

Technical Cooperation (TC) Document

I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Evidence on digital health interventions to tackle non-communicable diseases
▪ TC Number:	RG-T4600
▪ Team Leader/Members:	Bernal Lara, Pedro Gerardo (SCL/SPH) Team Leader; Bauhoff, Sebastian (SCL/SPH) Alternate Team Leader; Mendoza Benavente, Horacio (LEG/SGO); Rocha, Marcia Gomes (SCL/SPH); Astorga, Ignacio Jose (SCL/SPH); Forero Sanchez Juan David (SCL/SPH); Gongora Salazar, Pamela (SCL/SPH); Lagos, Francisco (SCL/GDI); Casco, Mario A. (ITE/IPS); Nelson, Jennifer A (SCL/SPH); Caceres Montano Marcela Alejandra (SCL/SPH); Lamagni, Mariano Javier (ITE/IPC); Silveira, Sheyla (SCL/SPH)
▪ Taxonomy:	Operational Support
▪ Operation Supported by the TC:	BL-L1048, BR-L1429, ES-L1160, ES-L1160, BL-L1048
▪ Date of TC Abstract authorization:	30 Aug 2024
▪ Beneficiary:	REGIONAL (Direct: Belize, El Salvador, Brazil among others to be determined; Indirect: other countries that use the knowledge products.)
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	OC SDP Window 2 - Social Development(W2E)
▪ IDB Funding Requested:	US\$375,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	December 13 th , 2024
▪ Types of consultants:	Firms, individual consultants
▪ Prepared by Unit:	SCL/SPH-Social Protection & Health
▪ Unit of Disbursement Responsibility:	SCL/SPH-Social Protection & Health
▪ TC included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ Alignment to the Institutional Strategy 2024-2030:	Diversity; Gender equality; Persons with Disabilities; Productivity and innovation; Social inclusion and equality

II. Description of the Associated Loans/Guarantee

2.1 Since 2017, the Bank has been developing and implementing a strategy to develop tools and processes to facilitate and improve the design of digital projects in the health sector, including during the response to the COVID-19 pandemic. These tools have already been implemented in 20 countries and the digital health team has supported the design and implementation of many foundational digital investments laying the groundwork for electronic medical health records, health information exchange, telemedicine and data analytics. This TC will support the growing digital health portfolio by supporting the design of digital tools for the population health management of individuals with non-communicable diseases (NCDs) and generating rigorous evidence of their effects in several operations described below.

2.2 **Smart and Comprehensive Health Program (5874/OC-ES) in El Salvador.** Its general development objective is to help improve the population's level of health, with emphasis on chronic NCDs, by means of the physical and digital implementation of a

networked comprehensive management and care model that strengthens the continuity of care and the availability, quality, and efficiency of services. The specific objectives are to: (i) improve access to and coverage of the service network by strengthening and integrating digital health services; (ii) improve the quality of primary care infrastructure, expand specialized coverage, and strengthen hospital resilience; (iii) improve the efficiency of support service delivery to hospitals and primary care facilities, as well as the timeliness of emergency response; and (iv) build capacity for health policy design and management of MINSAL units. ES-L1160 was approved in 2024.

2.3 **Improving Efficiency, Quality, and Access in Belize's Health System (5884/OC-BL,5885/KI-BL)**. Its general development objective is to improve the health of the population in Belize. The specific objectives are to: (i) improve the efficiency and quality of healthcare delivery; and (ii) improve access to key health services. This loan has a focus on NCDs and includes investments to improve the Belize Health Information System (BHIS) and the overall digital health ecosystem. BL-1048 was approved in 2024.

2.4 **City of São Paulo Health Care Networks Restructuring and Quality Certification Project (4641/OC-BR)**. Its general development objective is to contribute to improving the health conditions of the of São Paulo's municipality population, by enhancing service access and quality and improving system performance, through consolidation of the health care networks approach. The project included investments to support the implementation of electronic medical records in primary care, the integrated system for electronic registration in health care, and the identification and implementation of new health technologies such as telemedicine. BR-L1429 was approved in 2018.

