# Request for Application #2020-048

## Vietnam Health Information Systems for HIV

### I. Summary of Deadlines

The expected schedule for this application is outlined in the following table. Note that PATH reserves the right to modify this schedule as needed. All parties will be notified simultaneously of any changes through a modification posted on PATH/Digital Square's website.

| | |
|---|---|
| Release of Request for Application | September 10, 2020 |
| Informational Webinar to explain RfA process and terms – please register here:<br><br>https://bit.ly/2RfjKk8 | September 15, 2020 at 10 pm EDT |
| Submission of fact-finding questions due | September 18, 2020 at 5pm EDT |
| Response to all submitted fact-finding questions posted to PATH/Digital Square's website | September 24, 2020 |
| **Applications due** | October 4, 2020 at 5pm EDT |
| Applicants notified of decision | October 23, 2020 |

### II. PATH Statement of Business

PATH is the leader in global health innovation. An international nonprofit organization, we save lives and improve health, especially among women and children. We accelerate innovation across five platforms—vaccines, drugs, diagnostics, devices, and system and service innovations—that harness our entrepreneurial insight, scientific and public health expertise, and passion for health equity. By mobilizing partners around the world, we take innovation to scale, working alongside countries primarily in Africa and Asia to tackle their greatest health needs. Together, we deliver measurable results that disrupt the cycle of poor health. Learn more at www.path.org.

# III. Project Background and Proposed Timeline

## A. Project Background

Vietnam has made impressive progress over the past two decades in reducing the number of new HIV infections and narrowing in on 95-95-95 targets. However, with a dynamic epidemic and shifts in populations most affected by HIV, provincial health leaders need to be equipped with real time data to be able to rapidly respond to disease outbreaks, gaps in service coverage or in poor quality of service delivery. There are a number of fragmented digital or paper-based data systems used by different providers that have been created to capture discrete aspects of a public health response to HIV. These include those that focus on reach, HIV testing including recency, pre-exposure prophylaxis (PrEP), HIV treatment, TB care, social health insurance claims, supply chain, and community feedback/quality of service measurement. This leads to a lack of critical HIV information to inform and monitor program quality and to enable a sustainable national data tracking system. A focused effort is needed to link these data sources together and present them in a way that is clear and actionable to provincial HIV leaders.

PATH/Digital Square brings the leading digital health experts together to partner with countries around the world strengthening digital health systems. In pursuit of our Mission: ***connect health leaders with the resources necessary for digital transformation***, PATH/Digital Square offers a new way to invest in digital health—providing a space where countries and members of the global community can gather to think big and do good, together. By convening government officials, technological innovators, donor and implementation partners, and others across borders and boundaries in the PATH/Digital Square, we can grow possibility into reality by focusing on our common goal: **connecting the world for better health**.

PATH/Digital Square's work supports three result areas:

1. **Alignment and Co-investment:** Digital Square helps to identify promising investment opportunities and provides operational support to streamline procurement.
2. **Global goods:** Digital Square promotes the development, adoption, and reuse of global goods, and helps increase their availability, adaptability, and maturity.
3. **Regional and Country Systems:** Digital Square helps elevate country priorities and strengthen regional and national capacity.

In alignment with PATH/Digital Square's mission, USAID has asked PATH/Digital Square to support a holistic, long-term vision for Vietnam's HIV program quality management that captures the discrete aspects of a sustained public health response to HIV, inclusive of program quality monitoring, and links these data sources together in a user-friendly and actionable form, thus providing an overarching view of key populations (KP) and partners of KP that are at risk of HIV.

The long-term goal is to enable a standards-based, interoperable digital health architecture that supports a provincial monitoring dashboard, allowing health managers to track service quality at site, provincial and national levels among populations affected by HIV.

Through this Request for Applications (RfA), PATH/Digital Square seeks partnership with a subrecipient that can lay a foundation for this long-term goal and develop the following systems described further in this RfA:

- Design and develop a **"minimum viable product" or MVP[1] version of the interoperable digital health architecture and provincial monitoring dashboard** with a focus on program quality monitoring (PQM) indicators with service data from Ho Chi Minh City (HCMC).
- Design and develop a **community health information system (HIS)** that will be an "exemplar" or serve as a reference platform for tracking clients across the community reach-test-PrEP cascade that incorporates systematic client feedback and user-friendly data visualization that enables continuous quality improvement. This data will feed into the provincial monitoring dashboard.

The project is currently conducting a systems assessment survey of the digital health systems and tools that are used in the areas of the public health response to HIV as described above. The purpose is to understand which data sources and health information systems are available and can be used to measure the quality of HIV programs. In parallel PATH/Digital Square and USAID are conducting human-centered design sessions with community-based organizations and dashboard co-creation sessions to gather requirements and design with the user, per the Principles for Digital Development. Based on the results of these efforts, PATH/Digital Square will define and prioritize the requirements and desired functionality for the community HIS and the dashboard system. Decisions can then be made on the design, system architecture, data standards, and specific technologies, tools and platforms that will best meet the requirements and support the desired functionality. Ideally the applicant will be contracted in time to participate in the technical design and architecture decisions.

