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Loan N°./Financing:

Project: Support for the Health Systems Strengthening for the Prevention and Care Management of Non-Communicable Diseases Programme

Title: OPEN ELECTRONIC HEALTH RECORD (EHR) – CAPACITY BUILDING, DESIGN AND IMPLEMENTATION CONSULTANT

Borrower/Bid No:

THE MINISTRY OF HEALTH AND WELLNESS

REQUEST FOR EXPRESSIONS OF INTEREST/CVS

OPEN ELECTRONIC HEALTH RECORD (EHR) – CAPACITY BUILDING, DESIGN AND IMPLEMENTATION CONSULTANT

JAMAICA

Support for the Health Systems Strengthening for the Prevention and Care Management of Non-Communicable Diseases Programme

Loan No: JA-L1049

The Government of Jamaica has received financing from the Inter-American Development Bank (IDB) towards the cost of the Support for the Health Systems Strengthening for the Prevention and Care Management of Non-Communicable Diseases Programme and intends to apply part of the proceeds for the selection of an **Open EHR – Capacity Building, Design and Implementation Consultant**.

OBJECTIVE

The primary function of this role is to plan, design, build capacity and implement the required components of the information architecture of the national eHealth (Digital Health) Architecture for the health sector, with emphasis on data design and specifications using Open EHR clinical modelling, related resources and tools with an open platform approach. The contract duration is for fourteen (14) months.

QUALIFICATION AND EXPERIENCE

- A Bachelor's degree or post-secondary training or 10 years of equivalent experience in computer science, business administration, health informatics, information technology, information management or a related field;
- Minimum of five (5) years consulting/working skills building/education;
- Experience in Open EHR specifications, archetypes, templates, relevant health terminologies, data mapping, and Open EHR Clinical Data Repository technical specifications and implementation, or a similar platform

The Ministry of Health and Wellness now invites eligible individuals to indicate their interest in providing the Services.

The attention of interested Consultants is drawn to 1.9 of the IDB`s: *Policies for the Selection and Contracting of Consultants financed by the Inter-American Development Bank* GN-2350-9, March 2011, setting forth the IDB`s policy on conflict of interest. The Consultant will be selected in accordance with the Selection of Individual Consultants method set out in the IDB`s Policies.

Expressions of interest in the form of an application letter and Curriculum Vitae must be delivered to the address below (in person, or by mail, or by fax, or by e-mail**)** by **Monday, February 17, 2020.**

The detailed Terms of Reference is available on the website of the Ministry of Health and Wellness at www.moh.gov.jm.

The Procurement Management Specialist

Support for the Health Systems Strengthening for the Prevention and Care

Management of Non-Communicable Diseases Programme

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Kingston 5.

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We thank all applicants; however, please note only shortlisted candidates will be contacted.

TERMS OF REFERENCE

SUPPORT FOR THE HEALTH SYSTEM STRENGTHENING FOR THE PREVENTION AND CARE MANAGEMENT OF NON-COMMUNICABLE DISEASE PROGRAMME

Title: OpenEHR – Capacity Building, Design and Implementation Consultant

Engagement Type: Individual

Background:

The Ministry of Health and Wellness, Government of Jamaica (MOHW/GOJ) is planning and executing an investment loan from Inter-American Development Bank (IDB; JA-L1049). The programme objective is to improve the health of Jamaica's population by strengthening comprehensive policies for the prevention of NCDs risk factors and for the implementation of a chronic care model with an improved access to strengthened and integrated primary and hospital services networks, that provide more efficient and higher quality care. The policy-based operation of this Hybrid Programme is the first operation of a PBP series which will be made up of two contractually independent and technically linked loans. The policies in the Programmatic Series will consolidate regulatory measures to address the preventable causes of NCDs and to reorient health systems to address prevention and control of NCDs through a people-centred primary health chronic care model. The investment component, in turn, will finance activities to consolidate integrated health networks and improve the management, quality and efficiency of health services. While the PBP will benefit the Jamaican population at-large, the Investment Loan will have approximately 800,000 potential direct beneficiaries who reside in the catchment areas of the health services networks that will receive investments.

