

TERMS OF REFERENCE

Consultancy for the design of interoperability guides for electronic medical records

COLOMBIA

[Project Number] TBD

CO-T1672

[Web link to approved document] TBD

Support the Ministry of Health and Social Protection in the digital transformation of the health system

1. Background and Justification

- 1.1.** Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).
- 1.2.** Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SISMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.
- 1.3.** The Colombian health system has developed an interoperable legal framework (Law 2015, 2022, art. 1; Resolution 866, 2021) to guarantee access to health services and for granting digital tools to all health services in different territories. The system not only has increased the offer of telemedicine services from 3.047 in 2019 to 11.807 in 2021, but also it has improved the number of provider institutions, which have reached 2.882 authorized health service providers (IPS) at the beginning of 2021 (MSPS, 2021). Additionally, the law 2014 of 2020 made possible the implementation of the plan for the Interoperability of Electronic Medical Records with the focus on increase the capability of exchange relevant clinical data between health institutions. Having these milestones in mind, it is relevant to support the Ministry of Health in the consolidation of

interoperability in the next period of five years, since 2022, which the Colombian government has established as the implementation period of medical records at national level. The MOH affirms that it is necessary to work in different phases, to generate trust within the different actors, and advance consistently in the implementation process.

- 1.4. This cooperation aims to support the Ministry of Health and Social Protection (MSPS) in the digital transformation of the health system and the implementation of digital health tools, having as priority the: (i) development and implementation of an interoperability pilot of digital transformation of the health system (SGSSS), and (ii) the training of personnel in the efficient use of digital health. This process of digitalization will bring important benefits in the quality and efficiency of primary health care. For example, the future achievement of a well-implemented electronic health record could increase the adherence of patients to clinical guidelines, the reduction of duplicated examinations, and the time used in the transcription of information (Nelson et al, 2019).
- 1.5. To support these development initiatives, the IDB has been actively supporting the MSPS in its process of digital transformation through technical cooperation (CO-T1619), which has allowed the development of the digital transformation route of the SGSSS as a design scheme solution to improve the opportunity, quality, and access to the information through the systems integration around a Financial Portal. Some of the data that would be integrated are the Individual Registry of Health Services Provision (RIPS), electronic billing of medical technologies and services, and a systematized electronic medical record. Furthermore, the Bank has approved the first loan based on results in Colombia (CO-L1248), which aims to improve SGSSS sustainability to consolidate the improvements made in coverage, equity, financial protection, and improvements to public health. This technical cooperation funds the development of technical documents to improve interoperability, following the example of the ones created in Uruguay with the same purpose, and it will also invest in concatenators, in the country, to test and implement practical exercises of information exchange to develop the capacity of the Government in digital health.

2. Objectives

- 2.1. Develop a comprehensive and specialized support in interoperability standards in health, which allows carrying out actions and activities for the construction, specification, and adoption of the common language of exchange within the framework of the interoperability of electronic medical records operation.

3. Scope of Services

- 3.1. Provide specialized technical team with more than four years of experience in health interoperability standards, specifically in HL7 FHIR
- 3.2. Experience in the development and generation of implementation guides using the SUSHI compiler ("SUSHI Unshortens ShortHand Inputs") and the FHIR Shorthand language ("FSH" or "Shorthand")

- 3.3. Experience in the implementation of terminology services for the consultation and validation of codes and subsets of the terminology defined for domains of interoperability in health at the level of procedures, diagnoses, medications
- 3.4. Experience in design, development, and interoperability courses of the HL7 FHIR standard in basic, intermediate, and advanced content
- 3.5. Provide specialized equipment with certifications in the HL7 FHIR standard

4. Key Activities

- 4.1. Development of the Implementation Guidelines (IG) for the interoperability of Clinical Records, based on the data model of Resolution 866 of 2021
- 4.2. Deployment of terminology services for national catalogs that are specified within Resolution 866 of 2021
- 4.3. Develop training courses in HL7 FHIR

5. Expected Outcome and Deliverables

- 5.1. Implementation guides
- 5.2. Terminology services for consulting catalogues: CUPS, CUMS, IUM, CIE 10
- 5.3. Training courses in HL7 FHIR given to the team of the Ministry of Health

6. Project Schedule and Milestones

- 6.1. Implementation guides: 1st and 2nd months
- 6.2. Terminology services for consulting catalogues: CUPS, CUMS, IUM, CIE 10: 3rd and 4th months
- 6.3. Training courses in HL7 FHIR given to the team of the Ministry of Health: 5th and 6th months

7. Reporting Requirements

- 7.1. The reports must be written in Spanish and include the scope of the milestone or product developed, the description of the activities carried out, the methodology used, the achievements obtained, as well as a description of the recommendations made regarding the project.
- 7.2. The reports must list the participants from the teams of the Ministry of Health or other dependencies with whom the activity took place.
- 7.3. The first report must include the reference to the implementation guides that were developed and their source files in FHIR Shorthand language.
- 7.4. Second report, must include the reference to the terminological services implemented with the national catalogs as evidence of the start-up of operations
- 7.5. Third report, the contents of the courses, the presentations, and the lists of participants within them

8. Acceptance Criteria

- 8.1. All reports must be in Spanish and sent in an electronic file, as required by the IDB, with evidence

of progress in the activities defined in the work plan approved at the beginning of the project.