This provincial monitoring dashboard will provide health managers with actionable data for better decision-making. The goal of the MVP version is to prove the value of the dashboard and the interoperable digital health architecture to provincial and national health managers and gain buy-in to pursue the holistic, longer-term vision for the system described above

In addition to overseeing the applicant selected through this RfA, PATH/Digital Square will function as the health information systems (HIS) partner lead to coordinate between complementary systems development efforts by several HIS partners and with the partners who manage systems that will serve as source data systems for the dashboard. PATH/Digital Square will provide coordination support, including engaging with key stakeholders such as HCMC health officials to ensure their requirements are met. As Ho Chi Minh City's Smart City project develops, PATH/Digital Square will keep abreast of opportunities to leverage the Smart City initiative for the benefit of the HCMC health sector.

## B. Proposed Project Timeline

PATH anticipates that the implementation period will be for approximately **8 months, from November 2020 to June 2021** with possible extension contingent upon availability of funds and satisfactory performance. As part of PATH/Digital Square's due diligence, we will conduct pre-award evaluations of all shortlisted candidates. We will use our recipient pre-award survey, informed by USAID's non-US organization pre-award survey (NUPAS) and other industry-wide standards, and customized for PATH/Digital Square. In addition to project-specific deliverables based on individual scopes of work, PATH will require applicants to provide, at minimum, quarterly narratives and financial reports to support their work.

[1]"A minimum viable product (MVP) is a version of a product with just enough features to satisfy early customers and provide feedback for future product development." https://en.wikipedia.org/wiki/Minimum_viable_product.

# IV. Scope of Work and Deliverables

The work to be completed is grouped into the following workstreams as well as a set of cross-cutting activities that apply to all workstreams:

1. MVP of the interoperable digital health system and provincial monitoring dashboard
2. Community HIS.
3. Capacity Strengthening around data input, access, and use within the HIS database and dashboards.
4. Quality Assurance (QA) and Testing.
5. Technical, User and Business Documentation.
6. Other Cross-cutting Requirements and Activities.

## *1. Workstream 1: MVP of the interoperable digital health system and provincial monitoring dashboard*

The selected applicant will participate in the design and lead the development of an MVP version of an interoperable digital health architecture, functions, and infrastructure that facilitates flow of information from multiple systems to produce the MVP provincial management dashboard with a focus on core program quality management indicators. The Applicant will build the core data processing platform and develop or adapt software to integrate HCMC data, aggregate, summarize, and transform the data to view the indicators in a dashboard view.

At this writing it is expected that the data sources may be comprised of a mixture of Excel files and relational database systems. For the MVP, the requirement is to refresh the data once per day so that the data in the dashboards is current up to the prior day's data.

The Applicant is expected to participate in some User Advisory Group meetings to solicit feedback from users. The applicant will regularly participate in Technical Working Group (TWG) meetings. The TWG members will include the HCMC digital health representative (likely a co-chair), system owners and others involved in HIS for HIV or HIV data use. The TWG will work at a more technical level to specify the detailed functional and technical requirements including the operational, security, performance, legal and regulatory requirements and the design and architecture implications. The TWG will make technical decisions related to the data and interoperability standards to adopt and the architecture and HIS governance and policy framework.

Under PATH/Digital Square's direction, the selected Applicant will design the interoperable digital health architecture, functions, infrastructure, and dashboards, consisting of the following activities:

- **Define the interoperability framework and standards** (e.g. OpenHIE) to connect the systems.
- **Review of data ingestion protocols and determine the data standards** (such as HL7 (v2 or v3) or FHIR, ICD 10, CPT4, SNOMED, LOINC) for mapping data sources to the interoperability layer.
- **Obtain Access to Data Sources:** Work with the associated data and HIS owners/providers to negotiate access to the data.
- **Map the Data:**
    - Map the data from the source systems to the interoperability framework's data model. The mapping must align to the HCMC health managers' views of the data and be validated to be "clinically true."
    - Engage with the HCMC health managers, representative providers and stakeholders to ensure that data elements are both syntactically and semantically correct.

- **Design the database architecture** (conceptual data model, database schema, data standards).
- **Design the administration and management application**. An administration interface will be needed to allow a technical administrator to administer and configure the interoperability layer, such as adding users and connecting new systems.
- **Specify the system architecture and infrastructure required** (hosting platform, capacity, network connectivity) to meet the requirements.
- **Determine the dashboard and data visualization tools** to be used.
- **Build, test, and launch the MVP of the interoperable digital health system and provincial monitoring dashboard.** This will include software development, adaptation, and data integration of the data from HCMC. The dashboard functionality must be ready to demo.

***Deliverables for Workstream 1:*** MVP of the interoperable digital health system and provincial monitoring dashboard built, tested, and launched. To be considered an MVP, the system must have ingested HCMC data and have dashboards developed and demonstrably functioning that focus on core program quality management indicators.

