

## **TERMS OF REFERENCE (TOR)**

### **SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF QUEZON CITY HEALTH INFORMATION SYSTEM (QC HIS)**

#### **1. RATIONALE AND BRIEF BACKGROUND**

Currently the Health Department of Quezon City has 92 health facilities comprising of 66 health centers, 1 city employees clinic, 10 lying-in clinics, 6 animal bite treatment centers, 4 social hygiene clinics, 4 sundown clinics, and 1 molecular laboratory. Thus, the prospect of a Wellness Management (WM) system will facilitate the tracking of patient/client data for health service provision and wellness program supporting the City Ordinance No. SP-2070 s. 2011 known as "An Ordinance Providing for the Computerization of all Health Centers in Quezon City to Serve as an Indispensable Tool in providing Emergency Health Care Services to all Clients".

Likewise, the thrust for an improved and better Universal Health Care and with the integration of Philhealth requirements in transactions carried out in health facilities as well as the integrated system encompassing telemedicine and wellness management is bundled in this project like (1) public health care digital platform, (2) software and cloud infrastructure for Wellness Management implementation.

#### **2. PROJECT DESCRIPTION**

An Electronic Management Records System (EMRS) will be set-up, installed, configured, customized, and deployed to all identified health facilities of the city. The project provides an opportunity to improve the quality of health services provided to the citizens of the city through a secure, robust, and efficient health information system. In addition, it aims to improve patient experience by enabling City health facilities to enter and manage patient data, clinical information, and health services. Furthermore, the project would establish a culture of information among key local decision-makers through good quality and timely health information.

#### **3. PROJECT SCOPE OF WORK**

##### **3.1 Software**

The Service Provider must supply, deliver, install, customize, test, and commission a Health Information System (HIS) that allows for the perpetual use of the software for the Quezon City Health Department. The Platform will be utilized at designated health facilities with unlimited number of users.

The Health Information System (HIS) will be transferred to a Quezon City-owned IT infrastructure which may be a cloud and/or an on-premise environment at the end of the project.

##### **3.2 Implementation Services**

The Service Provider must provide a project team to initiate, manage and support the project in all phases of implementation.

##### **3.3 Training and User Manuals**

At least five (5) staff shall be trained in a period of one month or even less depending on the appreciation of the program.

The Service Provider is responsible for “Train-the-trainers” sessions to empower key staff members to train other users. Additional training sessions will be provided to users identified to maintain and administer the system. User manuals should be provided during and after the training.

#### **3.4 Technical Support**

Until the warranty period expires, the Service Provider must provide technical support to manage, maintain, diagnose, troubleshoot, and resolve issues, bugs and faults within the system.

#### **3.5 Managed Services for Cloud**

The Service Provider must provide complete management of client cloud resources, including setup, configuration, optimization, security, and maintenance. Cloud hosting and services will be included for one (1) year from the date of Go Live of the first health facility.

### **4. AREA OF COVERAGE**

The five (5) components of the QUEZON CITY HEALTH INFORMATION SYSTEM (QC HIS) project that are essential to the success of the project, as described in the Scope of Work, shall be instituted in the City Health Department of the Local Government of Quezon City. QUEZON CITY HEALTH INFORMATION SYSTEM (QC HIS) has default workflows that shall be customized to the compliance activities and operations of the City Health Department. These default workflows are set up for seamless routing of health information from all identified health facilities. These are the standard sets designed for the system. However, other services can be included in the system which will be included in the customization services of this project. The technical and functional features will all be established within the premises of the City Health Department.

### **5. PROJECT OBJECTIVES**

- 5.1** Implement a Wellness Management (WM) platform for the adoption and use of City health facilities
- 5.2** Enable City health facilities to enter and manage patient data, clinical information and health services using a health information system
- 5.3** Enable City health facilities to manage and exchange electronic health information in a more secure and efficient manner
- 5.4** Integrate the Platform to the existing QCitizen ID System
- 5.5** The Cloud based platform will be primarily focused on improving patient and data management at the basic level of healthcare in order to assist health managers in finding effective ways to diagnose and treat patients.
- 5.6** Digitalize patient level data by implementing a coding system that is aligned with existing national health care guidelines.
- 5.7** Alignments of the system to the existing public health report system

