive BIREME's program of work

While all health promotion activities are beneficial, resources are limited, and BIREME must focus on strategic priorities. The situational analysis and strategic planning based on guiding principles (Box 3) indicate the need for focused efforts and producing impact at the country level. Thus, programmatic priorities for BIREME were developed primarily based on PAHO-wide programmatic priorities, highlighting the EIH approach towards PAHO's vision (Box 4).
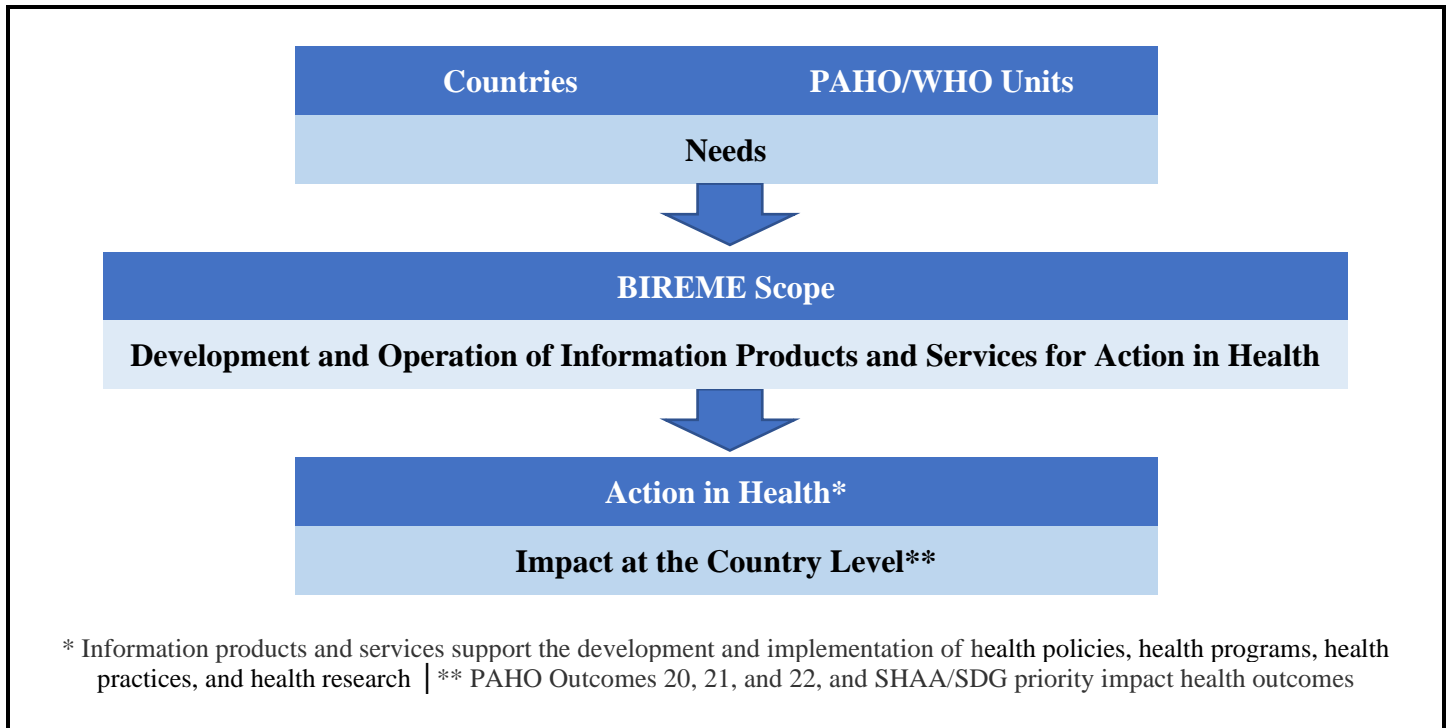
Priority topics were derived from impact indicators currently showing insufficient progress towards the SDGs and SHAA, with additional prioritization considering BIREME's current portfolio and expertise. Reducing the burden of non-communicable diseases is a high priority across PAHO countries. The frequency of suicide in the Region is increasing and not decreasing. Maternal mortality is the SDG target with the most minor progress in the Region. The agenda for the elimination of communicable diseases is also highlighted.

Box 4: BIREME's programmatic priorities and priority topics

Programmatic priorities	Priority Topics*
• Country focus • Vulnerable populations • Primary Health Care • Preparedness and response to public health emergencies • Inter-programmatic action and systemic approach • Data-driven, evidence-informed health decision-making	• Reduction of **Communicable and Non-Communicable Diseases** • **Suicide prevention** • Reduction of **Maternal Mortality**

* Derived from impact indicators currently showing insufficient progress towards SDG/SHAA.