## *2. Workstream 2: Community HIS*

One of the goals is to develop a simple but unified way of tracking clients of HIV programs across the community reach-test-prevention or treatment cascades that incorporates systematic client feedback and user-friendly data visualization that enables continuous quality improvement. The community HIS should enable a better client experience, help community providers/health workers and facility health workers provide better service and do their jobs more efficiently, and ultimately to improve data quality, completeness, timeliness, and accuracy.

The clients who will be served include men who have sex with men (MSM), people who inject drugs (PWID), transgender populations (TG), female sex workers (FSW), partners of key populations (PP), and people living with HIV (PLHIV). The end-users of the community HIS will include peer providers, community providers, community outreach workers, community-based supporters, facility health workers, facility managers, data entry staff, and data managers. District, provincial, and national health managers and project and funder staff will be users of the dashboard and reporting functionality of the system.

During this eight-month scope of work, the community HIS will be piloted with selected community-based organization(s) (CBOs), selected private and public clinic(s), and a selected implementing partner in HCMC.

As stated above, requirements are currently being gathered with community-based organizations, but we anticipate the following:

Functional Requirements:

- Both a web-based and mobile application interface with the following modules:
    - User friendly, and simple yet nicely designed interface for outreach workers (from HIV community-based organizations) to input key data, from the initial point of contact by the outreach worker to follow-up contact with key populations. This will include demographics variables (collected on first contact only), HIV risk factors using a standardized HIV risk assessment tool, HIV testing history, HIV prevention use history, referrals made and results of those referrals for each unique client reached.

    - Connect with HIV testing (by community providers or private- and public-sector health workers) and the results of HIV testing with diversified HIV-testing services including self-testing and lay-testing.
    - Connect HIV-negative clients to PrEP, nPEP, and/or opioid substitution therapy (OST) for people who inject opioids.
    - Online service registration/booking using a unique code/voucher to enable follow-up of the service booking in through to actual service uptake (HIV testing, PrEP, nPEP, or ART).
    - Service Quality Survey.
- Generate a unique code for reach client and include a function to de-duplicate double entries for the same person.
- Able to work both online and offline (with ability to sync data with the central system once connectivity is available).
- Dashboards and reports.
- Able to send data to the provincial monitoring dashboard systems.

Performance Requirements:

- Estimate that the community HIS will reach 10,000-20,000 key population (KP) members per year (at least once but some clients may be contacted by an outreach worker multiple times during a year) with data from testing, prevention, and treatment of key populations affected by HIV.

Operational Requirements:

- The hosting approach (on premise, off premise, cloud) is to be determined. The Applicant is welcome to recommend an approach.
- Longer term as data volumes grow, the system may be moved to be hosted at the Quang Trung Data Center (https://www.qtsc.com.vn/en).

***Deliverables for Workstream 2:*** A simple unified web and mobile application that tracks clients across the community reach-test-PrEP cascade that incorporates systematic client feedback and user-friendly data visualization that enables continuous quality improvement.

### *3. Workstream 3: Capacity Strengthening around data input, access, and use within the community HIS and the provincial monitoring dashboard system*

The Applicant will assist PATH/Digital Square to build digital capacity for HCMC health staff around data input, access, and use within the community HIS and the provincial monitoring dashboard system. Several areas need to be addressed:

- Data entry must conform to the data standards adopted for the community HIS and the provincial monitoring dashboard system.
- Guidelines and standard operating procedures must be developed that will govern the collection and use of sensitive data such as personally identifiable information (PII) and ensures data security while data are in transit, with emphasis on minimizing the use and collection of PII.
- Data sharing/use agreements need to be established with the respective system users and owners that will be providing data for the community HIS and the provincial monitoring dashboard system.

- Processes need to be put in place to ensure data completeness and accuracy. This may require the creation of data audit reports and supplemental training provided to staff on how to take corrective action to improve data accuracy based on the data audit reports.

### *Deliverables for Workstream 3:*

1. Data entry must conform to the data standards adopted for the community HIS and the provincial monitoring dashboard system.
2. Guidelines and standard operating procedures that will govern the collection and use of sensitive data, such as personally identifiable information (PII), and ensures data security while data are in transit, with emphasis on minimizing the use and collection of PII.
3. Data sharing/use agreements established with the respective system users and owners that will be providing data for the community HIS and the provincial monitoring dashboard system.
4. Processes developed and in operation to ensure data completeness and accuracy. This may require the creation of data audit reports and supplemental training provided to staff on how to take corrective action to improve data accuracy based on the data audit reports.

## *4. Workstream 4: Quality Assurance (QA) and Testing*

All work undertaken that is of a technical nature must be accompanied with a quality assurance plan, including system integration and end-to-end testing. Applicants are required to unpack the approach they envisage applying to QA for the work proposed and describe the approach in their response to this RfA. Tools and software used or developed must provide evidence of quality. Testing must include tests that confirm that the system operates correctly as well as handles error conditions gracefully.

