

## TC Document

### I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Support to Pan-American Highway for Digital Health (PH4H)
▪ TC Number:	RG-T4759
▪ Team Leader/Members:	Nelson, Jennifer A (SCL/HNP) Team Leader; Tejerina, Luis R. (SCL/SPL) Alternate Team Leader; Martinez Martinez, Naiara Mireya (SCL/GDI); Casco, Mario A. (TTD/TTR); Caceres Montano Marcela Alejandra (SCL/HNP); Mosquera Arce Paola Andrea (SCL/GDI); Goncalves Dos Santos Carolina (LEG/SGO); Hernandez , Adrian (SCL/HNP); Forero Sanchez Juan David (SCL/HNP)
▪ Taxonomy:	Research and Dissemination
▪ Operation Supported by the TC:	N/A
▪ Date of TC Abstract authorization:	March 26th, 2025 - Regional TC proposal submitted through the IDB Ideation platform and was selected through the 2024 Regional Programming and Prioritization Exercise (RPPD)
▪ Beneficiary:	Regional (Argentina, Barbados, Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Peru, Panama, Paraguay, Suriname, Trinidad and Tobago, Uruguay)
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	OC SDP Window 2 - Social Development(W2E)
▪ IDB Funding Requested:	US\$300,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	July 28, 2025
▪ Types of consultants:	Individuals; Firms
▪ Prepared by Unit:	SCL/HNP-Health, Nutrition and Population Division
▪ Unit of Disbursement Responsibility:	SCL/HNP-Health, Nutrition and Population Division
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Update to the Institutional Strategy 2024-2030:	Social protection and human capital development; Sustainable, resilient, and inclusive infrastructure; Productive development and innovation through the private sector; Regional integration; Targets poor populations; Supports sustainable economic growth; Supports digital transformation; Gender equality; Diversity; Indigenous People; Afro-descendants; Persons with Disabilities; LGBTQ+; Institutional capacity, rule of law, and citizen security; Public sector policy and management; Digital government; Transparency and integrity; Citizen security and justice; Private sector development

### II. Objectives and Justification of the TC

- 2.1 Objectives of the TC.** The objective of this TC is to support the development and implementation of tools and support services for the design, implementation, and evaluation of country operations with digital components and provide implementation support to the IDB's digital health portfolio. The specific objectives include:
- (i) development and support for the implementation of digital health tools conducive to

the strengthening of national digital health systems and regional interoperability and (ii) promote the sharing of country experiences and lessons learned in digital health.

- 2.2 **Healthcare systems in Latin America and the Caribbean (LAC) face critical challenges, characterized by rising costs, inefficiencies, and poor health indicators**, which collectively underscore the urgent need for digital health interventions to improve outcomes and resource utilization. Escalating healthcare costs are straining regional budgets, and without effective information systems, these inefficiencies are projected to drive expenses even higher, exacerbating disparities in access to care (Pinto et al., 2018). Inefficient healthcare systems contribute to significant productivity losses, estimated at \$1.4 billion to \$1.6 billion annually, as reported by the World Health Organization (WHO), due to low-quality care that fails to address preventable conditions (WHO, 2017). Moreover, suboptimal healthcare delivery in low- and middle-income countries, including those in LAC, results in 5.7 million to 8.4 million deaths annually, accounting for 15% of all deaths, largely due to inadequate treatment and lack of timely interventions (National Academies of Sciences, Engineering, and Medicine, 2018).
- 2.3 Poor health indicators in LAC are further evidenced by high rates of non-communicable diseases (NCDs), such as diabetes and cardiovascular conditions, which account for 81% of deaths in the region, compounded by limited access to preventive care and diagnostic tools (PAHO, 2019). For instance, only 43% of adults in LAC receive adequate screening for hypertension, contributing to uncontrolled chronic conditions and premature mortality (PAHO, 2019). However, studies suggest that enhancing healthcare efficiency could increase average life expectancy in the region by four years, offering a pathway to mitigate these challenges (Pinto et al., 2018), digital health can contribute to this improvement.
- 2.4 **Digital transformation of the health sector can improve quality, equity, and efficiency when implemented intentionally and holistically** (Bagolle et al., 2022). Interconnected and interoperable health systems are pivotal in enabling seamless data sharing and coordination across healthcare ecosystems, laying the foundation for significant system-wide improvements. Notably, digital health enhances system efficiency through data interoperability at national and international levels, which is vital for pandemic preparedness and seamless healthcare delivery. The Inter-American Development Bank's case study on Seoul National University Bundang Hospital (SNUBH) highlights its BESTCare EHR system, which enabled interoperable clinical data sharing and integration with COVID-19 contact-tracing, supporting telemonitoring and efficient crisis response (IDB, 2024).
- 2.5 Similarly, Israel's National Health Information Exchange, covering 98% of citizens' digital records, facilitates telehealth and public health coordination, exemplifying scalable interoperability (Israel Ministry of Health, 2020). These interoperable systems contribute to multiple benefits, including: (i) reducing healthcare costs by minimizing redundant diagnostic testing, unnecessary hospitalizations, and preventable readmissions; (ii) optimizing resource management by providing insights into how, when, and where resources are utilized; (iii) enabling effective monitoring of notifiable diseases, seasonal diseases, and communities' disease burden; (iv) supporting public health research; and (v) strengthening disaster response (Bagolle et al., 2022).
- 2.6 In this manner, a systematic literature review of 25 studies on Health Information Exchange (HIE) systems demonstrated that interoperable systems improve healthcare