III. Objectives and Justification of the TC

3.1 **Objective:** The objective of this TC is to generate rigorous regional evidence on the effectiveness of digital interventions for the detection, prevention and treatment of NCDs in LAC. The specific objectives include: (i) evaluate whether digital tools for risk estimation and population management could increase the uptake and optimize the use of screening services for NCDs; (ii) generate evidence on whether digital interventions for patients can help them reduce risk factors and early onset of NCDs; and (iii) assess the quality of telehealth visits for patients with NCDs. The TC will conduct three separate evaluations to achieve these specific objectives.

3.2 **Non-communicable diseases (NCDs) represent a key health challenge in the region.** More than three-quarters (77%) of the total disease burden in Latin America and the Caribbean (LAC) is due to NCDs. About one-third (35%) of deaths in the region could have been prevented with access to quality and timely healthcare. Moreover, four out of five of these preventable deaths are attributed to NCDs, with cardiovascular diseases and diabetes playing a significant role among these (GBD Collaborative Network, 2020). The economic cost of NCD is substantial due to high health expenditures, foregone earnings and premature mortality and disability. The WHO estimates that between 2011 and 2031, NCDs will cost the world economy US\$30 trillion (Bloom et al, 2011). In LAC, cardiovascular diseases and diabetes alone could

cause between 2015 and 2030 an economic loss equivalent to US\$2,170 in GDP per capita in 2015.¹

- 3.3 **There are substantial gaps in care for NCDs.** While effective treatment exists to prevent and manage NCDs, there are substantial gaps in detecting, preventing and treating these conditions in LAC. For example, about a third of cases of diabetes and hypertension are undiagnosed and only about half of persons with hypertension receive treatment. More importantly, between 50 and 70 percent of persons with these conditions are not effectively managed, as their blood pressure or glucose levels are not under control (PAHO, 2022; NCD-RisC, 2021). Moreover, there are substantial gender gaps with men usually being less likely to be diagnosed and controlled for common NCDs. For instance, in LAC while 72 percent of women with hypertension have been diagnosed only 55 percent of men do (NCD-RisC, 2021). Finally, while persons with disabilities have a higher burden of NCDs such as diabetes and hypertension they face substantial challenges to access care.
- 3.4 **Health systems in the region face substantial challenges** to address these gaps including limited fiscal space, insufficient human resources, heavy reliance on costly specialist care, lack of continuity of care, limited tools to promote self-care and self-management, and inequitable access to health care service-including by gender and disability status (Gatta et al 2024) among other dimensions. These challenges were heightened by the pandemic, as essential health services were severely disrupted, disproportionately affecting patients with NCDs and the poorest, underscoring the need to make service delivery more adaptable and resilient (Bernal et al 2023).
- 3.5 **There is untapped potential of digital health interventions for NCDs.** Such interventions can help address key challenges posed by NCDs and improve the quality, efficiency, and equity of healthcare (Bagolle et al. 2022; Bernal et al 2022). The reach and equity of health services can be expanded with the use of telemedicine to reduce geographical barriers and to provide care for patients with mobility issues. Digital applications can support patients seeking to address risk factors, such as lack of physical activity and overweight, and provide tools to manage their condition such as reminders, digital coaching, education, and progress tracking. Electronic health records (EHR) can improve care coordination by facilitating information exchange among multiple providers and creating the foundations for data analytics and population health management to proactively provide health care services based on the needs and risks of patients. While the potential is large, most of the evidence on these interventions comes from higher income countries, and there is a need to adapt, implement, and test the effectiveness at scale of these solutions in the LAC context.
- 3.6 **Evidence on digital interventions for NCD screening.** The first step for the effective management of conditions such as diabetes and hypertension are timely detection, particularly of those at highest risk. This first evaluation aims to answer the question: can digital tools for risk estimation and population management increase the uptake of screening services for NCDs? Assessing the risk of patients for NCDs is essential to determine their need for screening and early intervention and guide the use of scarce resources. Although risk assessment for NCDs such as cardiovascular diseases can