Countries	PAHO/WHO Units
Needs	

BIREME Scope

Development and Operation of Information Products and Services for Action in Health

Action in Health*

Impact at the Country Level**

* Information products and services support the development and implementation of health policies, health programs, health practices, and health research │ ** PAHO Outcomes 20, 21, and 22, and SHAA/SDG priority impact health outcomes

Figure 2: BIREME's Operational Framework of Impact

Box 5: BIREME's Priority Areas of Work and Activities*

- **Strengthening the capacity of lay people and communities for safe and effective health-related decision-making**
  - Development of knowledge derivatives and tools for lay people and communities
- **Strengthening the capacity of healthcare workers for safe and effective decision-making**
  - Enabling access to evidence-based recommendations and guidelines
  - Development and operation of information sources (e.g., databases, evidence maps)
  - Development of knowledge derivatives and tools for health providers
- **Support health policy development**
  - Evidence retrieval, synthesis, and dissemination
- **Support health research**
  - Access to the scientific literature
  - Identification of critical knowledge gaps

* non-exclusive.

While this prioritization reflects on the need to integrate with other PAHO efforts and focuses on acceleration towards SDG and SHAA[3], it should be noted that activities to be developed by BIREME will be conducted responding to countries' needs and in coordination with the relevant PAHO technical units (Figure 2).

A mapping of gaps and opportunities for more significant impact within the Organization was carried out as part of the situational analysis. Strengthening lay people's and communities' capacity for health-related decision-making emerged as an opportunity for a more significant impact at the country level. Identifying and surveilling critical knowledge gaps could also contribute to developing agendas for regional health research.

As part of this exercise, four priority areas of work were identified and proposed for development in BIREME's plan of work (Box 5).

PAHO strategic plan works the notion of key countries, countries that should receive intensified attention and support to streamline advancement towards PAHO vision. BIREME responds to the needs of all countries in the Americas Region. Still, additional efforts need to be dedicated to Belize, Bolivia, Guatemala, Haiti, Honduras, Nicaragua, Paraguay, and Suriname[4].

Thus, taken together, programmatic priorities, priority topics, key countries, and priority areas of focus function as criteria for revising the current portfolio and developing the new work program for 2024-2025. For example, a project on information products for lay people to reduce the burden of non-communicable diseases in key countries should be considered a priority project within BIREME's portfolio.

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[3] 2022 PMA2 exercise held in February 2023.
[4] PAHO Strategic Plan 2020-2025

The Pathway to the Information Industry 4.0

The situational analysis and strategic planning led to nine interventions facilitating the transition to the information industry 4.0 and the development of a new generation of information products and services (Box 2). These nine strategic interventions are articulated with identified priority areas of work in a Theory of Change (Figure 3).