9. Supervision and Reporting

- 9.1. The supervision of reports and products will be carried out through a technical team that the Office of Information and Communication Technologies of the Ministry of Health and by the Bank's technical team led by José Luís Ortiz (SCL/SPH), who will approve the products delivered by the firm.

10. Schedule of Payments

- 10.1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
- 10.2. The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
P1: Implementation guides	30%
P2: Terminology services for consulting catalogues: CUPS, CUMS, IUM, CIE 10	40%
P3: Training courses in HL7 FHIR given to the team of the Ministry of Health	30%
TOTAL	100%

TERMS OF REFERENCE*Consulting for the support of the Connectathon Strategy*

COLOMBIA

[Project Number] TBD

CO-T1672

*[Web link to approved document] TBD**Support the Ministry of Health and Social Protection in the digital transformation of the health system***11. Background and Justification**

- 11.1.** Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).
- 11.2.** Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SISMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.
- 11.3.** The Colombian health system has developed an interoperable legal framework (Law 2015, 2022, art. 1; Resolution 866, 2021) to guarantee access to health services and for granting digital tools to all health services in different territories. The system not only has increased the offer of telemedicine services from 3.047 in 2019 to 11.807 in 2021, but also it has improved the number of provider institutions, which have reached 2.882 authorized health service providers (IPS) at the beginning of 2021 (MSPS, 2021). Additionally, the law 2014 of 2020 made possible the implementation of the plan for the Interoperability of Electronic Medical Records with the focus on increase the capability of exchange relevant clinical data between health institutions. Having these milestones in mind, it is relevant to support the Ministry of Health in the consolidation of

interoperability in the next period of five years, since 2022, which the Colombian government has established as the implementation period of medical records at national level. The MOH affirms that it is necessary to work in different phases, to generate trust within the different actors, and advance consistently in the implementation process.

11.4. This cooperation aims to support the Ministry of Health and Social Protection (MSPS) in the digital transformation of the health system and the implementation of digital health tools, having as priority the: (i) development and implementation of an interoperability pilot of digital transformation of the health system (SGSSS), and (ii) the training of personnel in the efficient use of digital health. This process of digitalization will bring important benefits in the quality and efficiency of primary health care. For example, the future achievement of a well-implemented electronic health record could increase the adherence of patients to clinical guidelines, the reduction of duplicated examinations, and the time used in the transcription of information (Nelson et al, 2019).

11.5. To support these development initiatives, the IDB has been actively supporting the MSPS in its process of digital transformation through technical cooperation (CO-T1619), which has allowed the development of the digital transformation route of the SGSSS as a design scheme solution to improve the opportunity, quality, and access to the information through the systems integration around a Financial Portal. Some of the data that would be integrated are the Individual Registry of Health Services Provision (RIPS), electronic billing of medical technologies and services, and a systematized electronic medical record. Furthermore, the Bank has approved the first loan based on results in Colombia (CO-L1248), which aims to improve SGSSS sustainability to consolidate the improvements made in coverage, equity, financial protection, and improvements to public health. This technical cooperation funds the development of technical documents to improve interoperability, following the example of the ones created in Uruguay with the same purpose, and it will also invest in concatenators, in the country, to test and implement practical exercises of information exchange to develop the capacity of the Government in digital health.

12. Objectives

12.1. Provide a comprehensive and specialized accompaniment of different types of services for the development of the connection, including the location, image of the event, technological infrastructure and jobs, as well as human and logistical resources

13. Scope of Services

13.1. Present a comprehensive plan for the realization of the Interoperability Conectatón of the Clinical history in Colombia, which contemplates the different actions required for its realization.

13.2. Provide technological, location, and human resources to carry out the event, both for planning and carrying out the event.

13.3. Consolidate the results of the event, the communication and image materials to make a digital memory of the event as a summary of the activity

14. Key Activities

- 14.1. Hold understanding and preparation meetings with the technical team of the Ministry of Health
- 14.2. Carry out the work plan, which must be approved by the Ministry of Health team
- 14.3. Prepare the design of the communication pieces and the necessary material for the Conectatón
- 14.4. Carry out the design of the data network to be implemented in the Conectatón
- 14.5. Carry out infrastructure assembly one day in advance to carry out connectivity stress tests
- 14.6. Prepare the reports of the connection, including the photographic and video record, the attendance list by entity and region

15. Expected Outcome and Deliverables

- 15.1. Product 1: Work plan, indicating a schedule and products to be delivered within the framework of the planning of the Conectatón IHC Colombia 2022
- 15.2. Product 2: Design of communications material for the event to be used as an image of the event and design of the data network to be implemented in the event
- 15.3. Product 3: Memories of the event, which includes the photographic and video record; Attendance Report to the event by entities and region