Applicants are encouraged to approach the implementation of solutions from a validation and verification perspective and will be required to outline their approach to testing, validation, and verification in their proposal. The successful applicant will be required to provide a documented QA and testing strategy and plan that outlines the QA approach and high-level testing scenarios that will be undertaken. Test case development can proceed once the QA strategy and plan is approved. Applicants are encouraged to leverage, use, and contribute towards industry standards of testing, QA, and development. This includes using tools/approaches such as automated testing frameworks, regression testing, smoke testing, functional testing, integration testing, data-quality tests etc.

- **Basic Requirements**
    - Develop a test strategy or approach tailored to the community HIS and the provincial monitoring dashboard system and its intended use by the HCMC Department of Health. The test strategy must at a minimum describe the particular QA methodology that will be used (e.g., black box vs. white box testing), the testing resources required (e.g., issue tracker system, QA team structure/roles), and the method for measuring success/failure of the test.
    - Develop and document test plans, test cases, and test scripts as applicable with the test strategy.
    - Set up separate development and testing environments if the applicant does not have existing environments suitable for this purpose. The testing environment should be a close mirror of the anticipated production environment configuration as much as possible within the given budget and timeline.
    - Use both automated testing tools and manual testing tools as appropriate.
    - Work with developers to create a test schedule timed with the development schedule.
    - Conduct and rerun tests as scheduled, and as new/fixed code or systems become ready to test.
    - Track issues in an issue-tracking system that allows issues to be prioritized and categorized by administrator-configurable categories. The system must capture

enough detail to allow development team leads/managers to manage the workload of their team as well as enable summary views for high-level managers, PATH/Digital Square, and stakeholders such as USAID and the HCMC Department of Health.
    - The Applicant must complete these Basic Requirements to successfully QA and test the community HIS and the provincial monitoring dashboard system.

- **System Integration Testing**
    - Work with partners and healthcare organizations to test each point of integration between components and iterate the tests until issues are resolved.
    - Testing must include tests that confirm that the system operates correctly as well as handles error conditions gracefully.
    - The use of automated and continuous integration testing, where appropriate, is strongly encouraged.

- **End-to-End Testing**
    - Where applicable, work with partners and healthcare organizations to test the entire system by running the entire sequence of data processing from beginning to end, from the data source all the way to producing a dashboard or visualization, without failure and with accurate data results.

- **Performance Testing**
    - Determine the types of performance testing that should be conducted, in consultation with PATH/Digital Square, HCMC Department of Health, partners, and healthcare organizations as necessary. The types of performance tests may include one or more of the following (this is not an exhaustive list):
        - Performance testing–to test that the system meets the performance requirements (e.g., time to process a specified volume of data, time for a dashboard to render/generate charts based on selected criteria).
        - Stress testing–to test at what point the system breaks or performance is unacceptable.
        - Load testing–to test if the system can handle a certain expected continuous processing load.
    - Share test results and work with developers to identify and recommend parts of the community HIS and the provincial monitoring dashboard system (e.g., code, scripts, database structures, hardware/hosting/system architecture and/or configuration) that may require changes or optimization. The project will work with the HCMC Department of Health, USAID, and PATH/Digital Square to decide whether changes are required to remedy the issues and the cost/benefit or tradeoffs of implementing or not implementing the changes.

- **Security Testing**

  The applicant needs to be aware of the security and privacy needs of the system and as such should not expose any source system to undue risk. A documented review of the security and privacy of the systems and data exchanges that will comprise the architecture for the community HIS and the provincial monitoring dashboard system must be provided as a deliverable. The applicant will be required to engage with organizations and their source systems and unpack the data security and privacy requirements and access protocols for the source systems.

    - Work with the HCMC Department of Health to develop and document security requirements.
    - Define the security testing strategy.

- Perform the security testing of the community HIS and the provincial monitoring dashboard system.
- Provide guidelines/policy for implementers to follow in integration with the community HIS and the provincial monitoring dashboard system.
- Security testing must include a review of security measures in place at multiple levels of the technology stack and the policies, procedures and education/training to address human factors-related sources for insecure systems.
- Share test results and work with developers to identify and recommend parts of the community HIS and the provincial monitoring dashboard system (e.g., code, scripts, database structures, hardware/hosting/system configuration) that may require optimization.

- **Release Management**
  - Develop a release plan that includes the release management process to manage the release of code from development to a staging/test/training environment and to the production environment.
  - Develop routine procedures and scripts that will package code and related configuration files that have passed QA and release it onto the production environment, ensuring that the push to production has not introduced errors into the production environment.
  - Develop a release schedule in collaboration with the software development team, HCMC Department of Health, and other relevant stakeholders.

- **QA and Testing Documentation**
  - In addition to the documentation described above, all tests must capture results in a summary-level report for higher level managers, including stakeholders such as the HCMC Department of Health and USAID, to provide an overview of the progress made towards assuring the quality of the community HIS and the provincial monitoring dashboard. The summary-level reports or dashboards must provide an overall view of progress, e.g., number of open vs. closed issues, and views by issue category and other selection criteria.
  - Detailed bug or issue reports must be available on an ad-hoc basis.
  - Develop a set of release notes for each release.