Strategy Implementation

The BIREME Strategy 2023-2025 is a high-level document summarizing the master plan and overall approach to guide the entity management and the development and implementation of BIREME's work plan. Strategic Interventions included in the BIREME Theory of Change will be unfolded in specific action plans. Given innovation's leading role in this strategy, the Innovation plan for BIREME is summarized in Box 6.
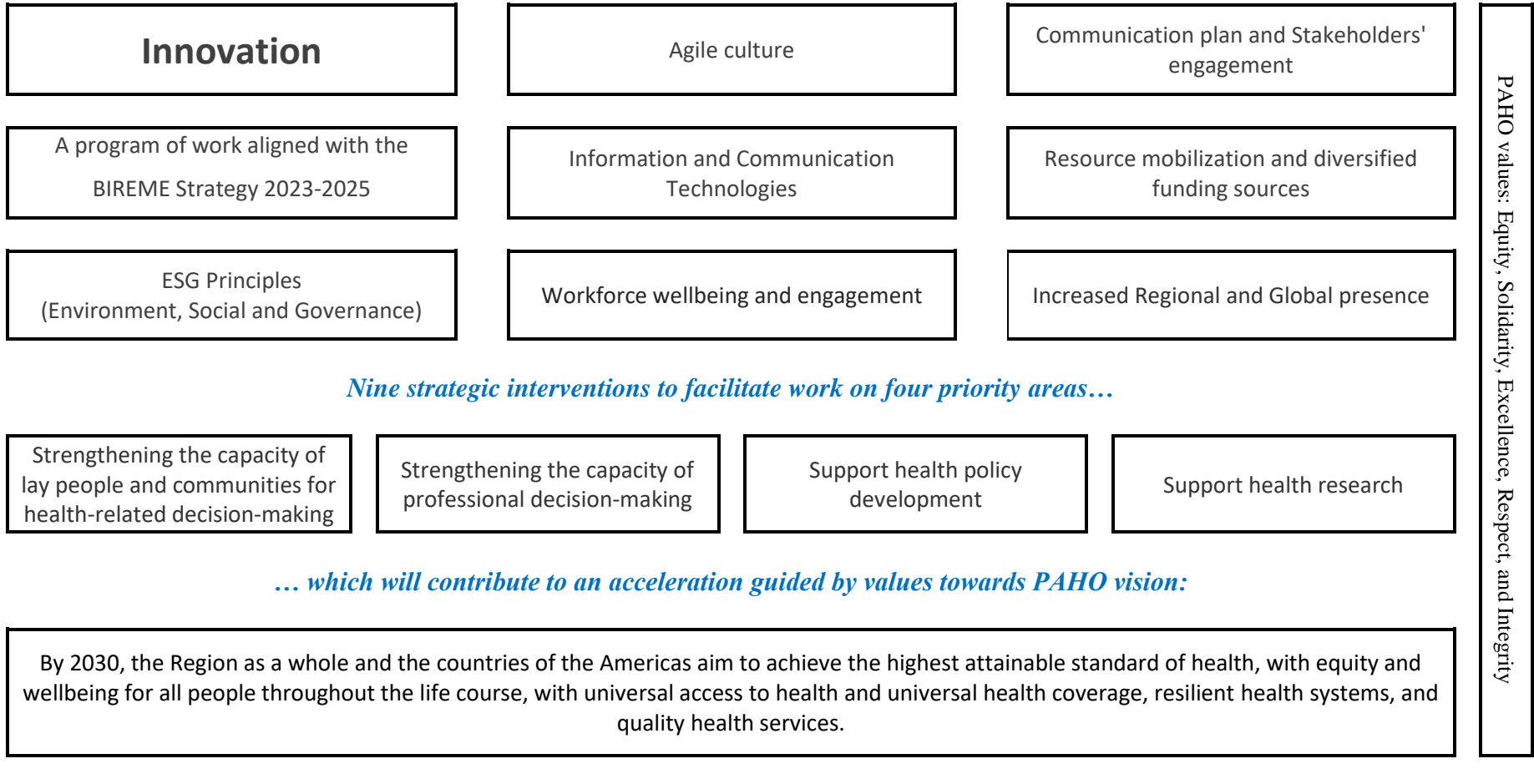
Table 1 presents an integrative matrix for the BIREME Strategy 2023-2025. In this matrix, the strategy aims are lined up with outcomes, actions, outputs, and key performance indicators. Through the matrix, the strategy is materialized into actions and impact.

A portfolio review was conducted and discussed at the BIREME's innovation lab. The following actions were initiated:

- As the first step toward Scrum implementation, the development of software solutions by the DEV team is now prioritized and protected. New products should follow a prioritization process based on the BIREME Strategy priorities. This is the first step to reduce change of context during development and increase productivity. As we consolidate this step, additional interventions to implement Scrum will be implemented.
- LILACS: A project will be developed to integrate the Latin American and Caribbean scientific output that is currently part of Medline and not part of LILACS. The intention is to create "LILACS Plus" as an integrative repository of all high-quality scientific output from Latin American and Caribbean Countries. Other measures to improve quality and streamline processes will be covered.
- Virtual Health Library: A new regional portal and a new approach to the VHL network and instances are currently under development. Traditional, Complementary, and Integrative Medicine VHL and Nursing VHL are priorities.
- The Formative Second Opinion will become a BIREME flagship product. The formative second opinion will be prepared for internationalization and adapted into various formats and platforms through AI solutions (currently under development).
- A new database structure for BIREME is being developed.
- A collaborative project with the University of Sao Paulo (a BMGF Grand Challenge on Catalyzing Equitable Artificial Intelligence Use in LMICs) is ongoing to assess the use of Large Language Models (LLMs) for health-related messaging.
- The use of LLMs to automate processes is being explored (e.g., indexation, coding, etc.)

All in all, Box 7 summarizes priority projects and activities for 2024-2025.