16. Project Schedule and Milestones

- 16.1. Product 1: 1st month
- 16.2. Product 2: 2nd month
- 16.3. Product 3: 3rd month

17. Reporting Requirements

- 17.1. The reports must be written in Spanish and include the scope of the milestone or product developed, the description of the activities carried out, the methodology used, the achievements obtained, as well as a description of the recommendations made regarding the project.
- 17.2. The reports must list the participants from the teams of the Ministry of Health or other dependencies with whom the activity took place.
- 17.3. The first report must include the reference to the implementation guides that were developed and their source files in FHIR Shorthand language.
- 17.4. Second report, must include the reference to the terminological services implemented with the national catalogs as evidence of the start-up of operations
- 17.5. Third report, the contents of the courses, the presentations, and the lists of participants within them

18. Acceptance Criteria

- 18.1. All reports must be in Spanish and sent in an electronic file, as required by the IDB, with evidence of progress in the activities defined in the work plan approved at the beginning of the project.

19. Supervision and Reporting

- 19.1.** The supervision of reports and products will be carried out through a technical team that the Office of Information and Communication Technologies of the Ministry of Health and by the Bank's technical team led by José Luís Ortiz (SCL/SPH), who will approve the products delivered by the firm.

20. Schedule of Payments

- 20.1.** Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
- 20.2.** The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
Product 1	30%
Product 2	40%
Product 3	30%
TOTAL	100%

HRD Terms of Reference, Template 2
For Consultants

Consultancy to support institutional coordination for the timely execution of Technical Cooperation Support the Ministry of Health and Social Protection in the digital transformation of the health system

Background of this search: The Social Protection and Health Division (SPH) is looking for an expert to support institutional coordination for the timely execution of Technical Cooperation Support the Ministry of Health and Social Protection in the digital transformation of the health system

The team's mission: The Social Sector (SCL) has a multidisciplinary team convinced that investing in people is the way to improve lives and overcome the challenges of development in Latin America and the Caribbean. Together with the countries of the region, the Social Sector builds public policy solutions to reduce poverty and to improve the education, work, social protection and health services that citizens receive. The Sector's work aims to promote a more productive region with equal opportunities between men and women and with greater inclusion of the most vulnerable populations.

The Social Protection and Health Division (SPH) is entrusted with the preparation and supervision of IDB operations in borrowing member countries in the areas of social protection (safety nets and transfers and social inclusion services that include early childhood development, youth programs, care services, and others), health (health capital investment strategies, strengthening of health networks, financing of the health system, organization and performance, etc.) and nutrition.

Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).

Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SIMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.

The Colombian health system has developed an interoperable legal framework (Law 2015, 2022, art. 1; Resolution 866, 2021) to guarantee access to health services and for granting digital tools to all health services in different territories. The system not only has increased the offer of telemedicine services from 3.047 in 2019 to 11.807 in 2021, but also it has improved the number of provider institutions, which have reached 2.882 authorized health service providers (IPS) at the beginning of 2021 (MSPS, 2021). Additionally, the law 2014 of 2020 made possible the implementation of the plan for the Interoperability of Electronic Medical Records with the focus on increase the capability of exchange relevant clinical data between health institutions. Having these milestones in mind, it is relevant to support the Ministry of Health in the consolidation of interoperability in the next period of five years, since 2022, which the Colombian government has established as the implementation period of medical records at national level. The MOH affirms that it is necessary to work in different phases, to generate trust within the different actors, and advance consistently in the implementation process.

This cooperation aims to support the Ministry of Health and Social Protection (MSPS) in the digital transformation of the health system and the implementation of digital health tools, having as priority the: (i)

development and implementation of an interoperability pilot of digital transformation of the health system (SGSSS), and (ii) the training of personnel in the efficient use of digital health. This process of digitalization will bring important benefits in the quality and efficiency of primary health care. For example, the future achievement of a well-implemented electronic health record could increase the adherence of patients to clinical guidelines, the reduction of duplicated examinations, and the time used in the transcription of information (Nelson et al, 2019).

To support these development initiatives, the IDB has been actively supporting the MSPS in its process of digital transformation through technical cooperation (CO-T1619), which has allowed the development of the digital transformation route of the SGSSS as a design scheme solution to improve the opportunity, quality, and access to the information through the systems integration around a Financial Portal. Some of the data that would be integrated are the Individual Registry of Health Services Provision (RIPS), electronic billing of medical technologies and services, and a systematized electronic medical record. Furthermore, the Bank has approved the first loan based on results in Colombia (CO-L1248), which aims to improve SGSSS sustainability to consolidate the improvements made in coverage, equity, financial protection, and improvements to public health. This technical cooperation funds the development of technical documents to improve interoperability, following the example of the ones created in Uruguay with the same purpose, and it will also invest in concatenators, in the country, to test and implement practical exercises of information exchange to develop the capacity of the Government in digital health.