quality and cost-effectiveness, with 15 studies (60%) reporting significant economic savings, such as C\$272.7 million and C\$6.7 million in Canada's outpatient settings, due to reduced duplication of laboratory tests and diagnostic imaging, respectively (Bagolle et al., 2022; Gartner, 2018).

- 2.7 **The digital transformation of healthcare systems in Latin America and the Caribbean (LAC) is hindered by systemic barriers that limit the development of integrated, efficient, and equitable health systems.** A primary challenge is the limited adoption of interoperability standards for Health Information Exchange (HIE), with 76% of LAC countries having national HIE regulations but only 42% specifying standards like HL7, FHIR or SNOMED CT<sup>1</sup>, resulting in fragmented data systems that disrupt coordinated care and increase risks of treatment delays and medical errors (Bagolle et al., 2020). Similarly, only 31% of countries regulate electronic medical records (EMRs), and just 19% define minimum data sets essential for interoperability, further exacerbating data fragmentation (Bagolle, Park, & Marti, 2021). Implementation challenges persist due to inadequate infrastructure and a shortage of personnel trained in health information technologies, with only one LAC country achieving national-scale HIE integrating public and private sectors (Bagolle et al., 2020; PAHO, 2016). Countries like Brazil (44% of standard implementations), Argentina (33%), and Mexico (11%) show progress, but sustainability is constrained by heterogeneous infrastructure and limited technical expertise (PAHO, 2016).
- 2.8 To address these barriers, the proposed technical cooperation (TC) initiative directly targets these challenges through two components. First, to tackle fragmented data systems and limited interoperability, the TC will fund consultancies to conduct needs assessments, develop guidelines for implementing standards like HL7 FHIR, and create change management plans to support the adoption of digital health tools, including those aligned with initiatives like the Pan-American Highway for Digital Health (PH4H) (IDB, 2025). Second, to address workforce shortages and infrastructure gaps, the TC will support regional collaboration by organizing at least one regional meeting, including certification workshops to train public sector professionals in interoperability and cybersecurity standards, and a regional Connectathon to foster practical knowledge sharing among at least 10 countries (IDB, 2025). These efforts will enhance access to interoperable digital tools, build technical capacity, and promote regional coordination, ultimately reducing redundancies, improving patient safety, and strengthening health system resilience across LAC (Kruse et al., 2018)
- 2.9 The Pan-American Highway for Digital Health (PH4H) is an initiative aimed at enabling connected health for all in Latin America and the Caribbean (LAC). Led by the Inter-American Development Bank (IDB), the Pan American Health Organization (PAHO)<sup>2</sup>, and countries of the region, PH4H strives to facilitate secure, efficient, and interoperable health data exchange within and among countries, allowing individuals to access and share their health information seamlessly. By leveraging national

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<sup>1</sup> HL7 (Health Level Seven) is a standard for health data exchange; FHIR (Fast Healthcare Interoperability Resources) is an HL7 standard using APIs for agile interoperability; and SNOMED CT (Systematized Nomenclature of Medicine Clinical Terms) is a standardized clinical terminology for encoding medical information.