Theory of Change

Innovation	Agile culture	Communication plan and Stakeholders' engagement
A program of work aligned with the BIREME Strategy 2023-2025	Information and Communication Technologies	Resource mobilization and diversified funding sources
ESG Principles (Environment, Social and Governance)	Workforce wellbeing and engagement	Increased Regional and Global presence

Nine strategic interventions to facilitate work on four priority areas…

Strengthening the capacity of lay people and communities for health-related decision-making	Strengthening the capacity of professional decision-making	Support health policy development	Support health research

… which will contribute to an acceleration guided by values towards PAHO vision:

By 2030, the Region as a whole and the countries of the Americas aim to achieve the highest attainable standard of health, with equity and wellbeing for all people throughout the life course, with universal access to health and universal health coverage, resilient health systems, and quality health services.

PAHO values: Equity, Solidarity, Excellence, Respect, and Integrity

Figure 3: A Theory of Change for BIREME. Implementing nine strategic interventions will facilitate work on four priority areas, contributing to an acceleration guided by values toward the PAHO vision.

Box 6: BIREME´s Innovation plan for 2023-2025

Innovation is central to BIREME's transition to the 4.0 Information Industry. To enable the development of innovative solutions, a series of actions were implemented in 2023 or will be implemented in 2023-2025:

1. New products should aim to advance towards the attributes of the 4.0 Information Industry (Box 2)
2. Adoption of an agile approach, including the Scrum framework and DevOps.
3. A new organigram (annex 1) with a functional unit dedicated to innovation ("The Innovation Lab").
4. The Innovation Lab operates with staff from all BIREME teams and is dedicated to analysis, conception, co-ideation, and product specification to achieve the attributes of 4.0 information products.
5. Innovative products and services will be developed with internal and external resources (i.e., Internal and External Innovation).
6. External partners may complement internal innovation efforts in all information products and services signal functions (figure below).
7. External Innovation Partners will be engaged through agreements for the performance of work (contracts) and technical and scientific cooperation agreements, including knowledge transfer (e.g., learnings and technology) to BIREME/PAHO.
8. To optimize knowledge transfer to BIREME/PAHO, a new software governance policy with clear definitions of "done" and software documentation will be issued ("no black box policy").
9. A research program and a start-up incubation program will be developed to address innovation on other signal functions (e.g., automated indexation, and use of natural language processing for information search and retrieval).

Harvesting from Information Sources → Archiving → Indexation → Curation → Search and Retrieval → Information Outputs

Information products and services signal functions (BIREME)

Box 7: Top 10 priority projects and activities for 2024-2025*

1. **Development of innovative information products oriented for action in health featuring advanced digital transformation attributes particularly artificial intelligence**
2. **Strengthening information surveillance and bibliographic control (LILACS Plus)**
3. **Strengthening access to scientific and technical information through a new Regional Portal and Cooperation Model for the Virtual Health Library**
4. **Strengthening information indexing and classification (artificial intelligence based automation)**
5. **Promoting use of health information through evidence mapping and further developing the formative second opinion (a telehealth solution) for health workers and the general public**
6. **Conducting a Regional Event (e.g. CRICS/VHL network meeting)**
7. **Thematic emphasis on (1) Primary Health Care, (2) Nursing, (3) Indigenous, Traditional, Complementary and Integrative Medicine**
8. **Transition to Agile (Scrum/DevOps)**
9. **Implementation and M&E of the BIREME 2023-25 Strategy**
10. **Implementation of BIREME´s Headquarters Agreement**

Monitoring and Evaluation

Monitoring and evaluating the implementation of BIREME Strategy 2023-2025 are based on a continuous learning process guided by the agile concepts of adaptability to change, innovation and learning, feedback loops to improve, valuing individuals and interactions, and transparency.

Beyond the outcome indicators presented in the integrative matrix (Table 1), this Strategy will guide the development of a biannual plan of work (2024-2025), which will include specific projects and plans to meet the intended outcomes. All projects will be evaluated by key performance indicators (KPI), leading to achieving the main strategic outcomes. KPIs will be developed based on a participatory approach, involving internal and external stakeholders according to their role in the project and the principles of impartiality, independence, utility, quality, and transparency[5]. Figure 4 illustrates the KPI indicators chain.

Evaluation Methods

The definition of success of this strategy is substantial progress towards the outcomes presented in Table 1. Mixed methods will measure progress in implementing the strategy, highlighting the use of KPI, the achievement of milestones, and the incorporation of lessons learned and realignment of the strategy if/when necessary. Assessment points and the governance of monitoring and evaluation are presented in Table 2.

Roadmap and timeline

A roadmap for strategy development and implementation with a timeline is presented in Table 3.