¹ Estimate in constant 2015 USD based on: Bloom, D. E., Chen, S., & McGovern, M. E. (2018). The economic burden of noncommunicable diseases and mental health conditions: results for Costa Rica, Jamaica, and Peru. *Revista Panamericana de Salud Publica/Pan American Journal of Public Health*, 42, 1–8. <https://doi.org/10.26633/rpsp.2018.18>

be done by combining sociodemographic, anthropometric, family history and behaviors data, this is often not done in practice – even when data are available in electronic health records (EHR) – leading to low observed detection rates. Algorithms that use EHR data to estimate a patient’s risk and flag high-risk patients to health workers could be a low-cost way to optimize screening services. Given the limited evidence in the region of this approach the TC will seek to first systematize the best practices in this area, support the design of an intervention and evaluate the intervention to inform the development of tools and for policymaking. The evaluation will also explore heterogeneous effects by gender and any other relevant dimensions to understand and address better the existing gaps in care. This will be done in a setting where there has been substantial progress with EHR implementation such as Belize.

- 3.7 **Evidence on digital interventions to reduce risk factors.** Reducing risk factors and promoting health behaviors is essential to reduce the incidence of some NCDs. For example, up to 80 percent of cases of diabetes and cardiovascular disease could be prevented by lifestyle changes such as increasing physical activity, adopting a healthy diet, and avoiding tobacco (WHO, 2005). However, achieving these lifestyles changes is complex and health systems are often ill-equipped to help patients. In-person lifestyle interventions for high-risk patients, though effective (Ali et al 2017), tend to be costly and hard to scale. For this reason, recent approaches use digital applications to deliver tasks usually performed by healthcare workers, such as education, reminders, motivational messages, and progress trackers. Some digitally supported lifestyle interventions appear to be effective, but there is large heterogeneity in their design traits and just a few have been tested in the region (Bernal et al 2022). In this context, it is key to understand first what are the key traits of digital interventions that facilitate achieving this lifestyle changes for patients, and second whether these digital interventions designed with best practices can reduce risk factors in the region. The TC will aim to shed light on these two key issues by developing a landscape of key features of digital interventions on NCD reduction, supporting the design of an intervention based on these features, and conducting an evaluation to understand its adoption, usability and effects. The evaluation will also explore heterogeneous effects by gender and any other relevant dimensions to understand and address better the existing gaps in risk factors. This will be done in the context of a country that has been working on this such as El Salvador under the operation [5874/OC-ES](#).²
- 3.8 **Quality of telehealth visits for NCDs.** Phone or video consultations have received an important boost during the COVID-19 pandemic, and many countries are continuing or are considering continuing to offer these services going forward. Teleconsultations are an attractive policy instrument: they could help reduce barriers to access especially for remote populations and persons with disabilities, help triage patients to reduce unnecessary hospital visits, improve the resilience of health service delivery, and may be relatively low cost compared to in-person care. However, there is currently no evidence on the quality of teleconsultations in LAC or how teleconsultations compare to in-person care, which tends to be of low quality (OECD, 2021). This TC aims to answer the question: what is the quality of telehealth visits and is it comparable to that of in-person visits in LAC? To do so it will conduct an audit study of teleconsultation and in-person care using approaches commonly used in the literature, such as

² <https://blogs.iadb.org/salud/es/ponerse-las-pilas-contra-la-prediabetes-3-lecciones-sobre-behavioral-design/>

standardized patients (Das and Hammer, 2014; King et al., 2019). This approach has been implemented in a wide range of countries and conditions from malaria to angina and has also been used to evaluate telehealth services (e.g., Xue et al, 2023). The study will be carried out in a context with experience providing telehealth visits such as Sao Paolo in Brazil ([4641/OC-BR](#)).