### **6. PROJECT STANDARDS AND REQUIREMENTS**

#### **6.1 BIDDERS REQUIRED STANDARDS/QUALIFICATIONS**

The following are the minimum qualifications and requirements for the Contractor or Bidder:

- Track Record
  - a. The service provider must be in the same industry as per their SEC or DTI filing for at least ten (10) years
  - b. The service provider should have been in operation for at least ten (10) years

- c. The service provider must have implemented a similar registration and web application project within the last three (3) years.
- d. The service provider should have implemented a public or private project with a single completed contract amounting to at least fifty percent (50%) of the ABC.
- Organization
  - e. Service providers must have Platinum status in PHILGEPS
  - f. The service provider must be a duly registered company with SEC or DTI filing
  - g. The service provider must be filed with SEC or DTI as an IT company with the purpose of software development and the supply of IT-related goods and services
  - h. The service provider must be duly registered under the National Privacy Commission
  - i. The service provider shall guarantee that the system shall abide with the DATA PRIVACY ACT OF 2012 to ensure that the personal information is protected.

## 6.2 SYSTEM SPECIFICATIONS

### Technical Specifications

- Cloud-based healthcare information system accessible through modern web browsers
- Built using microservices architecture and open source technologies, e.g. programming languages
- Deployable in open source server operating systems and open source databases
- Can be installed and deployed in cloud-based servers or services
- Comes with an integration engine capable of integrating via API or HL7
- Forms engine that can create and manage different clinical documentation and charting requirements
- Ensure compatibility with modern and updated web browsers (Mozilla Firefox, Microsoft Edge, Google Chrome)
- Can handle upload of images and document attachments to patient records
- Ability to create and maintain a unique ID per patient linked to the electronic medical record
- Ability to create and maintain a unique electronic medical record per patient
- Patient records can be linked to the City ID and City e-Services Account
- Can be accessed and used by multiple sites
- Ability to limit user access based on clinic or location
- Ability for authorized administrators, e.g. City Health and City Administrator, to access data from all health centers including patient demographics, population data and reports

### Features and Functionalities (see Annex A)

#### *Core Modules*

Patient Registration  
 Patient Profile Management  
 Allergies  
 Past Medical History  
 Visit History  
 Clinical Documentation  
 Clinical Forms  
 Online View of Clinical Documents

PDF Export of Clinical Documents  
E-Prescription  
Diagnostic Requests  
Referral Forms  
Break-the-Glass  
Results Data Entry and Management for Lab Tests  
Admin Portal to Manage:  
Roles and Permissions  
Reference Files and Master Lists  
Activity Feed

*Reporting Modules*

Clinic Management Reports  
Department of Health (DOH) Reports  
City Administration and Health Planning Reports

*PhilHealth Claims Management*

PhilHealth

*Auxiliary Modules*

Admission Module for Lying-in  
Bed Management for Lying-in  
Ambulatory/Outpatient Module  
Patient Worklist  
Order and Dispensing  
Inventory Management Module

## 6.3 MANAGED SERVICES

### Warranty, Maintenance, and Support

- Provide a one-year warranty after the user acceptance sign-off. During this period, the Service Provider is responsible for the following:
- Level 3 Technical & Platform Support
- Update patches
- Software bugs
- Make post-deployment changes to the system based on feedback from the user experience

## 7. PROJECT MANAGEMENT

### 7.1 PROJECT IMPLEMENTATION PLAN

The contractor/service provider/bidder shall provide a detailed project schedule and implementation plan to include clear milestones to be followed by both the technical group. The plan should include the following:

#### Project Kick-off

- Business Requirements and Data Gathering
- IT Infrastructure Setup
- Data Preparation and Migration
- Setup, Installation and Configuration
- Customization and Development

- System and User Acceptance Testing
- Train the Trainer User Trainings for end-user
- Train the Trainer User Trainings ITDD System Support
- Go Live Preparations
- Project Turnover
- Warranty and Support Services

## **7.2 PROFESSIONAL SERVICES**

The contractor/service provider/bidder shall have the critical technical knowledge that includes the following:

Overall project lead must have at least ten (10) years of implementation experience with local and international HIS and EMR platforms for hospitals and clinics, with expertise in Health Informatics, preferably with Post Graduate Degree such as MD and Masters Technical Project Lead must have at least ten (10) years of implementation experience with local and international HIS and EMR platforms for hospitals and clinics, preferably with experience in interoperability projects

Project team members must have experience with local and international HIS and EMR platforms for hospitals and clinics.