Expected Results

The implementation of the BIREME Strategy 2023-2025 is expected to contribute to the materialization of PAHO's vision, PAHO´s Director Five Pillar Vision, particularly PAHO Forward, and consolidate the Center as:

"BIREME, the Pan American Center of Information for Action in Health."

Next Steps

1. Development of pragmatic implementation plans for the present strategy;
2. Development of a Program of Work conducive to the implementation of the current strategy;
3. Implementation of activities and projects that can embody the present strategy;
4. Monitoring, Evaluation, and Continuous Development.

Table 1: An Integrative Matrix for the BIREME Strategy 2023-25

Strategy Aim	Outcomes	Actions	Outputs	Outcome Indicators/KPI*
To contribute to the realization of PAHO's vision and the Five Pillar Vision (PAHO Forward)	The capacity of **lay people** and communities for health-related decision-making is strengthened	Development of knowledge derivatives and tools for lay people and communities	- New portfolio with knowledge tools and derivatives for lay people and communities *(in priority topics, countries, and populations)*	Number of knowledge tools and derivatives developed for lay people and communities. Comparative indicators of access, download, and use of knowledge tools and derivatives (TBD)
	The decision-making capacity of **health workers** is strengthened	Enabling access to evidence-based recommendations and guidelines Development of knowledge derivatives and tools for health providers	- Knowledge tools and derivatives to support professional decision-making.	Number of knowledge tools and derivatives developed for professional decision-making. Comparative indicators of access, download, and use of knowledge tools and derivatives (TBD)
	The development of **health policies** is supported	Enabling access to evidence-based recommendations and guidelines Support for evidence retrieval and synthesis	- Products and services according to the needs of policymakers	Number of products and services developed for policymakers Comparative indicators of access, download, and use of products and services (TBD)
	Health research is supported	Access to the scientific literature Identification of critical knowledge gaps	- In the context of SDG3 and SHAA, a list of critical knowledge gaps	Completion of the list of critical knowledge gaps.

*To be further developed

Table 1 (Continuation): An integrative Matrix for the BIREME Strategy 2023-25.

| Strategy Aim	Outcomes	Actions	Outputs	Outcome Indicators/KPI*
To facilitate BIREME's transition to 4.0 information products and services.	**Innovation** is promoted	To establish an innovation lab To establish a research program and a start-up incubation program To innovate, aiming at 4.0 Information Industry attributes	- Research findings and innovative solutions responding to BIREME priorities	Number of new information products, services, and innovative solutions displaying 4.0 Industry Attributes
	A **Program of Work** is aligned with the BIREME Strategy 2023-2025	Portfolio prioritization according to areas of focus, programmatic priorities, priority topics, and needs of key countries. Development of new products and services according to the Strategy and aiming at 4.0 Information Industry attributes	- New portfolio aligned with BIREME priorities	Program of work implemented, with products and services aligned to the new strategy. Achieved milestones according to the evaluation plan.
	Agile culture is nurtured	Team training and certification on agile methods Redesign the organizational structure to enable agility and collaboration. To implement SCRUM as the main framework and DevOps as a tool for collaborative work	- Staff qualified in agile methods - Work flowing in rapid cycles of development, more efficiently and with more cooperation and purpose (focused, protected, and prioritized development work) - Functional organigramme	Qualitative assessment of the implementation of Agile principles
	Information and Communication Technologies is strengthened	To assess needs and develop plans for keeping ICT up to date. To develop and implement software governance guidelines aligned with international standards	- Plans for keeping the ICT up to date are developed. - Software governance strategy is developed	An ICT updated plan A software governance plan updated

*To be further developed

Table 1 (Continuation): An integrative Matrix for the BIREME Strategy 2023-25.

Strategy Aim	Outcomes	Actions	Outputs	Outcome Indicators/KPI*
To position BIREME as the "PAHO Center of Evidence for Action in Health"	**Regional and Global** presence is expanded	-To increase technical cooperation with key countries and PAHO/WHO units based on their needs - To expand BIREME's presence in Country Office Cooperation Strategies	- Key-Country Cooperation Plan	- Number of Countries with technical cooperation with BIREME - Number of Countries using products and services developed by BIREME
	Strategic Communication and **key stakeholders** are engaged	- To develop and implement a stakeholders' management plan	- Stakeholder's Management Plan - Strategic Communication plan	Qualitative assessment of key stakeholders' engagement
	Resource mobilization is increased, and funding sources are diversified	- Actively explore new potential collaborations and fundraising between Countries on the local, regional, and global levels - New opportunities for donations from private philanthropic organizations will be pursued. - To perform the Headquarters Agreement with the Brazilian Government	- Updated fundraising Plan - Headquarters Agreement done	An increased budget and diversified funding sources.
	Workforce wellbeing is promoted, and workers are engaged	- To develop an internal plan that promotes workforce wellbeing and institutional engagement	- Engagement Plan - Human Resources Management Plan	Improvement in PAHO's Engagement Survey.
	ESG Principles (ecologically correct, economically viable, socially fair, and culturally accepted) are incorporated.	-To develop an ESG plan	- ESG plan developed	An ESG plan was published.