<sup>2</sup> The Pan American Health Organization (PAHO) is our partner in the Public Health for the Hemisphere (PH4H) initiative, working together to advance health equity and strengthen healthcare systems across the Americas.

investments in health information exchange and coordinating with regional bodies and networks, such as RACSEL, PH4H fosters synergies to enhance healthcare delivery. This Technical Cooperation (TC RG-T4546) directly supports PH4H by financing the development and implementation of interoperable digital health tools (e.g., electronic health record modules, telemedicine platforms), organizing regional meetings and a Connectathon to promote collaboration and best practices, and creating change management plans to ensure equitable adoption across LAC, thereby advancing PH4H's objectives of improving healthcare access, patient safety, and regional resilience. PH4H aims to provide patients with better healthcare services, regardless of their location, and enhance care for mobile populations, such as workers, students, and migrants, by enabling them to share their health history, thus improving employability and access to education. Additionally, the digital highway strengthens public health surveillance, optimizes access to limited human resources, and promotes research and innovation, leading to more efficient public health policies and boosting regional economies. As a result, countries will be better prepared for future pandemics and other health threats. Unlike a physical highway, the digital highway transcends boundaries, enabling universal access and leaving no one behind.<sup>3</sup>

- 2.10 **Strategic Alignment.** This TC is consistent with the IDB Group Institutional Strategy: Transforming for Scale and Impact 2024-2030 (GN-3159-12) and aligns with the objectives of: (i) reduce poverty and inequality by improving social protection and human capital development in the health sector; and (ii) bolster sustainable regional growth by fostering digital infrastructure and innovative technology-based services and improving regional integration. The TC also aligns with the operational focus areas of: (i) gender equality and inclusion of diverse population groups; (ii) institutional capacity, rule of law, and citizen security; (iii) social protection and human capital development; and (iv) regional integration.
- 2.11 The TC aligns with the Health Sector Framework Document (GN-2735-12) by aiming to improve access, quality, and efficiency of health services through digital transformation. It also responds to the Gender and Diversity Sector Framework Document (GN-2800-13) by addressing gaps arising from structural factors, promoting accessible and inclusive digital infrastructure and services for health. Furthermore, this TC is in line with the cross-cutting area of digital transformation of the One Caribbean (Partnering for Caribbean Development Framework) and the Establishment of the Ordinary Capital Strategic Development Program Transitory Emerging Need for Sustainable Development in the Caribbean (GN-3201-2). Specifically, it synergistically aligns with RG-T4716 One Caribbean Digital Health Solutions, which focuses on (i) improving regional governance structures, enabling policies, and standards for health information sharing, and (ii) strengthening country-level interoperability and readiness for cross-border data sharing, objectives that complement the work under this TC. Additionally, this TC is aligned with the Ordinary Capital Strategic Development Program (OC SDP) (GN-2819-14), specifically through the OC SDP Window 2 - Social Development (W2E) fund, under Priority Areas #3 (Effective, Efficient, and Transparent Institutions) and #5 (Inclusive Social Development). The TC also supports regional initiatives such as Amazonia and *América en el Centro*,

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<sup>3</sup> Officially launched in 2024, the PH4H Initiative is established with support from its first donor, the Government of Japan. However, this TC is financed solely by the Ordinary Capital Strategic Development Program (OC SDP) Window 2 - Social Development (W2E) fund, with no resources from the Government of Japan nor other donors.

fostering digital health transformation across all 26 IDB member countries named as beneficiaries of this research. Moreover, this TC builds on and complements RG-T4546 Paving the Pan American Highway for Digital Health, by advancing shared goals of enhancing interoperability, governance, and equitable access to digital health solutions across the region.