- 3.9 **Strategic Alignment.** This TC is consistent with the IDB Group Institutional Strategy: Transformation for Scale and Impact (CA-631) and aligns with the objectives of: (i) reduce poverty and inequality by enhancing health service delivery to improving human capital by addressing pressing health issues such as NCDs; and (ii) bolster sustainable regional growth by fostering digital infrastructure and innovative technology-based health services to improve the productivity and efficiency of health services. The TC also aligns with the operational focus areas of (i) social protection and human capital development, (ii) gender equality and inclusion of diverse population groups; and (iii) sustainable, resilient, and inclusive infrastructure.
- 3.10 The TC aligns with the Health Sector Framework Document (GN-2735-12) considering that it aims to improve access, quality, and efficiency of health services through the development of digital health tools to improve service delivery and better serve the needs of persons with NCDs. It is aligned with Ordinary Capital Strategic Development Program (GS-2819-14) priority area 5 of inclusive social development interventions by testing interventions to improve the quality of health services and strengthen service delivery and management. It is also aligned with the Country Strategy of El Salvador (GN-3046-1) by contributing to the strategic objective “Improve the coverage, quality, and efficiency of all levels of the health system” and the expected outcome “Stronger health system.” It is aligned with IDB’s Country Strategy with Belize 2022-2025 (GN3086) and the strategic objective of “improving basic health services provision”. Finally, it is also consistent with the Bank’s Country Strategy with Brazil (GN-3243) and the strategic objective of “Improve the quality of spending on health and education” and the expected outcome of “strengthen the primary health care”. The TC is funded by OC SPD Window 2-Social Development (W2E) fund.

IV. Description of activities/components and budget

- 4.1 **Component 1. Evaluation of digital tools for NCD detection (US\$75,000).** The objective of this component is to evaluate whether digital tools for risk estimation and population management could increase the uptake and optimize the use of screening services for NCDs. This component will fund consultancies (individual and firms) and services for the preparation, design, monitoring, implementation and analysis of this evaluation. Among the main activities to be financed under this component are: (i) a review of literature and practical experiences of existing tools to assess risk and determine the need of screening for NCDs such as diabetes and cardiovascular disease; (ii) an assessment of the data requirements to implement the risk scoring and management and their applicability in the health system, (iii) adaptation of existing tools; (iv) evaluation design (of impact and implementation); and (v) evaluation implementation and analysis including analysis of heterogenous effects by gender and any other relevant dimension. The main result for this component is a working paper summarizing the results of the evaluation.
- 4.2 **Component 2. Evaluation of digital interventions to reduce risk factors. (US\$150,000).** The objective of this component is to generate evidence on whether digital interventions for patients can help them reduce risk factors and early onset of

NCDs. This component will fund consultancies and services to conduct the following activities: (i) a literature review and synthesis of practical experiences of digital interventions for reducing risk factors for NCDs and their main functionalities and traits; (ii) an analysis of the cost, scalability and potential impact of the different traits of digital interventions analyzed; (iii) the design of an adaptive trial to test the most promising design traits (of impact and implementation); (iv) data collection, evaluation implementation and analysis including analysis of heterogenous effects by gender and any other relevant dimension. The main result for this component is a working paper summarizing the results of the evaluation.

- 4.3 **Component 3. Study of the quality of telehealth visits for NCDs (US\$150,000).** The objective of this component is to assess the quality and cost of telehealth visits for patients with NCDs. The component will fund consultancies and services to complete the following activities: (i) review of approaches for using standardized patients for NCDs in telehealth;(ii) review of approaches for using telehealth for NCDs and for which populations (vulnerable groups, persons with disabilities among others); (iii) design of the quality audit study; (iv) data collection; and (v) evaluation implementation and analysis. The main result for this component is a working paper summarizing the results of the evaluation.
- 4.4 **Results.** The main results of this TC include: (i) three working papers summarizing the results of the evaluations of digital interventions for NCDs; and (ii) a technical note summarizing the findings from the literature review and practical experiences of the use of digital interventions for the detection, prevention and treatment of NCDs. These results contribute to increased regional knowledge of the efficacy of digital interventions for NCDs. These products will summarize the lessons learned during the implementation and evaluation of the digital interventions to be tested.
- 4.5 **Total costs.** The total cost of this TC is US\$375,000, funded by the Development Effectiveness Intelligence Fund: OC SDP Window 2 - Social Development(W2E). These resources will finance consultancies (individuals and firms) for 36 months. The TC does not consider local financing.