What you'll do: Support Health and Social Protection projects in Colombia:

- Participate as a team member in the design and preparation of country initiatives related to the health and social protection sector.
- Contribute operationally and technically in the design, preparation and development of operations in the health and social protection sector in Colombia.
- Monitor health and social protection operations and propose corrective actions where necessary.
- Support the review of studies and products resulting from consultancies related to the division's operations.
- Participate in initiatives to generate knowledge in the health and social protection sector, which include data analysis and processing, literature reviews, and preparation of academic documents.
- Support the coordination of the executing entities and/or beneficiaries of the division's operations.
- Support specialists in tasks related to the preparation of other operations that are compatible and integrated with the main objectives of the division.
- Assist in research work related to the health area in Colombia and other countries in the region.

What you'll need:

Citizenship:

- You are either a citizen of Colombia or a citizen of one of our 48-member countries with residency or legal permit to work in Colombia

Consanguinity: You have no family members (up to fourth degree of consanguinity and second degree of affinity, including spouse) working at the IDB Group.

Education: Professional with a degree in economic sciences, social sciences or health sciences with a degree in related areas. Master's degree in related areas preferred.

Experience: Minimum five (5) years of experience in topics related to the health sector, economic analysis and/or social development policies.

Languages: Spanish and English

Core and Technical Competencies: Excellent analytical skills, data analysis and processing, research and administrative management support. Additionally, strong oral and written communication skills, use and consultation of databases and socioeconomic surveys, excellent human relations and understanding of the requirements for the design and use of digital media for the dissemination of knowledge.

Opportunity Summary:

Type of contract: full time consultant - CNS

Length of contract: 12 months

Starting date: August 2023

Location: Bogotá DC

Responsible person: This work will be coordinated by José Luís Ortiz Hoyos (SCL/SPH), who will supervise and approve the reports and products delivered.

Requirements: You must be a citizen of one of the [IDB's 48 member countries](#) and have no family members currently working at the IDB Group.

Our culture: Our people are committed and passionate about improving lives in Latin-America and the Caribbean, and they get to do what they love in a diverse, collaborative and stimulating work environment. We are the first Latin American and Caribbean development institution to be awarded the EDGE certification, recognizing our strong commitment to gender equality. As an employee you can be part of internal resource groups that connect our diverse community around common interests.

Because we are committed to providing equal opportunities in employment, we embrace all diversity and encourage women, the LGBTQ+ community, persons with disabilities, afro-descendants, and indigenous people to apply.

About us: At the IDB, we are committed to improving lives. Since 1959, we've been a leading source of long-term financing for economic, social, and institutional development in Latin America and the Caribbean. We do more than lending though. We partner with our 48-member countries to provide Latin America and the Caribbean with cutting-edge research about relevant development issues, policy advice to inform their decisions, and technical assistance to improve the planning and execution of projects. For this, we need people who not only have the right skills but also are passionate about improving lives.

Our team in Human Resources carefully reviews all applications.

TERMS OF REFERENCE

Consultancy for the design of interoperability guides for electronic medical records

COLOMBIA

[Project Number] TBD

CO-T1672

[Web link to approved document] TBD

Support the Ministry of Health and Social Protection in the digital transformation of the health system

21. Background and Justification

- 21.1.** Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).
- 21.2.** Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SISMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.
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22. Objectives

22.1. Design and implement a solution that allows deploying the architecture defined for the IHC Colombia Pilot, considering the integration of an API-Gateway and a component with the necessary functionalities to cover the use cases determined for the IHC Connectathon. This process includes the transfer of knowledge to empower the Ministry of Health team regarding the solution.

23. Scope of Services

23.1. Design, develop, configure and deploy an api-gateway and functional components with the services for IHC Colombia, considering national nodes and regional nodes

23.2. Verify the integration of the API-gateway and functional components that allow the use cases determined for the IHC Connectathon to be carried out

23.3. Transfer knowledge regarding the work carried out that allows conceptual appropriation

by officials of the Ministry of Health

24. Key Activities

- 24.1. Design, develop, configure, and deploy an api-gateway and functional components with the services for IHC Colombia, considering national nodes and regional nodes
- 24.2. Verify the integration of the api-gateway functionalities with the nodes and components of the IHC Clinical History Interoperability platform: National Node, Terminological Services and five Regional Nodes
- 24.3. Transfer knowledge regarding the work carried out

25. Expected Outcome and Deliverables

- 25.1. Product 1: Workplan
- 25.2. Product 2: Api-gateway design and implementation
- 25.3. Product 3: Transfer process report APSd and Backend

26. Project Schedule and Milestones

- 26.1. Product 1: 1st and 2nd months
- 26.2. Product 2: 3rd and 4th months
- 26.3. Product 3: 5th and 6th months

27. Reporting Requirements

- 27.1. The reports must be written in Spanish and include the scope of the milestone or product developed, the description of the activities carried out, the methodology used, the achievements obtained, as well as a description of the recommendations made regarding the project.
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- 28.1. All reports must be in Spanish and sent in an electronic file, as required by the IDB, with evidence of progress in the activities defined in the work plan approved at the beginning of the project.