The Investment Programme being implemented by the Ministry of Health (MOH) has two (2) major components and an allocation to support programme administration and evaluation.

Component 1 – Organization and consolidation of integrated health services networks

This component will finance the purchase of medical equipment and the improvement of infrastructure for primary health care services in the catchment areas of three priority hospitals to increase their capacity in health promotion and disease prevention, especially regarding chronic, non-communicable diseases. The investments will focus on strengthening the diagnostic and screening capability as well as the clinical and resolutive capacity of health clinics. This Component will further finance the upgrading and or expansion of three (3) hospitals selected on criteria relating to strategic role in the national hospital network, supply-demand gap analyses, and physical needs assessment. The hospitals will benefit from infrastructure upgrading and or expansion as well as modernization.

Sub-Component 1.1 – Strengthening Primary Care

1.1 The purpose of this subcomponent is to increase the physical capacity for service provision at the primary care level in three (3) priority geographical areas. Approximately ten (10) health centres have been identified to receive investments in medical equipment and infrastructure refurbishment and expansion. The subcomponent will finance: (i) the preparation of building designs for the construction of new infrastructure on the sites of existing facilities (three centres), expansion of existing structures (four centres), and refurbishing (three centres); (ii) the physical works required for infrastructure improvement; (iii) the purchase of medical equipment including essential diagnostic and treatment items for NCDs, such as sphygmomanometers,

electrocardiogram machines, pulse oximeters, defibrillators, computerized chemistry machines, etc.); (iv) engineering services for construction supervision; and (v) corrective and preventive maintenance of medical equipment

Sub-Component 1.2 – Increasing the Capacity and Efficiency of Hospital Services

This subcomponent will address urgent needs to enhance patient safety and services in three (3) hospitals whose catchment areas contain the health centres identified in subcomponent 1.1. Financing from this subcomponent will be allocated to:

(i) the building and engineering designs for the infrastructure improvement and expansion;

(ii) the construction in three hospitals according to contracted plans and designs;

(iii) the purchase of medical equipment to raise clinical capacity to partially account for existing demand;

(iv) the purchase of imaging equipment, including computerized tomography machines;

(v) purchase of industrial style laundry machines;

(vi) construction supervision services; and

(vii) the design and implementation of a corrective and preventive equipment maintenance programme.

Component 2 – Improvement of Management, Quality and Efficiency of Health Services

This component will provide technical assistance to design and implement the Chronic Care Model (CCM) in the participating health services networks; to review and develop care pathways and protocols; and to prepare change management, continuous quality improvement and social media marketing for behaviour change strategies. It will also finance the implementation of the fourth Jamaica Health and Lifestyle Survey. This component will further support:

i. the creation of a strong foundation for a digital health ecosystem, including the adoption of standards for interoperability, system architecture, updated governance structure, and other key elements;

ii. the design and implementation of a sustainable Electronic Health Record (EHR) platform focusing on digitalization of key processes within the improved CCM;

iii. the strengthening of telehealth/telemedicine/telementoring capacity to include chronic care management, and the establishment of norms and processes for its institutionalization.

iv. the strengthening of telehealth/telemedicine capacity through the expansion of the ECHO model, the inclusion of chronic care in the platform, and the establishment of norms and processes for its institutionalization.