Indicative Budget (US\$)

Activity/Component	Description	IDB/ OC SDP Window 2 - Social Development(W2E)	Total Funding
Component 1. Evaluation of digital tools for NCD detection	This component will fund consultancies (individuals and firms) to evaluate whether digital tools for risk estimation and population management could increase the uptake and optimize the use of screening services for NCDs.	75,000	75,000
Component 2. Evaluation of digital interventions to reduce risk factors	This component will fund consultancies (individuals and firms) to generate evidence on whether digital interventions for patients can help them reduce risk factors and early onset of NCDs.	150,000	150,000
Component 3. Study of the quality of telehealth visits for NCDs.	This component will fund consultancies (individuals and firms) to assess the quality and	150,000	150,000

	cost of telehealth visits for patients with NCDs.		
		Total	375,000

- 4.6 **Monitoring.** Monitoring of the progress and quality of the activities financed by this TC will be carried out monthly by the IDB, through SCL/SPH. The TC team leader will be responsible for supervising and monitoring the appropriate execution of the project. In addition, annual reports will be done according to the requirements established by the office of Grants and Co-Financing Management (ORP/GCM) of the IDB.
- 4.7 **Supervision.** The IDB, through the project team leader, will have the technical responsibility for the implementation and overall supervision of the project. The supervision of the operation will be done by Pedro Bernal, Senior Health Economist (SPH/SCL) as Team Leader and Sebastian Bauhoff (SCL/SPH), Principal Health Economist. The TL will work closely also with Jennifer Nelson, Senior Sector Specialist in Digital Health (SCL/SPH) to ensure alignment with the strategic approach and needs from the digital health sector. The TL will also keep the SCL/SPH specialists and country offices of the participating countries informed and work with them to align local priorities and needs: including Ignacio Astorga (El Salvador), Marcia Rocha (Brazil), and Pamela Gongora (Belize).

V. Executing agency and execution structure

- 5.1 **The Bank will be the executing agency of the TC,** given its knowledge of international best practices and its technical expertise in digital health interventions and impact evaluation which are central to the TC. According to the guidelines of OP-619-4, the justification that the Bank executes the TC is based on the following: the requesting entities do not have the technical capacity, operational or institutional needed to execute adequately and in a timely manner the activities to be conducted in this project, in particular they do not have technical units for the preparation and execution of the products and regional approaches included in this project. Before any intervention in a country, the team will coordinate with the corresponding country office and obtain the non-objection letter.
- 5.2 The execution of the TC will be under the responsibility of the Social Protection and Health Division (SCL/SPH) of the IADB. The execution by the Bank is justified since this is a Regional Technical Cooperation that involves several countries and will produce knowledge that will be useful for the region. SCL/SPH has the capacity and technical expertise required to carry out these processes. This execution structure will ensure cross-country learning and alignment with the SCL/SPH Digital Health Strategy and SCL/SPH knowledge agenda on quality, efficiency and resilience of health care services.
- 5.3 **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: (I) 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.
- 5.4 **Intellectual Property.** The knowledge products generated within this technical cooperation 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.

VI. Risks

- 6.1 Risks identified include potential delays of intervention implementation and approvals that could impact evaluation activities and feasibility. These risks would be mitigated through close supervision. Other risks are that the tools and services developed, and their evaluation do not generate adequate ownership and participation at country level. To mitigate this risk, emphasis will be put on team leaders and country counterparts as collaborators of any tool, service, and evaluation that is designed and tested and to make sure that their input is built into the design. At the local level, technical counterparts and partners will be identified to support the design and implementation of the interventions and respective evaluation. We will also build based on existing health information systems of the countries to improve the sustainability of the interventions.

VII. Exceptions to Bank policy

- 7.1 No exceptions to the Bank's policies have been identified.

VIII. Environmental and Social Aspects

- 8.1 This TC does not intend to finance pre-feasibility or feasibility studies for specific investment projects or environmental and social studies associated with them; therefore, the requirements of the Bank's Environmental and Social Policy Framework (ESPF) do not apply to this TC.

Required Annexes:

[Request from the Client_41084.pdf](#)

[Results Matrix_61838.pdf](#)

[Terms of Reference_99276.pdf](#)

[Procurement Plan_70630.pdf](#)