- **Training**
  - Create a training environment with realistic data to use for training. This likely will be on the test/staging environment.
  - Train HCMC Department of Health software or IT managers, developers and administrators on the QA strategy, processes, tools and reports used to validate the community HIS and the provincial monitoring dashboard.
  - Develop training materials such as PowerPoint slides, checklists, or recorded demos as needed to support the training effort.

### *Deliverables for Workstream 4:*

1. A documented overall QA and testing strategy and plan that outlines the QA approach and high-level testing scenarios.
2. Complete the QA Basic Requirements as described on page 7 for the successful QA and test of the community HIS and the provincial monitoring dashboard system.
3. Test strategies, test plans, test cases, and test scripts for each type of testing.
4. Set up of a repeatable performance testing framework that will be run as part of the development-test-release process of the community HIS and the provincial monitoring

dashboard system, including a development environment, a staging/test/training environment, and an issue tracker.
5. Testing process designed to be repeatable and which forms part of the development cycle.
6. A final summary report/dashboard of the total open vs. closed issue list that includes a summary description of the state of the community HIS and the provincial monitoring dashboard system at the completion of this scope of work.
7. A final performance-testing report summarizing the results, corrective actions taken, recommendations, and any outstanding risks.
8. A security requirements, policy, and guidelines document based on the results of a review of the security and privacy of the community HIS and the provincial monitoring dashboard system, and recommended security enhancements.
9. A final security testing report summarizing the results, corrective actions taken, recommendations, and any outstanding risks.
10. A final set of release notes with the issue log of open issues.
11. A release plan document describing the release management process, procedures, and scripts.
12. A release schedule.
13. Training materials covering the QA strategy, processes, tools and reports, and training of HCMC Department of Health.

## 5. *Workstream 5: Technical, User and Business Documentation*

PATH/Digital Square will provide an initial prioritized requirements definition document as stated in "Part A. Project Background" for the community HIS and the provincial monitoring dashboard system as a basis for the selected applicant to update and maintain. However, this is likely to require further development. Applicants will be required to review existing documentation and provide a full set of technical documentation for any of the solutions designed and developed. This is inclusive of all business cases, requirements documentation (functional and non-functional), technical design documentation, basic product/solution hardware requirements and operational platform requirements, performance and scalability designs and tests. All technical work must be outlined in requirements documents (functional and non-functional) prior to development or undertaking work. These support the development of appropriate testing and quality assurance approaches and documents the development of acceptance criteria.

Any systems interacting with other systems or tools that exchange data must provide a documentation set that outlines the following in order to facilitate integration into an enterprise setting that manages sensitive data:

1. The API definition and protocols and data exchange formats.
2. The network and data exchange protocols, ports, and end points.
3. A list of data that will be exchanged on each of the end points.
4. A full list of expected error codes and error messages that are associated with the exchange.

In addition to technical documentation, each system is to be supported with the appropriate operations documentation, namely installation and configuration documentation as well as a documented set of installation notes with accompanying check points to validate that all services/tools and leveraged services are installed and operating as expected.

Applicants will be expected to develop training, support and technical operation material that will facilitate the ability of technical users and administrators at the HCMC Department of Health to troubleshoot and operate the community HIS and the provincial monitoring dashboard system, processes and procedures as required. This is inclusive of administrator, technical-user and end-user

guides and ensuring that implementation teams have the appropriate information to leverage to support implementation and user training.

By March 31, 2021, applicants should provide a draft service level agreement (SLA) specifying the operational support the applicant will be able to provide for the community HIS and the provincial monitoring dashboard system, to be discussed and agreed upon with the HCMC Department of Health.

Documentation must be updated and refined to ensure that the system is documented in its current state and as it progresses through the course of the contract. The Applicant is expected to contribute to quarterly status/progress reports required by the donor, meeting minutes, schedule updates and related project management documentation.

### *Deliverables for Workstream 5:*

1. A document management plan which should include the creation of a common document repository accessible by the HCMC Department of Health staff, organizational structure/layout for the repository, and any financial, technology and human resources needed to manage the document repository.
2. Documentation created, updated, and maintained throughout the period of performance for the community HIS and the provincial monitoring dashboard system, inclusive of, but not limited to:
    a. Business/use cases and solution requirements (functional and non-functional).
    b. Architectural and technical design documentation.
    c. Hardware, operational, and performance requirements.
    d. Installation and configuration documentation as well as a documented set of installation notes with accompanying check points to validate that all services/tools and leveraged services are installed and operating as expected.
    e. Training, support, and technical operations material that will support implementation and user training, facilitate the ability of technical users and administrators at the HCMC Department of Health to troubleshoot and operate the different community HIS and the provincial monitoring dashboard system technologies, processes and procedures as required. This includes administrator, technical user, and end user guides.
3. Technical specification and interface documentation that outlines the following to facilitate integration into an enterprise setting that manages sensitive data:
    a. The API definition and protocols, data exchange formats.
    b. The network and data exchange protocols, ports, end points.
    c. A list of data that will be exchanged on each of the end points.
    d. A full list of expected error codes and error messages that are associated with the exchange.
4. By March 31, 2021, a draft service level agreement (SLA) specifying the operational support the applicant will be able to provide for the community HIS and the provincial monitoring dashboard system, to be discussed and agreed upon with the HCMC Department of Health.