Background to Consultancy:

Information systems for health are critical to primary health care and the CCM, as well as complex care. The WHO recognizes the need for information systems for health as part of the Package of Essential Noncommunicable (PEN) Disease Interventions for Primary Health Care in Low-Resource Settings. Additionally, research shows that digital tools can make important contributions to the provision of chronic care when patients and providers are connected to share information, compare this information to knowledge found in evidence-based standards, and monitor results through regular feedback and interaction. Adoption of health information technology has produced mortality rate reductions for complex patients whose diagnoses require cross-specialty care coordination and extensive clinical information management in hospital settings and improvements in resource allocation efficiency. Health information systems, along with information sharing, have the potential to improve clinical practice by reducing staff errors, improving automated harm detection, monitoring infections more effectively, and enhancing the continuity of care during physician handoffs. A significant number of opportunities exist for the Hospital Information Management System (HIMS) to contribute to savings for both the health system and the Jamaican economy.[1]

Telemedicine2 and mobile health (mHealth) present possibilities to improve the effectiveness and efficiency of NCD management, which can occur principally in the outpatient setting [31]. For example, blood pressure control consultations by way of 10-15 emails and/or phone calls can occur across weeks and the cost is approximately 29% of the cost of in-person acute care [32]. mHealth tools, such as text messages, medication reminders, symptom monitoring, educational resources, and facilitated patient-provider communication to increase adherence targeting low-income, elderly, and minority groups were found to lessen the burden of travel to a care provider. They have also facilitated better management and improved patient confidence to monitor chronic diseases. Telehealth, or the remote diagnosis and treatment of patients by means of telecommunications technology, has been especially effective in the management of chronic diseases, and has demonstrated improvement in outcomes (diabetes), empowerment and self-management (diabetes and high-risk dialysis patients) [33]. As mobile-cellular subscriptions are high in Jamaica (115 per 100 inhabitants). mHealth and telemedicine may provide an opening to improve patient adherence and aid in follow-up. Given Jamaica's experience using ECHO's tele-mentoring portal for HIV, this platform could be expanded to support chronic illness, and use-cases could be developed to pilot the use of mHealth and telemedicine for chronic care.

PAHO has also been supporting MOHW/GOJ to strengthen information systems for health (IS4H) in Jamaica. IS4H is a key strategy in the efforts of the MOHW/GOJ improve planning, decision-making, policy formulation, and health equality in Jamaica. MOHW/GOJ has embarked on a renewed effort to strengthen and expand its use of information technology to improve the efficiency, efficacy and safety of both clinical and business processes, and to improve the availability of quality information to support clinical, program and policy decision-making.

Objective of Consultancy

The primary function of this role is to plan, design, build capacity and implement the required components of the information architecture of the national eHealth (Digital Health) Architecture for the health sector, with emphasis on data design and specifications using OpenEHR clinical modelling, related resources and tools with an open platform approach. OpenEHR and its resources will enable the vision of the Ministry of Health and Wellness for (semantic) interoperability across various eHealth applications in the public and ultimately the private health sector. OpenEHR enables the use of an open platform and provides a large repository of pre-defined data elements ready for use including for queries, reporting and analytics. The consultant will collaborate with the eHealth Architecture consultant contracted through the Global Fund Project.

Scope of Work:

This role is expected to be fulfilled over a period of fourteen (14) months commencing in January 2020 and the key responsibilities include:

- Provide onsite and virtual OpenEHR capacity building for data specifications, clinical modelling through archetype selection and development, template design and establishing associated value sets to the point of readiness for the design and implementation of an electronic health records platform. This should include demographics and the journey of the NCDs patient across primary and secondary care services.

- Establish access to the tooling/resources required for the development of archetypes and templates and the International /CARICOM Clinical Knowledge Manager (CKM).

- A technical contribution to the national architectural design and workforce capacity

  building support for software developers enabling them to make effective use of modelling outcomes and facilitate early integration of EHR with Laboratory and

  Pharmacy.

- Support the MoHW to determine what data needs to be pulled from existing systems (including GNU Health/ePAS) and HL7 message standard version capability as well as HL7 FHIR standard. This will require capacity building regarding mapping of data to a shared concept representation.

- Provide advice and support on governance processes including Data/Terminology, Data dictionary and data standards for medical, laboratory and medication terminology management in a manner that facilitates early integration of EHR with Laboratory and Pharmacy systems.