*To be further developed
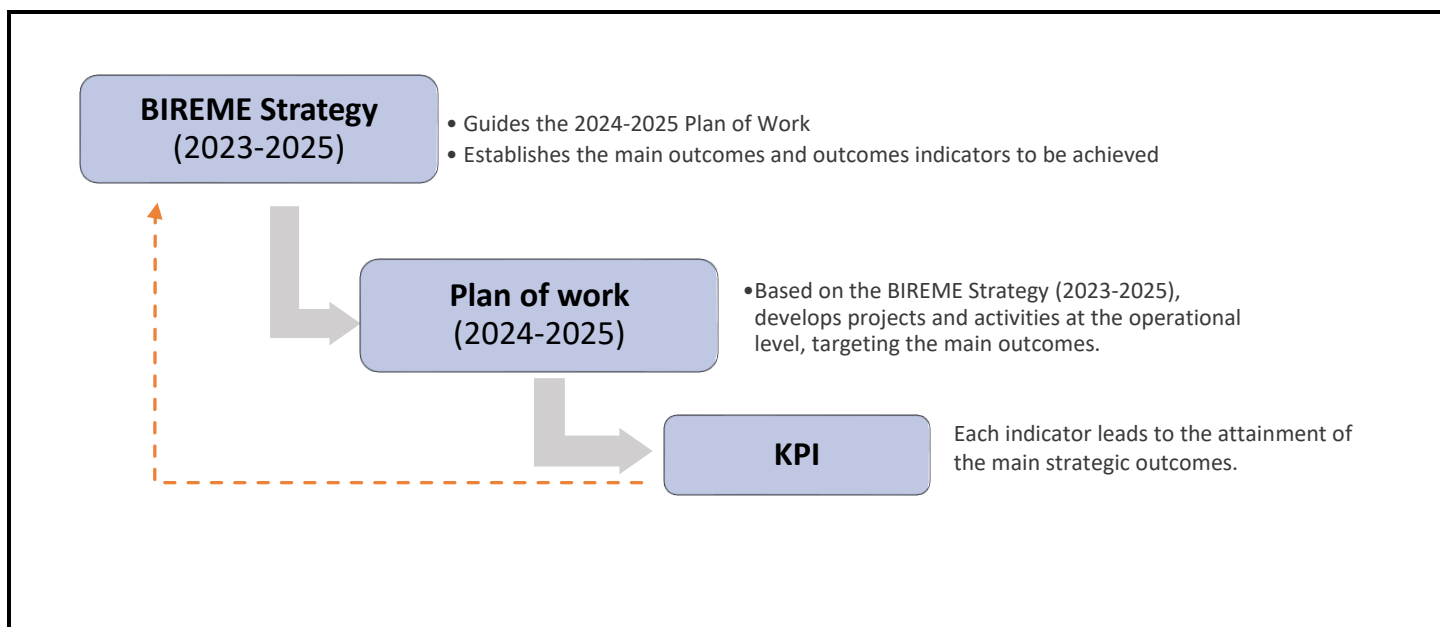
Figure 5: Key performance indicators' chain

Table 2: Assessment points and governance

What	When	Who	How
Monitoring of the project's KPI	During the project's lifecycle, follow-up of each project's plan	Project team	Analysis of the project's KPI according to the project's plan.
Monitoring of portfolio's implementation status	Monthly review	Project Manager	Analysis of the portfolio's implementation status
Analysis of Strategic Plan and Work Plan's indicators and implementation status.	Once a year (December-February)	BIREME Director's office with support from BIREME's team	Analysis of KPI + Milestones + Lessons learned
Advisory and Scientific Committees	Once a year (March)	Members of the Advisory and Scientific Committee + BIREME team	Report on the implementation status of the Strategy and the Plan of Work