The contractor/service provider/bidder shall have the critical technical knowledge that includes the following:

- Project Manager (PM) must have at least ten (10) years of software design, development, and implementation experience with local and international HIS and EMR platforms for hospitals and clinics, with expertise in Health Informatics, preferably with Post Graduate Degree such as MD and Masters. PM must have knowledge and skills in project management, business and systems analysis and design, and systems implementation processes.
- Technical Project Lead (TPL) must have at least ten (10) years of software development and implementation experience with local and international HIS and EMR platforms for hospitals and clinics, preferably with experience in interoperability projects utilizing open source integration engines, and at least five (5) years of project management experience.
- Senior Developer (SD) must have at least five (5) years of software development experience in HIS and EMR platforms for hospitals and clinics. SD must have knowledge on both monolith and microservice architecture and have experience developing forms engine. SD preferably must have experience in healthcare system integration.
- Senior Systems Analyst (SSA) must have at least five (5) years of software development and implementation experience with local and international HIS and EMR platforms for hospitals and clinics. SSA must possess above-average knowledge and skills in business and systems analysis, UI/UX design, database design, and technical documentation writing. SSA must also be thoroughly familiar with UI/UX design tools, and project and product management software. SSA preferably must be a graduate of a health-related course or related field.
- Junior Systems Analyst (JSA) must have at least three (3) years of software development and implementation experience with local and international HIS and EMR platforms for hospitals and clinics. SSA must possess above-average knowledge and skills in business and systems analysis, UI/UX design, database design, and technical documentation writing. SSA must also be thoroughly familiar with UI/UX design tools, and technical documentation software. JSA preferably must be a graduate of a health-related course or related field.
- Quality Assurance Engineer (QAE) must have at least five (5) years of quality assurance and control experience with HIS and EMR platforms, with above-average knowledge and skills in

use case modeling and documentation, and functional and automated testing. QAE must have familiarity with business and systems analysis processes and must be thoroughly familiar with software tools for business modeling, wireframing, software versioning and testing. QAE must also possess knowledge with programming languages including, but not limited to, HTML, CSS, Javascript, PHP, MySQL, and JSON. QAE preferably must be a graduate of a health-related course or related field.

- Healthcare IT Systems Support Specialist must have at least three (3) years experience in providing online and onsite technical support for EMR systems. He/she must have knowledge of helpdesk ticketing systems. He/she have knowledge on configuration and maintenance of healthcare IT systems. He/she must also possess knowledge with programming languages including, but not limited to, HTML, CSS, Javascript, PHP and MySQL.

#### **8. PROJECT DURATION AND DELIVERY PERIOD**

The delivery period is within six (6) months upon issuance of the Notice to Proceed and with the duration of one year or earlier depending upon the final acceptance of the project.

#### **9. APPROVED BUDGET FOR CONTRACT**

The Local Government of Quezon City intends to apply the sum of **Thirty Million Pesos (Php30,000,000.00)**, being the Approved Budget for the Contract (ABC) for the payment for the completion of the **QUEZON CITY HEALTH INFORMATION SYSTEM (QC HIS)**. Bids and Proposals received in excess of the ABC shall be automatically rejected at opening of the financial proposals.

#### **COST DERIVATION**

Software:

Project Management and Implementation Services:

Managed Services for Cloud

TOTAL:

#### **10. BASIS FOR PAYMENT**

The terms of payment shall be based on the following completed deliverables:

- Upon submission of the Project Implementation Plan, the procuring entity will release fifteen percent (15%) of the total winning bid amount to the service provider.
- Upon delivery and configuration of IT infrastructure, and upon provisioning of user accounts of QUEZON CITY HEALTH INFORMATION SYSTEM (QC HIS), the procuring entity will release seventy percent (70%) of the total winning bid amount to the service provider. This includes:
  - Certificate of Provisioning by authorized personnel
  - Certificate of Installation by authorized personnel
- Upon deployment to production, and completion of training and handover, the procuring entity will release fourteen percent (14%) of the total winning bid amount to the service provider. This includes:
  - Certificate of deployment to production
  - User manuals and training certificates
- One percent (1%) of the total winning bid amount will be released one (1) year after the final acceptance of the system as performance security.