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- 29.1.** The supervision of reports and products will be carried out through a technical team that the Office of Information and Communication Technologies of the Ministry of Health and by the Bank's technical team led by José Luís Ortiz (SCL/SPH), who will approve the products delivered by the firm.

30. Schedule of Payments

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- 30.2.** The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
Product 1	30%
Product 2	40%
Product 3	30%
TOTAL	100%

HRD Terms of Reference, Template 2
For Consultants

Consultancy to support institutional coordination for the timely execution of Technical Cooperation Support the Ministry of Health and Social Protection in the digital transformation of the health system

Background of this search: The Social Protection and Health division is looking for a professional with experience in implementing Electronic Medical Records

The team's mission: The Social Sector (SCL) has a multidisciplinary team convinced that investing in people is the way to improve lives and overcome the challenges of development in Latin America and the Caribbean. Together with the countries of the region, the Social Sector builds public policy solutions to reduce poverty and to improve the education, work, social protection and health services that citizens receive. The Sector's work aims to promote a more productive region with equal opportunities between men and women and with greater inclusion of the most vulnerable populations.

The Social Protection and Health Division (SPH) is entrusted with the preparation and supervision of IDB operations in borrowing member countries in the areas of social protection (safety nets and transfers and social inclusion services that include early childhood development, youth programs, care services, and others), health (health capital investment strategies, strengthening of health networks, financing of the health system, organization and performance, etc.) and nutrition.

Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).

Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SISMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.

The Colombian health system has developed an interoperable legal framework (Law 2015, 2022, art. 1; Resolution 866, 2021) to guarantee access to health services and for granting digital tools to all health services in different territories. The system not only has increased the offer of telemedicine services from 3.047 in 2019 to 11.807 in 2021, but also it has improved the number of provider institutions, which have reached 2.882 authorized health service providers (IPS) at the beginning of 2021 (MSPS, 2021). Additionally, the law 2014 of 2020 made possible the implementation of the plan for the Interoperability of Electronic Medical Records with the focus on increase the capability of exchange relevant clinical data between health institutions. Having these milestones in mind, it is relevant to support the Ministry of Health in the consolidation of interoperability in the next period of five years, since 2022, which the Colombian government has established as the implementation period of medical records at national level. The MOH affirms that it is necessary to work in different phases, to generate trust within the different actors, and advance consistently in the implementation process.

This cooperation aims to support the Ministry of Health and Social Protection (MSPS) in the digital transformation of the health system and the implementation of digital health tools, having as priority the: (i) development and implementation of an interoperability pilot of digital transformation of the health system

(SGSSS), and (ii) the training of personnel in the efficient use of digital health. This process of digitalization will bring important benefits in the quality and efficiency of primary health care. For example, the future achievement of a well-implemented electronic health record could increase the adherence of patients to clinical guidelines, the reduction of duplicated examinations, and the time used in the transcription of information (Nelson et al, 2019).

To support these development initiatives, the IDB has been actively supporting the MSPS in its process of digital transformation through technical cooperation (CO-T1619), which has allowed the development of the digital transformation route of the SGSSS as a design scheme solution to improve the opportunity, quality, and access to the information through the systems integration around a Financial Portal. Some of the data that would be integrated are the Individual Registry of Health Services Provision (RIPS), electronic billing of medical technologies and services, and a systematized electronic medical record. Furthermore, the Bank has approved the first loan based on results in Colombia (CO-L1248), which aims to improve SGSSS sustainability to consolidate the improvements made in coverage, equity, financial protection, and improvements to public health. This technical cooperation funds the development of technical documents to improve interoperability, following the example of the ones created in Uruguay with the same purpose, and it will also invest in concatenators, in the country, to test and implement practical exercises of information exchange to develop the capacity of the Government in digital health.

What you'll do: The purpose of this consultancy is to advise the Ministry of Health of Colombia in both strategic and technical aspects, for the implementation of the interoperability of the Electronic Clinical Record at the National level. The consultant must propose, accompany, and articulate, together with the teams of the Ministry of Health, the strategies and definitions necessary for the design, construction, and implementation of this essential project for the country. Similarly, the consultant will accompany the processes that are developed around the construction of the Roadmap for digital transformation in health. Under the supervision of the SPH Division of IDB Colombia, the person selected for the position will carry out the following activities, without prejudice to others that may arise and that are determined necessary to achieve the objectives of this consultancy:

- Guide the specifications of the interoperability framework in health to be required by the National Electronic Medical Record, making use of international standards at the syntactic and semantic level.
- Accompany the definitions for the model of the architecture of the National Electronic Clinical Record, in which the exchange model and the information flows that are required are identified in a high level of detail, within the framework of the General System of Social Security in Health SGSSS.
- Develop articulation and coordination actions, with the work teams within the Ministry of Health, government entities and with the working groups that are convened, for the processes of definition and adoption of the National Interoperable Electronic Medical Record.
- Propose strategies for the implementation and governance of the project to generate a process of sustainability and adoption within the different actors of the system.

What you'll need:

Citizenship:

- You are either a citizen of Colombia or a citizen of one of our 48-member countries with residency or legal permit to work in Colombia

Consanguinity: You have no family members (up to fourth degree of consanguinity and second degree of affinity, including spouse) working at the IDB Group.