- 2.12 This TC is also aligned with the IDB Country Strategies for its 26 borrowing member countries, including: Argentina (GN-3051), Barbados (GN-2953-1), Bahamas (GN-3198-1), Belize (GN-3086), Bolivia (GN-3088), Brazil (GN-3243-3), Chile (GN-3140-3), Colombia (GN-3238-3), Costa Rica (GN-3250), Dominican Republic (GN-3084), Ecuador (GN-3103-1), El Salvador (GN-3046-1), Guatemala (GN-3260-1), Guyana (GN-3187), Honduras (GN-2944), Jamaica (GN-3138), Mexico (GN-2982), Peru (GN-3110-1), Panama (GN-3055), Paraguay (GN-2958), Suriname (GN-3065), Trinidad and Tobago (GN-3071), and Uruguay (GN-3056). The TC supports key priorities outlined in the IDB Country Strategies for its 26 borrowing member countries, including health system modernization, digital transformation, social inclusion, and institutional capacity building. The development of interoperable digital health tools advances digital transformation by enabling secure and efficient health data exchange, aligning with regional efforts to modernize public health systems. The focus on equitable access to health services for vulnerable populations, such as rural and indigenous communities, promotes social inclusion by ensuring that digital health solutions are accessible to all, reducing disparities in healthcare delivery. The regional meeting and Connectathon foster collaboration and knowledge sharing among countries, supporting regional integration by facilitating the exchange of best practices and interoperability standards. By addressing these priorities, the TC enhances institutional capacity and governance, ensuring sustainable and inclusive health system improvements across Latin America and the Caribbean, in line with the Pan-American Highway for Digital Health (PH4H) Initiative's vision of connected health for all.

### **III. Description of activities/components and budget**

- 3.1 **Component 1: Development and Support of Digital Health Tools (US\$190,000).** This component aims to provide support in the development and implementation of digital tools that facilitate healthcare in the region. This component will fund consultancies and services to assist countries in the design and deployment of the Panamerican Highway for Digital Health (PH4H)<sup>4</sup>. Main activities include: (i) Conducting needs assessments to identify and prioritize required digital tools for participating countries (stakeholders identification, digital maturity diagnosis, gaps and priorities identification, formulation of recommendations and an action plan), such as electronic health record (EHR) modules, telemedicine platforms, and mobile health applications, selected based on criteria including alignment with regional needs, interoperability with standards like HL7 FHIR, equity for vulnerable populations, and scalability; (ii) creating and updating guidelines for the implementation of interoperability standards for digital health; and (iii) providing support in the creation of change management plans for successful adoption of the PH4H (stakeholder

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<sup>4</sup> The Bank's IT Department will review the terms of reference for consultancies related to digital platform development and provide technical oversight during execution, in line with document OP-619-4, 1.3. Additionally, the Legal Department will be engaged to develop terms of use, privacy policies, and data protection agreements for any digital platforms, ensuring compliance with regional and international regulations.

engagement, change readiness diagnosis, gap analysis and prioritization, formulation of culturally aligned strategies and action plans)<sup>5</sup>.

- 3.2 Component 2: Assistance and Coordination for Regional Meetings (US\$110,000).** The objective of this component is to facilitate collaboration and dialogue among countries in the region to advance the Pan-American Highway for Digital Health (PH4H). This component will fund consultancies and services to support the organization of at least one regional meeting to share best practices in implementing PH4H. Key activities include: (i) Certification and Training Workshops: Conducting workshops on health interoperability standards (e.g., HL7 FHIR), cybersecurity (e.g., data encryption, compliance with data protection regulations), and digital health governance, with practical exercises during a regional Connectathon<sup>6</sup>. Approximately 150–225 participants mainly from the public sector will be trained (e.g., Ministries of Health, public health agencies). Participants will be selected based on their role in digital health implementation, sector representation, geographic diversity across at least 10 LAC countries, commitment to applying training outcomes, and prioritization of equity for underserved communities. Certifications will include HL7 FHIR Certification, Cybersecurity in Health Certificate, Digital Health Governance Certificate, and Connectathon Participation Certificate, issued in collaboration with partners like PAHO, RACSEL and HL7 Latin America; (ii) a regional Connectathon<sup>7</sup>: Organizing a Connectathon to test interoperability of digital health tools (e.g., EHR systems, telemedicine platforms), fostering collaboration and practical application of training outcomes.
- 3.3 Impact and expected results:** This TC will contribute to enhancing the effectiveness of digital health initiatives across the region, ultimately leading to improved health service quality and greater regional resilience. By enabling access to essential digital tools and fostering collaboration among countries, it will facilitate timely and accurate health information exchange, improve patient safety and care quality while lower healthcare costs by minimizing redundancies and inefficiencies. Key benefits for patients include reduced travel requirements and the ability to access and share their health data conveniently. The main results for this TC include: (i) development and deployment of at least three new digital health tools tailored to regional needs, such as EHR modules, telemedicine platforms, or mobile health applications, selected based on needs assessments and prioritizing interoperability, equity, and