## 6. Other Cross-cutting Requirements and Activities

Throughout the project there will be activities and requirements that are cross-cutting over all workstreams. They are outlined below:

**Software Licensing**

All code developed under this project will be subject to PATH's global access clause and will be required to, as appropriate, be made available under an open source license (OSI approved). The contractor shall not use proprietary technologies without approval by PATH. Should proprietary tools be proposed, it must be clearly stated in the proposal and include a detailed breakdown of the costs (initial and yearly costs / appropriate costing models).

PATH's preference is for the use of or building upon existing global goods and or technologies that are acting as global goods and that map well to Vietnam's needs. For more information about global goods, see the Global Goods Guidebook. The Global Goods Guidebook showcases emergent and established global goods that are approved for investment through Digital Square. By better coordinating the development of digital health global goods, such as those presented in the guidebook, stakeholders involved in digital health can reduce duplication and ensure that platforms are not only more aligned with national priorities, but that they strengthen health systems.

**Client Engagement and Ho Chi Minh City Presence**

There is a strong preference for the Applicant to have a presence in Ho Chi Minh City and/or have the ability to attend frequent on-site meetings in Ho Chi Minh City to meet with local government partners and community-based organizations. Applicants will be called upon occasionally to demonstrate the systems or share updates with key stakeholders based in Hanoi and the United States, likely via virtual communication methods.

**Security and privacy**:

All systems must protect patient confidentiality in compliance with government regulations such as Circular No. 54/2017/TT-BYT dated December 29, 2017 of the Ministry of Health on criteria for assessment of information technology application at health facilities of Vietnam, and any related health data privacy policies specified by the Ministry of Health. As a system designed to analyze patient level data, it is imperative that all technical solutions and approaches strongly address the concerns of security and privacy in the development of solutions. Any solution that is engaging with sensitive data and information (such as, but not limited to, data exchange, patient data storage, data manipulation, etc.), must provide adequate evidence of addressing security and privacy concerns. Forms of evidence may include professional certifications and evaluations, industry guides to setup and management, policies and approaches, functionality to manage user, and administrative access and privileges. Each system development effort must address the security issues relevant to its scope of work and deliver a security and privacy plan at the beginning of the project, as well as a security assessment report upon completion of work. Both the security plan and assessment report must be approved by PATH/Digital Square prior to acceptance of the system.

**Support**

Throughout this scope of work, applicants will be required to provide some level of support appropriate to the scope and mandate of each workstream. For clarity, this RfA leverages the broad definitions of the ITIL support levels and outlines a summary below. A more complete description can be found in the Appendix.

| IT Support Level | Function |
|---|---|
| **Tier 1** | Basic help desk resolution and service desk delivery and initial end user contact. |
| **Tier 2** | In-depth technical support |
| **Tier 3** | Expert product and service support |

# V. Application Requirements - Cost

PATH requests applicants submit a proposal addressing all workstream that they will implement within approximately eight (8) months and provide a detailed timeline and budget as instructed below. Only one applicant will be chosen. Neither PATH nor USAID is making funding commitments currently for future phases of work. Should more funds become available, PATH, USAID, and the selected applicant (based on satisfactory performance) will discuss a potential next phase of this work.

Applicants should provide a detailed explanation of costing and describe the reasonableness of each proposed cost in the budget narrative.

PATH/Digital Square will evaluate the quoted prices and hourly rates. No analysis will be performed on quotes determined as non-responsive or if the technical quote is determined to be technically unacceptable. The price/business evaluation will be conducted in accordance with the quoted utility-based solution and proposed labor categories, their rates, and Evaluation Matrix. PATH/Digital Square will conduct an analysis to determine if all quoted prices are reasonable. This evaluation is conducted with the expectation of adequate price competition and will rely heavily on market forces to determine whether proposed prices are fair and reasonable. The comparison of proposed prices in response to this solicitation is the preferred and intended price analysis technique.

PATH/Digital Square will also compare the proposed prices to historical prices paid for the same or similar services and the independent government cost estimate. Other techniques and procedures may be used to ensure quoted prices are fair and reasonable. A cost realism analysis will be performed to determine whether the quoted Level of Effort is realistic for the work to be performed, reflects a clear understanding of the requirements and is consistent with the unique methods of performance set forth in the company's technical quote.

## C. Required Elements

The Cost Application must include a budget narrative, detailing the cost and cost basis applied in generating the application. The Cost Application must also include a detailed budget that is itemized along the cost categories defined below. This detailed budget should be submitted in an unlocked Excel spreadsheet and must include the following information:

1. Personnel. At minimum, the budget should detail:
    a. All proposed staff/positions with daily rates.
    b. Total number of days in total level of effort according to key staff.
2. Itemization of all other costs (e.g., agency costs, service tax, administrative costs, supplies, etc.).