Education: Professional with a master's degree or equivalent in Industrial Engineering, Business Administration, Economics or Health Sciences.

Experience: Minimum five (12) years of experience in topics related to the health sector, economic analysis and/or social development policies.

Languages: Spanish and English

Core and Technical Competencies:

- Experience in document production and implementation methodologies for Electronic Medical Records.

- Data analysis skills
- Ability to draft and produce written documents
- Ability to communicate appropriately and to exercise leadership
- Ability to work with multidisciplinary teams and public and private organizations
- Systems thinking, analytical and strategic action skills

Opportunity Summary:

Type of contract: Contractual of External Products and Services

Length of contract: 12 months

Starting date: January 2023

Location: Bogotá DC

Responsible person: This work will be coordinated by José Luís Ortiz Hoyos (SCL/SPH), who will supervise and approve the reports and products delivered.

Requirements: You must be a citizen of one of the [IDB's 48 member countries](#) and have no family members currently working at the IDB Group.

Our culture: Our people are committed and passionate about improving lives in Latin-America and the Caribbean, and they get to do what they love in a diverse, collaborative and stimulating work environment. We are the first Latin American and Caribbean development institution to be awarded the EDGE certification, recognizing our strong commitment to gender equality. As an employee you can be part of internal resource groups that connect our diverse community around common interests.

Because we are committed to providing equal opportunities in employment, we embrace all diversity and encourage women, the LGBTQ+ community, persons with disabilities, afro-descendants, and indigenous people to apply.

About us: At the IDB, we are committed to improving lives. Since 1959, we've been a leading source of long-term financing for economic, social, and institutional development in Latin America and the Caribbean. We do more than lending though. We partner with our 48-member countries to provide Latin America and the Caribbean with cutting-edge research about relevant development issues, policy advice to inform their decisions, and technical assistance to improve the planning and execution of projects. For this, we need people who not only have the right skills but also are passionate about improving lives.

Our team in Human Resources carefully reviews all applications.

TERMS OF REFERENCE

Consultancy for the implementation of a survey to measure the technological infrastructure for health

COLOMBIA

[Project Number] TBD

CO-T1672

[Web link to approved document] TBD

Support the Ministry of Health and Social Protection in the digital transformation of the health system

31. Background and Justification

- 31.1.** Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).
- 31.2.** Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SISMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.
- 31.3.** The Colombian health system has developed an interoperable legal framework (Law 2015, 2022, art. 1; Resolution 866, 2021) to guarantee access to health services and for granting digital tools to all health services in different territories. The system not only has increased the offer of telemedicine services from 3.047 in 2019 to 11.807 in 2021, but also it has improved the number of provider institutions, which have reached 2.882 authorized health service providers (IPS) at the beginning of 2021 (MSPS, 2021). Additionally, the law 2014 of 2020 made possible the implementation of the plan for the Interoperability of Electronic Medical Records with the focus on increase the capability of exchange relevant clinical data between health institutions. Having these milestones in mind, it is relevant to support the Ministry of Health in the consolidation of

interoperability in the next period of five years, since 2022, which the Colombian government has established as the implementation period of medical records at national level. The MOH affirms that it is necessary to work in different phases, to generate trust within the different actors, and advance consistently in the implementation process.

31.4. This cooperation aims to support the Ministry of Health and Social Protection (MSPS) in the digital transformation of the health system and the implementation of digital health tools, having as priority the: (i) development and implementation of an interoperability pilot of digital transformation of the health system (SGSSS), and (ii) the training of personnel in the efficient use of digital health. This process of digitalization will bring important benefits in the quality and efficiency of primary health care. For example, the future achievement of a well-implemented electronic health record could increase the adherence of patients to clinical guidelines, the reduction of duplicated examinations, and the time used in the transcription of information (Nelson et al, 2019).

31.5. To support these development initiatives, the IDB has been actively supporting the MSPS in its process of digital transformation through technical cooperation (CO-T1619), which has allowed the development of the digital transformation route of the SGSSS as a design scheme solution to improve the opportunity, quality, and access to the information through the systems integration around a Financial Portal. Some of the data that would be integrated are the Individual Registry of Health Services Provision (RIPS), electronic billing of medical technologies and services, and a systematized electronic medical record. Furthermore, the Bank has approved the first loan based on results in Colombia (CO-L1248), which aims to improve SGSSS sustainability to consolidate the improvements made in coverage, equity, financial protection, and improvements to public health. This technical cooperation funds the development of technical documents to improve interoperability, following the example of the ones created in Uruguay with the same purpose, and it will also invest in concatenators, in the country, to test and implement practical exercises of information exchange to develop the capacity of the Government in digital health.

32. Objectives

32.1. Design, implementation, and analysis of a survey to measure Colombia's digital health capabilities. Including infrastructure, staff, and digital connections. This process includes the transfer of knowledge to empower the Ministry of Health team regarding the solution.