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<sup>5</sup> Change management, communication, and knowledge management activities encompass the actions to be developed in the social dimension of digital health transformation. For example: digital literacy workshops (change management); audiovisuals and website explaining the Pan-American digital health roadmap to the public (communication); a catalog of technical materials such as architectures and implementation guides for regional reference for health interoperability (knowledge management).

<sup>6</sup> The methodology for these certifications and workshops includes a hybrid format (in-person and virtual) to ensure accessibility, combining theoretical sessions (e.g., lectures on FHIR standards), hands-on practical exercises (e.g., configuring interoperable systems), and case studies (e.g., successful EHR implementations in LAC)

<sup>7</sup> Regional Connectathons are “connectivity marathons” that consist of in-person events that provide training and software testing and certification services to determine if software developed by the countries meet regional and global standards. The TC will finance technical advisory services, as well as travel and logistics for these events. In the events will have the chance to participate governments (e.g., Ministries of Health from Brazil, Chile, Honduras, Barbados), international agencies (PAHO, IDB, CARPHA), networks (RACSEL, HL7 Latin America), other initiatives (CARICOM, América en el Centro) and donors (Japan, and others such as Korea, Israel, Spain, EU).

sustainability; (ii) organization of at least one regional meeting to facilitate knowledge sharing and best practices, with participation from at least 10 countries.<sup>8</sup>.

- 3.4 **Budget.** The total amount for this TC is US\$300,000 (non-reimbursable) which will be financed by the OC SDP Window 2 - Social Development(W2E). There will be no local counterpart funding. The disbursement and execution period will be 36 months.

#### Indicative Budget (US\$)

Component/Activity	Description	IDB/W2E Total Funding
<b>Component 1:</b> Development and Support of Digital Health Tools	This component will finance the implementation of digital health tools to enhance healthcare in the region. It will fund (i) needs assessments to identify and prioritize required digital tools for participating countries; (ii) the creation and updating of guidelines for the implementation of interoperability standards for digital health.; and (iii) provide support in the creation of change management plans for successful adoption of the PH4H	190,000
<b>Component 2:</b> Assistance and Coordination for Regional Meetings	This component will support the organization of at least one regional meeting focused on sharing best practices in digital health and the implementation of a Conectathon.	110,000
<b>TOTAL</b>		<b>300,000</b>

- 3.5 **Supervision.** The technical responsibility for the implementation and overall supervision of the TC will be the IDB (SCL/HNP). The IDB, through the project team leader, will have technical responsibility for the implementation and overall supervision of the project. The team leader will be the Senior Sector Specialist in Digital Health Solutions of SCL/HNP at HQ, who will keep the SCL/HNP specialists of the participating countries constantly informed and work with them to align with local priorities and needs, and coordinate with existing initiatives in the countries regarding interoperability and telehealth.
- 3.6 **Monitoring and Evaluation.** The monitoring and supervision activities of this project will be the responsibility of the Project Team Leader, in accordance with the methodology for monitoring TCs under execution established in the document “The Technical Cooperation Monitoring and Reporting System” (OP-1385-4).