3. Estimated schedule of other anticipated expenses (travel, subawardee resources, supplies, outside resources, etc.).
4. Details of all subcontracted work including proposed consultants as well as proposed subawardees.

The Cost Application shall begin with a summary budget detailing costs in the following categories:

| **Description** | **Total Cost (USD)** |
|---|---|
| Personnel | |
| Fringe Benefits | |
| Travel | |
| Equipment | |
| Supplies | |
| Other Direct Costs | |
| Contractual | |
| Consultants | |
| **Total Direct Costs** | |
| Indirect Costs | |
| **Total Project Costs** | |

## D. Special Note on Indirect Costs

Indirect costs are overhead expenses incurred as a result of the project but not easily identified with the project's activities. These are administrative expenses that are related to overall general operations and are shared among projects and/or functions. Examples include executive oversight, existing facilities costs, accounting, grants management, legal expenses, utilities, and technology support.

If your organization includes indirect costs in the budget, you must provide a Negotiated Indirect Cost Rate Agreement with the US Government or three years of audited financials to PATH to validate the use of this rate.

## VI. Application Requirements – Technical

PATH requests applicants submit a proposal for a scope that they will implement within eight (8) months and provide a detailed timeline as instructed below.

Provide a narrative on your technical approach to accomplish the scope of work identified in section IV, including:

1. Description of technical approach which includes:
    a. Problem statement and solution approach.
    b. A description of how your solution will accomplish each of the subtasks in this application.
    c. A description of how your solution will scale to growing needs of users across the globe.
    d. Notional roadmap for your solution, aligned to the subtasks in this application.
    e. Potential obstacles and plans to overcome them.
2. Timeline to meet the deliverables.
3. Identification of major internal and external resources.
4. Profile of relevant corporate qualifications.
5. Profile of relevant experience and examples of related work, especially experience, knowledge, and presence in Vietnam.
6. Staffing plan accompanied by Curriculum Vitae (CV) for key technical positions.
7. List of certifications possessed by each key technical personnel.
8. Number of years in business.
9. Annual revenue.

If your company has more than one location, please indicate these qualifications for the site that is responding.

## VII. Additional Attachments

1. Illustrative Work Plan. An illustrative eight (8) month work plan timeline should be included in the Annex. The illustrative work plan should describe specific interventions (activities) planned for the relevant tasks and should include a timeline providing target dates for achievement of milestones and illustrative results.
2. Resumes and Letters of Commitment for all proposed key personnel. A complete and current resume must be submitted for each key personnel position, detailing the requisite qualifications and experience of the individual. Qualifications, experience, and skills shall be placed in chronological order starting with most recent information.
3. Staffing Plan. Applicants shall include a staffing plan, including specific position titles and the approximate level of participation for each position (percentage of Full Time Equivalent (FTE) and period).
4. Third tier-subawardee agreements, contracts, or commitments. Applicants may submit any agreements, contracts, or commitments it has with any potential third tier-subawardee.
5. Past Performance Information Sheets. Provide past performance information sheets for the most recent and relevant agreements/contracts for work similar to that described in Section IV. Sheets must reference contact names, job titles, mailing addresses, phone numbers, e-mail addresses, and a description of the performance to include: funder; summary of scope of work or complexity/diversity of tasks; primary location(s) of work; term of performance; skills/expertise required; dollar value; and payment type, i.e., fixed-price, cost reimbursement, etc.

6. Awards. Include any information on quality awards or certifications that indicate exceptional capacity to provide the service or product described in the scope of work.

## VIII. Application Evaluation Criteria

The following is a list of significant criteria against which applications will be assessed.

1. Technical Approach that conforms to all the components listed in Section VI above (**35 points**)
    a. Description of technical approach.
    b. Timeline to meet the deliverables.
    c. Identification of major internal and external resources.
    d. Qualifications.
    e. Profile of relevant experience and examples of related work.
    f. Staffing plan accompanied by CVs for key technical positions.
    g. List of certifications possessed by each key technical personnel.
    h. Number of years in business.

2. Experience with developing and deploying community and facility-level health information systems and aggregate reporting systems with dashboards to be validated by past performance references (**10 points**).

3. Experience with common health standards such as HL7 FHIR, ICD9 & 10, LOINC, SNOMED, enterprise architecture, health information exchanges, and open-source software development to be validated by past performance references (**10 points**).

4. Experience working with and existing relationships with the Ho Chi Minh City Center for Disease Control, Ho Chi Minh City Department of Health, and other stakeholders in the digital health space in Vietnam to be validated by past performance references. Preference is for a company with a presence in Ho Chi Minh City or ability to easily attend on-site meetings with government partners and community organizations. (**15 points**).

5. Costs - as detailed in Section V (**30 points**).

A multi-stakeholder technical evaluation committee will review applications and recommend finalists for a final technical evaluation consisting of a presentation and questions and answers. The final scope of work will be updated to include the findings of the technical evaluation committee.