33. Scope of Services

- 33.1.** Survey design with question feasibility tests
- 33.2.** Pilot implementation of the survey
- 33.3.** Implementation of the survey at the national level
- 33.4.** Collection and analysis of the data obtained.

34. Key Activities

34.1. Design of the survey with feasibility tests of the questions: this work must include the sample design, the bank of questions and a technical report on the relevance of the questions to

be implemented.

- 34.2. Pilot implementation of the survey: technical design and implementation of a pilot that allows evidence of the effectiveness and relevance of the questions. The pilot can be regional
- 34.3. Implementation of the survey at the national level: roll out the survey at the national level with a representative sample of all regions
- 34.4. Collection and analysis of the data obtained: present a detailed and descriptive analysis of the results of the survey.

35. Expected Outcome and Deliverables

- 35.1. P1: Work plan and survey design with question feasibility tests
- 35.2. P2: Pilot implementation of the survey
- 35.3. P3: Implementation of the survey at the national level
- 35.4. P4: Collection and analysis of the data obtained.

36. Project Schedule and Milestones

- 36.1. Product 1: 1st and 3rd months
- 36.2. Product 2: 4th and 6th months
- 36.3. Product 3: 7th and 9th months
- 36.4. Product 4: 10th and 12th months

37. Reporting Requirements

- 37.1. The reports must be written in Spanish and include the scope of the milestone or product developed, the description of the activities carried out, the methodology used, the achievements obtained, as well as a description of the recommendations made regarding the project.
- 37.2. The reports must list the participants from the teams of the Ministry of Health or other dependencies with whom the activity took place.
- 37.3. The first report must include the reference to the implementation guides that were developed and their source files in FHIR Shorthand language.
- 37.4. Second report, must include the reference to the terminological services implemented with the national catalogs as evidence of the start-up of operations
- 37.5. Third report, the contents of the courses, the presentations, and the lists of participants within them

38. Acceptance Criteria

- 38.1. All reports must be in Spanish and sent in an electronic file, as required by the IDB, with evidence of progress in the activities defined in the work plan approved at the beginning of the project.

39. Supervision and Reporting

- 39.1.** The supervision of reports and products will be carried out through a technical team that the Office of Information and Communication Technologies of the Ministry of Health and by the Bank's technical team led by José Luís Ortiz (SCL/SPH), who will approve the products delivered by the firm.

40. Schedule of Payments

- 40.1.** Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
- 40.2.** The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
Product 1	20%
Product 2	30%
Product 3	30%
Product 3	20%
TOTAL	100%

TERMS OF REFERENCE

Consultancy for the training program in data-driven strategic digital hospital management

COLOMBIA

[Project Number] TBD

CO-T1672

[Web link to approved document] TBD

Support the Ministry of Health and Social Protection in the digital transformation of the health system

41. Background and Justification

- 41.1.** Information systems in health and social protection are one of the pillars that need to be granted to guarantee robust and sustainable health systems. The quality and the quantity of information presented on them allow governments to increase the effectiveness of their public policies and the impact of their decision-making processes. In terms of information system coverage, Colombia shares some of the Latin America weakness that the WHO/PAHO identifies as weakness of information systems, which consist in (i) the lack of knowledge in how to create, storage and use data, (ii) poor interoperative systems, and (iii) low evaluation between institutions (WHO, 2020).
- 41.2.** Notwithstanding this weakness, Colombia has a large coverage in health services and drug transaction sales data (SISPRO, RIPS, Suficiencia, MIPRES and SISMED). These databases have the main purposes of calculating the per-capita health insurance premium, regulating and monitoring drug prices, and preventive health services. However, these systems are characterized by their outdated processes, the few transactions they support, and the limited and delayed cleansing processes executed before being able for consumption. Only 61.7% hospitals employ Electronic Health Records (EHRs), with only three (3) regional clusters that interoperate their EHRs, therefore there are serious limitations in the data coverage, in the dissemination of information, and the lack of articulation between and within institutions in rural areas. Even more important, the hospitals, as decentralized institutions, have the paradoxes between creating the capacity to be self-sufficient and spend resources to implement electronic information systems.
- 41.3.** The Colombian health system has developed an interoperable legal framework (Law 2015, 2022, art. 1; Resolution 866, 2021) to guarantee access to health services and for granting digital tools to all health services in different territories. The system not only has increased the offer of telemedicine services from 3.047 in 2019 to 11.807 in 2021, but also it has improved the number of provider institutions, which have reached 2.882 authorized health service providers (IPS) at the beginning of 2021 (MSPS, 2021). Additionally, the law 2014 of 2020 made possible the implementation of the plan for the Interoperability of Electronic Medical Records with the focus on increase the capability of exchange relevant clinical data between health institutions. Having these milestones in mind, it is relevant to support the Ministry of Health in the consolidation of

interoperability in the next period of five years, since 2022, which the Colombian government has established as the implementation period of medical records at national level. The MOH affirms that it is necessary to work in different phases, to generate trust within the different actors, and advance consistently in the implementation process.