## 12. PENALTIES FOR BREACH OF CONTRACT

Failure to deliver the services according to standards and requirements set by the City shall constitute an offense and shall subject the Contractor to penalties and/or liquidated damages pursuant to RA 9184 and its revised Implementing Rules and Regulations.

## 13. CANCELLATION OR TERMINATION OF CONTRACT

Should there be any dispute, controversy, or difference between the parties arising out of this TOR, the parties herein shall exert efforts to amicably settle such dispute or difference. However, if any dispute, controversy, or difference cannot be resolved by them amicably to the mutual satisfaction of parties, then the matter may be submitted for arbitration in accordance with existing laws, without prejudice for the aggrieved party to seek redress before a court of competent jurisdiction.

The guidelines contained in RA 9184 and its revised IRR shall be followed in the termination of any service contract. In the event the City terminated the contract due to default insolvency, or for cause, it may enter into negotiated procurement pursuant to RA 9184 and its IRR.

Reviewed and Endorsed by:



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## **Annex A: Features and Functionalities**

- 1. Patient Registration**

Provides a quick and efficient way of registering a patient, capturing important personal details, such as demographics and emergency contacts, for the purpose of creating the patient's unique patient ID and electronic medical record.
- 2. Admission Module for Lying-In**

Designed to handle the fast and efficient process of admissions required for the Lying-In Clinic.
- 3. Bed Management for Lying-In**

This module allows users to monitor and manage the bed information, such as the number of available and occupied beds.
- 4. Patient Profile Management**
  - 4.1 Allergies**

Allows users to view, encode, and edit a list of allergies of the patient, categorized into medication, food, and environmental allergies.
  - 4.2 Past Medical History**

Provides a module for users to view, encode, and edit the medical history of the patient (e.g. past hospitalizations, immunization)
  - 4.3 Visit History**

Displays a list of all encounters of the patient in any health care facility within the network.
- 5. Clinical Documentation**
  - 5.1 Clinical Forms**

Provides a way for users to create, view, edit, and print the clinical forms of the different services and programs of the health care facility.
  - 5.2 HTML Quick View of Clinical Documents**

Allows the user to quickly open and view the clinical forms from the list of existing patient clinical documents in the electronic medical record.
  - 5.3 PDF View of Clinical Documents**

Allows the user to view a pdf version of the clinical form that can be printed out from the system.
  - 5.4 E-Prescription**

Allows the user to create, inside the system, a prescription of medications for the patient, that can be printed out in physical paper.
  - 5.5 Diagnostic Requests**

Allows the user to create, inside the system, requests for diagnostic tests, that can be printed out in physical paper.
  - 5.6 Referral Forms**

Allows the user to create, inside the system, referrals which can be sent to other health care facilities within the network.
- 6. Ambulatory/Outpatient Module**
  - 6.1 Patient Worklist**

Users shall be able to view a list of all scheduled and walk-in patients in a particular health care center. The worklist shall include relevant information such as demographic information, as well as other specific information relevant to the clinical encounter.
- 7. Break-the-Glass**

An alert in the electronic medical record that pops up when a user tries to access patient records that he has not been given authorized access.



- 8. Order and Dispensing**  
Provides a way to select and dispense medications required for a patient.
- 9. Inventory Management**  
Module to track the medicines sent to and received by the Health Center, the dispensing of the medicine to citizens, and to generate daily reports.
- 10. Results Data Entry and Management for Lab Tests**  
Provides a way for laboratory technicians to be able to encode and finalize laboratory results, which are then electronically sent and viewable by the health care facility users in the patient's electronic medical record.
- 11. Appointment and Scheduling**  
This module is designed to manage the scheduling of appointments of patients for consults, procedures, and other disease management activities.
- 12. Clinic and Administrative Reports**  
Provides admin users a module where they can generate clinical and administrative reports that can be printed out or exported to CSV file format.
- 13. PhilHealth**  
Provides users a way to create documentation necessary for filing PhilHealth claims
- 14. Admin Portal to manage:**
  - 14.1 Roles and Permissions**  
Provides admin users a way to manage the role-based access of users to the different modules of the electronic medical record.
  - 14.2 Reference Files and Master Lists**  
This module allows admin users to manage and maintain the various Reference and Master Data used by the different modules of the system.
- 15. Activity Feed**  
Displays a chronological list of activities performed by a user related to the electronic medical record (e.g. obtaining access to patient records, view patient result).