#### IV. Executing agency and execution structure

- 4.1 **Executing Agency.** The TC will be executed by the Bank given its taxonomy is Research and Dissemination. In accordance with OP-619-4, Annex II, Section C, 2.2, (iv), the IDB is justified in acting as the Executing Agency for this initiative due to the lack of identification of a regional entity with legal capacity to execute the TC, as well as strengthening Banks experience in such field. The IDB brings significant expertise in several key areas: (i) the project's components, (ii) the selection and oversight of necessary consulting services, (iii) facilitating productive dialogue with

<sup>8</sup> All travel costs of the beneficiary government employees financed by the TC require approval on a case-by-case basis of the donor.

relevant authorities, and (iv) coordinating efforts among various agencies. These capabilities align with the institutional capacity requirements outlined in OP-619-4. Furthermore, the IDB possesses the appropriate systems to ensure effective project execution and long-term sustainability, in line with the “Operational Guidelines for Technical Cooperation Products” (GN-2629-1) and OP-619-4. The Bank also has the requisite experience of adhering to applicable procurement policies and procedures.

- 4.2 **Procurement.** All procurement to be executed under this Technical Cooperation have been included in the Procurement Plan (Annex IV) and will be hired in compliance with the applicable Bank policies and regulations as follows: (a) Hiring of individual consultants, as established in the regulation on Complementary Workforce (AM-650) and (b) Contracting of services provided by consulting firms in accordance with the Corporate procurement Policy (GN-2303-33) and its Guidelines.
- 4.3 **Intellectual Property.** The knowledge products generated within this TC, including original research, tools to accelerate implementation (regional standards, example norms, implementation guides, reference architecture, software components, etc.) and to support inclusive design and implementation, will be the property of the Bank and may be made available to the public under a creative commons license. However, at the request of a beneficiary, in accordance with the provisions of AM-331, the intellectual property of said products may also be licensed to one or more beneficiaries through specific contractual commitments that shall be prepared with the advice of the Legal Department. If activities must be conducted in the territories of any of the beneficiary countries, the team will obtain the country's no objection prior to the beginning of such activities<sup>9</sup>. All products financed by this TC will include toolkits, guides, and manuals that will be usable and replicable for all countries in the region. If activities in one of the participating countries are required, the team will obtain the country's no objection before the start of the activities.

## V. Major issues

- 5.1 **Risks** identified for this TC include potential delays in the implementation of project activities, which could affect the feasibility and timely evaluation of outcomes. These delays may stem from coordination challenges or unforeseen technical issues. Additionally, there is a risk that the digital health tools and services developed may not achieve sufficient ownership at the country level, potentially limiting their adoption and sustainability. To mitigate these risks, close supervision of project operations will be maintained to ensure timely execution. Emphasis will be placed on involving team leaders and country counterparts as active collaborators in the design, testing, and deployment of tools, ensuring their input is integrated to foster ownership. At the local level, technical counterparts and partners will be engaged to support the implementation and promote the adoption of solutions funded by the TC.
- 5.2 **Sustainability.** The outputs generated through the activities of this Project will focus on strengthening countries' capacities in national and cross-border interoperability and formulate recommendations for replicating activities in other contexts and on a larger scale. Through component two, this TC will also contribute to strengthening human capital in the public sector for digital health transformation, helping to increase project

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<sup>9</sup> Before any intervention in a country, the team will coordinate with the corresponding country office and obtain the non-objection letter.



sustainability. Close coordination with the Bank's operational program in participating countries in digital health will also be sought to leverage the outputs and knowledge produced by this TC. Finally, it should be noted that the products and results of this TC are aligned with a broader strategy for the digital transformation of the health sector in the LAC region.

**VI. Exceptions to Bank policy**

- 6.1 There are no exceptions to Bank policies.

**VII. Environmental and Social Aspects**

- 7.1 This Technical Cooperation is not intended to finance pre-feasibility or feasibility studies of specific investment projects or environmental and social studies associated with them; therefore, this TC does not have applicable requirements of the Bank's Environmental and Social Policy Framework (ESPF).

**Required Annexes:**

[Results Matrix\\_93982.pdf](#)

[Terms of Reference\\_58262.pdf](#)

[Procurement Plan\\_65621.pdf](#)