- Advise on the adoption of an Open EHR CDR (Clinical Data Repository) or similar technology and support the development of specifications and procurement of hardware, software and services for the technology neutral database design to be adopted nationally to optimize the support for data sharing and data analytics.
- Establish identity management protocols and the establishment of patient, provider and health institution unique identifiers registries.
- Establish a demo environment of an Open EHR and demonstrate the core and extended functionalities.

Deliverables:

- Product 1: Workplan and joint architecture road map.
- Product 2: Report outlining education and skills building workshops conducted for MOHW workforce in identity management, data mapping and demographics archetypes with documentation of protocols and specifications.
- Product 3: Draft design of technical infrastructure requirements for the support of prevention and chronic care management of NCDs and the establishment of the ICT infrastructure facilitating early integration of EHR with Laboratory and Pharmacy.
- Product 4: Open EHR Clinical Data Repository demo environment established and functionalities demonstrated with high level documentation of the methodology.
- Product 5: Documentation on national terminology infrastructure review, update and management consolidated in an acceptable format (preferable relational database format).
- Product 6: Documentation of the development of governance principles, including a process for the identification of required areas to be mandated and governed as support to the establishment of a national/regional governance organization from inception to final approval.
- Product 7: Report on training programme with confirmation that selected local workforce demonstrates knowledge transfer and is able to manage its own archetype/template development, and their use in Open EHR specification compliant applications.
- Product 8: Final comprehensive report on Consultancy.

Payment Milestones:

Milestone percentage of total contract amount

Product 1: Workplan and joint road map 10% (2 weeks)

Product 2: Education and skills building 15% (8 weeks)

Product 3: Draft design of technical infrastructure requirements 10% (4 months)

Product 4: OpenEHR Clinical Data Repository demo 5% (6 months)

Product 5: National terminology infrastructure 15% (8 months)

Product 6: Governance principles 15% (10 months)

Product 7: Report on Training Programme 15% (12 months)

Product 8: Final Report 15 % (14 months)

N.B. Timelines are approximate and are from the contract start date

Qualifications

- **Education:** A Bachelor's degree or post-secondary training or 10 years of equivalent experience in computer science, business administration, health informatics, information technology, information management or a related field

Experience:

- Minimum of five (5) years consulting/working skills building/education experience in OpenEHR specifications, archetypes, templates, relevant health terminologies, data mapping, and OpenEHR Clinical Data Repository technical specifications and implementation, or a similar platform;

Core and Technical Competencies:

- Experience designing and implementing systems based upon OpenEHR;
- Demonstrable knowledge of current and emerging information technologies, information systems and technical architectures;
- Business process transformation experience;
- Knowledge of health information systems architectures, technologies and standards;
- Experience collaborating with partners in education/skills building/training, design, integrating and implementing OpenEHR in one large scale or at least three (3) smaller projects;
- Knowledge of other healthcare standards and terminologies and their role in a health ecosystem; examples are: HL7 v2.x/v3.x, HL7 FHIR, ICD-x, SNOWMED-CT, LOINC and IHE XDS.
- Excellent interpersonal skills with the ability to interact culturally, linguistically, and diplomatically with diverse internal and external individuals; Superior negotiation skills; demonstrated experience working in formal project management methodology; ability to manage concurrent projects that involve a broad range of stakeholders;
- Experience in procurement processes in public institutions;
- Experience working in an international context is highly desirable;
- Proficient in written, verbal communication and presentation skills with excellent technical writing skills in English

Opportunity Summary:

- Length of contract: Consultancy over 14 months
- Starting date: January 2020
- Location: Jamaica and/or place of residency
- Responsible person: IS4H Lead, MOHW

Requirements: You must be a citizen of one of the IDB's 48 member countries.

[1] Conservative estimates suggest if the United States healthcare system were interoperable, at least US$77 billion would be saved annually [37].