Note: PATH reserves the right to include additional criteria.

## IX. Instructions and Deadlines for Responding

### A. PATH contacts

Program Contact: Kendra Givens, kgivens@path.org

Procurement Contact: Teresa Gingras; tgingras@path.org

### B. Applications Due: **October 4, 2020 at 5pm EDT**

Completed applications should be submitted by email to the contacts listed above. The subject line of the email should read: “RfA # 2020-048 - (Applicant name)”

We advise that you send files in commonly recognized MS formats. We will not accept responsibility for resolving technical transmission problems with applications.

### C. Informational Webinar and Fact-Finding Questions

An informational webinar will be held on September 15, 2020 at 10pm EDT to explain the RfA process and terminology. Simultaneous translation in English and Vietnamese will be provided. Questions regarding this solicitation will be accepted via email to *both* contacts listed above through **September 18, 2020 at 5pm EDT**. Responses to all submitted fact-finding questions will be posted to PATH/Digital Square's website on **September 24, 2020**. Please note that responses will not be confidential except in cases where proprietary information is involved. Inquiries after this date cannot be accommodated.

### D. Conclusion of Process

Applicants will be notified of the decision by **October 23, 2020.** Final award is subject to the terms and conditions included in this solicitation, as well as successful final negotiations of all applicable terms and conditions affecting this work.

## X. Terms and Conditions of the Solicitation

### A. Notice of non-binding solicitation

PATH reserves the right to reject all bids received in response to this solicitation and is in no way bound to accept any application. The applications submitted through this RfA process are the responsibility of the submitter and do not necessarily reflect the views of the United States Agency for International Development (USAID), the United States Government, or PATH.

### B. Confidentiality

All information provided by PATH as part of this solicitation must be treated as confidential. In the event that any information is inappropriately released, PATH will seek appropriate remedies as allowed. Applications, discussions, and all information received in response to this solicitation will be held as strictly confidential, except as otherwise noted.

### C. Conflict of interest disclosure

Applicants bidding on PATH business must disclose, to the procurement contact listed in the RfA, any actual or potential conflicts of interest. Conflicts of interest could be present if there is a personal relationship with a PATH staff member that constitutes a significant financial interest, board memberships, other employment, and ownership or rights in intellectual property that may be in conflict with the supplier's obligations to PATH. Suppliers and PATH are protected when actual or perceived conflicts of interest are disclosed. When necessary, PATH will create a management plan that provides mitigation of potential risks presented by the disclosed conflict of interest.

### D. Communication

All communications regarding this solicitation shall be directed to appropriate parties at PATH indicated in Section IX. A. Contacting third parties involved in the project, the review panel, or any other party may be considered a conflict of interest and could result in disqualification of the application.

### E. Acceptance

Acceptance of an application does not imply acceptance of its terms and conditions. PATH reserves the option to negotiate on the final terms and conditions. We additionally reserve the right to negotiate

the substance of the finalists' applications, as well as the option of accepting partial components of an application if appropriate.

### F. Right to final negotiations

PATH reserves the option to negotiate on the final costs and final scope of work, and also reserves the option to limit or include third parties at PATH's sole and full discretion in such negotiations.

### G. Third-party limitations

PATH does not represent, warrant, or act as an agent for any third party as a result of this solicitation. This solicitation does not authorize any third party to bind or commit PATH in any way without our express written consent.

### H. Application Validity

Applications submitted under this request shall be valid for 90 days from the date the application is due. The validity period shall be stated in the application submitted to PATH.

# XI. Appendix

Tier Support Definition

| IT Support Level[2] | Function | Support methodology | Indicative Staffing needs |
|---|---|---|---|
| **Tier 1** | Basic help desk resolution and service desk delivery and initial end-user contact. | Support for basic end-user issues such as solving usage problems within the system and addressing user issues such as password and function use.<br><br>If no solution is available, tier 1 personnel escalate incidents to a higher tier. | Entry-level technical personnel, trained to solve known problems and to fulfil service requests by following scripts. |
| **Tier 2** | In-depth technical support | Experienced and knowledgeable technicians assess issues and provide solutions for problems that cannot be handled by tier 1. Reviewing configuration options and deeper knowledge of solution core configuration and data tools.<br><br>If no solution is available, tier 2 support escalates the incident to tier 3. | Support personnel with deep knowledge of the product or service, but not necessarily the engineers or programmers who designed and created the product. |
| **Tier 3** | Expert product and service support | Access to the highest technical resources available for problem resolution or new feature creation.<br><br>Tier 3 technicians attempt to duplicate problems and define root causes, using product designs, code, or specifications. Responsible for identifying cause and providing information to applicant allowing decision of whether to create a new fix, depending on the cause of the problem. New fixes are documented for use by Tier 1 and Tier 2 personnel. | Tier 3 specialists are generally the most highly skilled product specialists, and may include the creators, chief architects, or engineers who created the product or service. |

[2] The table is based on several sources and edited for this RfA. See one source: https://www.bmc.com/blogs/support-levels-level-1-level-2-level-3/.