41.4. This cooperation aims to support the Ministry of Health and Social Protection (MSPS) in the digital transformation of the health system and the implementation of digital health tools, having as priority the: (i) development and implementation of an interoperability pilot of digital transformation of the health system (SGSSS), and (ii) the training of personnel in the efficient use of digital health. This process of digitalization will bring important benefits in the quality and efficiency of primary health care. For example, the future achievement of a well-implemented electronic health record could increase the adherence of patients to clinical guidelines, the reduction of duplicated examinations, and the time used in the transcription of information (Nelson et al, 2019).

41.5. To support these development initiatives, the IDB has been actively supporting the MSPS in its process of digital transformation through technical cooperation (CO-T1619), which has allowed the development of the digital transformation route of the SGSSS as a design scheme solution to improve the opportunity, quality, and access to the information through the systems integration around a Financial Portal. Some of the data that would be integrated are the Individual Registry of Health Services Provision (RIPS), electronic billing of medical technologies and services, and a systematized electronic medical record. Furthermore, the Bank has approved the first loan based on results in Colombia (CO-L1248), which aims to improve SGSSS sustainability to consolidate the improvements made in coverage, equity, financial protection, and improvements to public health. This technical cooperation funds the development of technical documents to improve interoperability, following the example of the ones created in Uruguay with the same purpose, and it will also invest in concatenators, in the country, to test and implement practical exercises of information exchange to develop the capacity of the Government in digital health.

42. Objectives

42.1. The objective of this consultancy of this consultancy is to provide an online training for healthcare professionals and personnel from the ministry of Health in the region to improve their capability in healthcare services and to learn streamlined hospital operation and management through digitalized systems.

43. Scope of Services

43.1. The selected candidate will provide online program of digital hospital management and healthcare innovation for healthcare professionals and personnel from the ministry of Health in the region, preferably holding medical doctor related background or having direct position in implementing digital transformation of healthcare.

44. Key Activities

The selected firm will provide an online training program including:

- 44.1.** Digital Transformation in Hospital Management: which aims to describe how digital transformation assists complex processes in hospitals. This module includes insurance review management with EMR recognizing its direct impact on the hospital's revenue, refer network and delivery system that can greatly benefit from healthcare information exchange especially between local clinics and tertiary hospitals, and nursing management where utilizing technology can relieve heavy burden of documentation and communication between the patient and doctor.
- 44.2.** Healthcare Innovation: which focuses on the future of healthcare ICT covering topics such as AI, Big Data, XR and DTx (digital therapeutics). This module provides a mixture of a macro and a micro view and shares personal experiences of medical professionals as they research into future medicine while experiencing unmet needs or challenges practicing medicine daily.

45. Expected Outcome and Deliverables

- 45.1.** Deliverable 1: workplan and training curriculum including specific topics for each session and expected time schedule.
- 45.2.** Deliverable 2: the completion of online training with developed course materials for the training (including presentations and videos). The online training and the course materials will be in Spanish. The deliverable to the Bank will be the Bank's intellectual property and can be used on the Bank's network to disseminate the lessons learnt.
- 45.3.** Deliverable 3: the final report of online training which includes the brief of the developed course, the analyzed list of participants and their participation, course satisfaction survey result and any other results of course evaluation.

46. Project Schedule and Milestones

- 46.1.** The selected firm is expected to provide a schedule and all materials related to the logistics of the course at most 1 month after signature of the contract.
- 46.2.** The total duration of this project will be 9 months.

47. Reporting Requirements

- 47.1.** The reports must be written in Spanish and include the scope of the milestone or product developed, the description of the activities carried out, the methodology used, the achievements obtained, as well as a description of the recommendations made regarding the project.
- 47.2.** The reports must list the participants from the teams of the Ministry of Health or other dependencies with whom the activity took place.
- 47.3.** The first report must include the reference to the implementation guides that were developed and their source files in FHIR Shorthand language.
- 47.4.** Second report, must include the reference to the terminological services implemented with the national catalogs as evidence of the start-up of operations
- 47.5.** Third report, the contents of the courses, the presentations, and the lists of participants within them

47.6.

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he selected firm will provide a final report including attendance to the course and level of achievement of each participant.

48. Acceptance Criteria

48.1. All reports must be in Spanish and sent in an electronic file, as required by the IDB, with evidence of progress in the activities defined in the work plan approved at the beginning of the project.

48.2. To be accepted, the report will include the list of all participants in the course, a description of online training activities, participants' satisfaction survey and results of any evaluations.

49. Supervision and Reporting

49.1. The supervision of reports and products will be carried out through a technical team that the Office of Information and Communication Technologies of the Ministry of Health and by the Bank's technical team led by José Luís Ortiz (SCL/SPH), who will approve the products delivered by the firm.

50. Schedule of Payments

50.1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.

50.2. The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
1. <i>Deliverable 1: Workplan and training curriculum</i>	30%
2. <i>Deliverable 2: The completion of online training with developed course materials (in Spanish)</i>	40%
3. <i>Deliverable 3: The final report of online training</i>	30%
TOTAL	100%