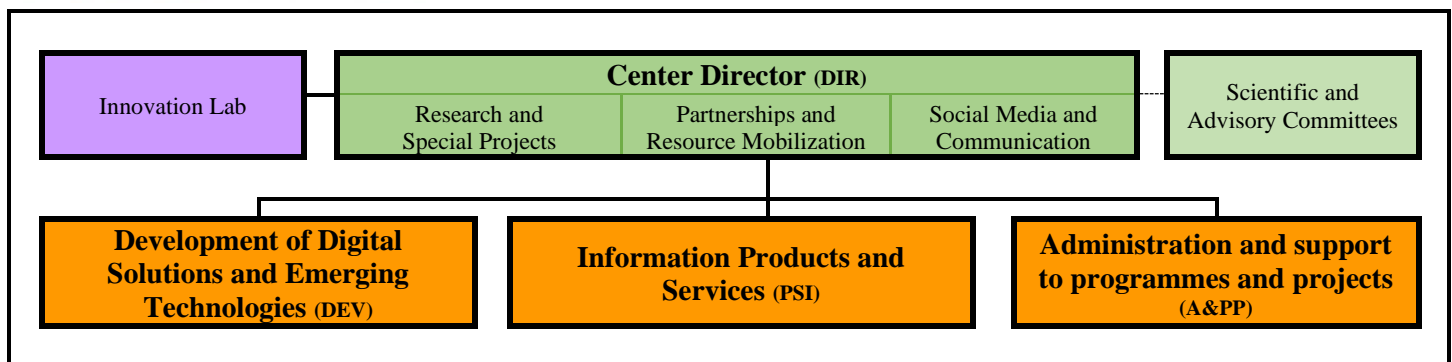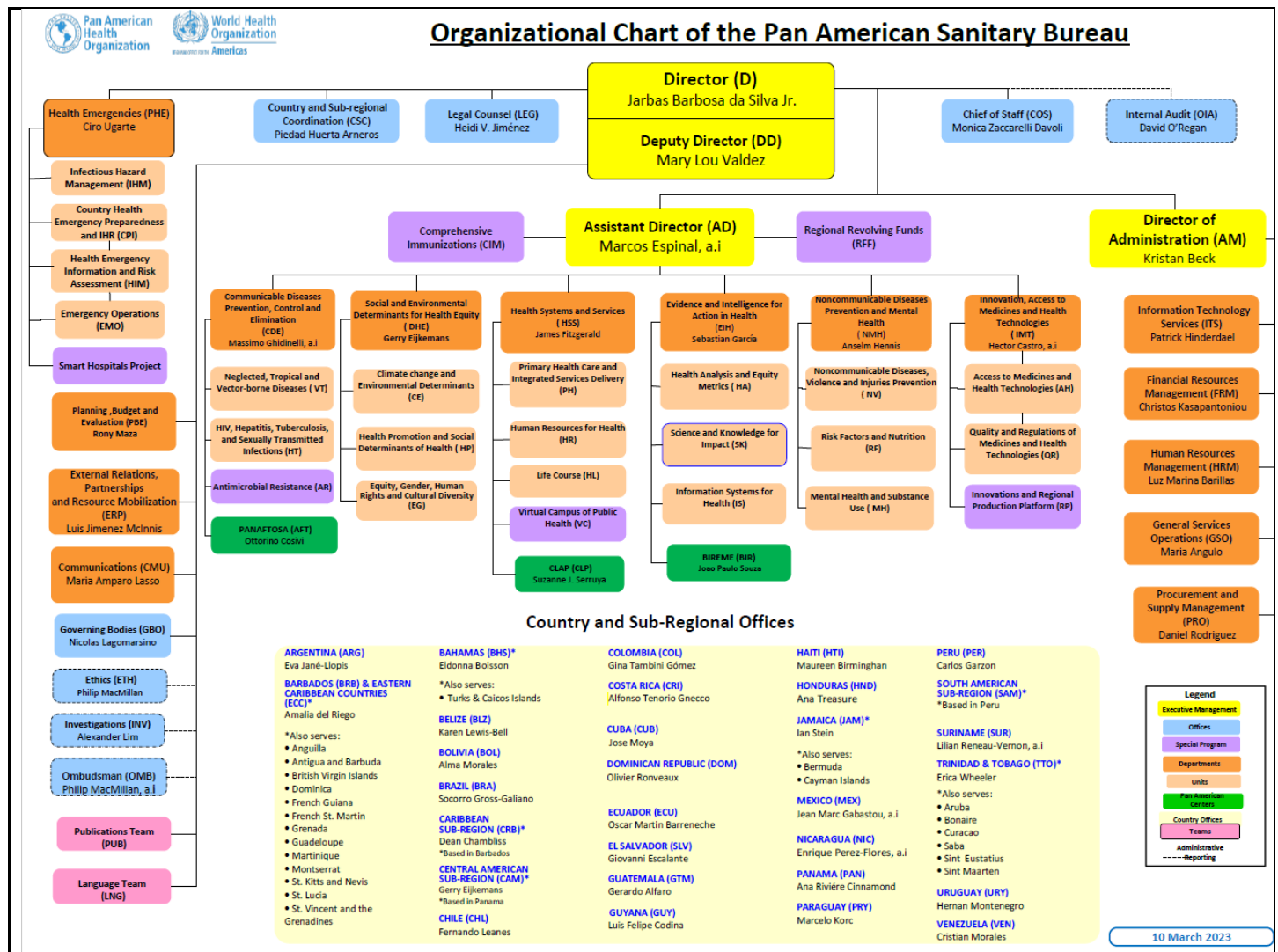**Table 3:** Roadmap and the timeline for Strategy Implementation

Phase	Milestone/Activity	2022	2023				2024				2025			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Formative phase	Situation Analysis	X	X											
	Initial diagnosis and preliminary planning shared with PAHO leadership (including PMA2)	X												
Transition phase	Advisory Committee recommends the development of a Strategy for BIREME		X											
	Strategic Planning		X											
	Draft Strategy (v1, living document) shared for feedback of key stakeholders		X											
	BIREME's new organigram was implemented and transitioned to agile/Scrum initiated		X											
	Draft Strategy (v2) reviewed by Scientific Committee			X										
	The strategy presented to the Advisory Committee				X									
	Development of Strategy Implementation plans (e.g., Human resources, fundraising, stakeholder engagement, innovation, and research, etc.)			X	X	X								
	Portfolio Review and prioritization		X	X	X	X								
	Development of the new Program of Work (PTB24-25)			X	X	X								
Full Implementation	Conceptualization and implementation of new projects aligned with the Strategy			X	X	X	X	X	X	X	X	X	X	X
	Strategy implementation			X	X	X	X	X	X	X	X	X	X	X
	Strategy review, progress assessment							X				X		X	
	Development of the Strategy 2026-2030														X

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Annex – The new Organizational Chart of PAHO and BIREME

Organizational Chart of the Pan American Sanitary Bureau

PAHO · Pan American Health Organization · World Health Organization · BIREME Latin American and Caribbean Center on Health Sciences Information · Organizational Chart

Annex II – Supplementary Box 1

Comments and recommendations issued by BIREME's Scientific Committee on the Proposed Strategy (2023)

a) **The Scientific Committee acknowledges the BIREME 2023-2025** Strategy as a valid approach to stimulate innovation, favor digital transformation and facilitate the development and implementation of a workplan conducive to BIREME's objectives.

b) **The Committee supports the adoption of agile methodologies**, emphasizing the centrality of user needs (including the lay public) for generating new solutions. These components were recognized as strengths in the presented strategic planning.

c) **The SC members recommend:**

   I. Address disinformation programmatically, with an emphasis on:
   - Publication of health information with full provenance of evidence and data;
   - Avoid dissemination of irrelevant information;
   - Surveillance of disinformation disseminated by large language models (LLM) emphasizing the importance of reliability and provenance of data.

   II. Promote collaborative work with other institutions dedicated to the development of specific information technologies for overcoming the specific challenges of the area through:
   - Exchange with PhD/postdoctoral researchers, focusing on the development of machine learning projects and the use of data based on the four FAIR principles (i.e. making all types of data that are fragmented and disconnected more easily Findable, Accessible, Interoperable, and Reusable).

   III. **Advancing the development of technology, products, and services with Industry 4.0 attributes, with emphasis on:**
   - Products and services that are exclusively developed and offered by BIREME and that have the potential to highlight it as a unique reference for the Region, such as multilingualism;
   - Bibliometric mapping with monitoring of classic indicators of scientific production and with automated translation into Portuguese and Spanish as a way to face language barriers and facilitate access for users not proficient in English or Spanish;
   - Publication of open data, nano-data, and machine-readable data;
   - Improving the search capacity and quality of searches of BIREME's information systems;
   - Evolution of evidence maps to intelligent/living maps, allowing the automatic inclusion of new studies and adding efforts to translate knowledge for decision-makers.