## A.2 Scope of Work

### Background

Digital Square is a partnership of the world's leading digital health experts from 40+ organizations working together with countries to strengthen digital health systems. In pursuit of our Mission: ***connect health leaders with the resources necessary for digital transformation***, 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 Digital Square, we can grow possibility into reality by focusing on our common goal: **connecting the world for better health**. Digital Square works in three key ways:

Digital Square works in three key ways:

1. **Co-investment:** We coordinate investments in digital health to maximize the impact of every dollar spent.
2. **Global goods:** We scale tools and technologies that can be adapted to different countries and contexts.
3. **Digital market readiness:** We create digital market readiness by building capacity with governments, local technology developers, and health workers.

Pursuant to point 2 listed above, Digital Square would like to support strengthening of OpenMRS.

### Objective

The Digital Square investment will be used to bring together a dedicated, community squad comprised of subject matter experts, technical architects, developers, and implementers to collaborate on a proof-of-concept solution for patient-level monitoring that is appropriate and scalable for low and middle income countries (LMICs). This squad will coordinate and collaborate as needed with other Notice D award recipients and communities, such as Bahmni and OpenHIE, to ensure that OpenMRS' point-of-service solution can be integrated into an end-to-end indicator reporting solution.

Where possible, OpenMRS will leverage existing work done for related modules, such as DHIS integration module, the case-based reporting module, the new FHIR module, etc. OpenMRS will ensure that the technical solutions contribute to achieving the OpenMRS community's technical visions for FHIR, ETL, and reporting. As work in these areas progresses within the community, OpenMRS' Technical Action Committee will work with the "PLIR Squad" and other squads working on related scopes to exchange plans, progress, coordinate work, and collaborate as needed.

**Activities**

- Objective 1: Develop a proof of concept which supports the calculation of the TX_PVLS indicator.
    - Activity 1.1: Use community forums to bring together a small team of subject matter experts and business analysts to define the initial scope and identify existing work to leverage.
    - Activity 1.2: Establish a project page on the OpenMRS Wiki with documented roles, responsibilities, and communication channels to be used during the project period.
    - Activity 1.3: Define proof of concept testing/validation
    - Activity 1.4: Identify and document the relevant concepts in a standardized terminology to be used for data capture.
- Objective 2: Build a proof of concept that supports exporting the necessary data for the measure calculation to a standard format e.g., a CSV or a FHIR bundle.
    - Activity 2.1: Define the architectural design of the module based on the FHIR R4 standards.
    - Activity 2.2: Export the data from OpenMRS for consumption by a tool (i.e.: mediator) capable of calculating the TX_PVLS indicator on the basis of the data.
- Objective 3: Build the capability for reading a FHIR Measure resource for the TX_PVLS indicator
    - Activity 3.1: Setup a proof of concept FHIR Measure resource to be consumed by OpenMRS
    - Activity 3.2: Consume the FHIR Measure resource and generate the corresponding patient-level output in the standard format used in Objective 2.
    - Activity 3.3: Adapt the FHIR interfaces of OpenMRS to support the overall workflow.
    - Activity 3.4: Contribute to FHIR profiling activities as relevant.
    - Activity 3.5: Feedback insights or suggestions for improvements to relevant organizations.

PATH and Subrecipient anticipate staffing of this engagement is as follows:

| **PATH** | | |
|---|---|---|
| **Name** | **Title/Team** | **Project responsibilities** |
| Carl Leitner | Technical Director | • Provide technical oversight and ensure alignment with initiative objectives. |

| | | |
|---|---|---|
| Jackie Clark | Project Administrator Officer | • Receive deliverables and provide feedback on financial deliverables within 5 business days<br>• Coordinate subrecipient payments |
| Jenny Thompson | Technical Program Officer | • Review deliverables and provide feedback technical deliverables within 5 business days.<br>• Schedule meetings and monitor activity progress. |
| Carl Fourie | Senior Technical Advisor | • Provide QA via testing workflows and reviewing documentation as needed |
| Caitlin Bowman | Program Assistant | • Provide administrative support for subaward implementation |

| **Subrecipient** | | |
|---|---|---|
| **Name** | **Title/Team** | **Project Responsibilities** |
| Jennifer Antilla | OpenMRS Community Manager | Provide grant management and administration; coordinate community engagement; provide squad support; communications |
| Grace Potma | OpenMRS Product Manager | Provide overall product management; organize and lead squad; monitor and report on progress |
| Christine Gichuki | Quality Assurance Lead | Provide QA guidance and support |
| TBD | OpenMRS Fellows | Provide technical direction to PLIR squad; engage with implementations to contribute to and adopt outputs of the fellowship project; keep abreast of and apply relevant standards, technologies, and frameworks; build proof of concepts and capability for reading FHIR measure resources |
| N/A | OpenMRS Technical Action Committee | Provide subject matter expertise, technical guidance and direction to PLIR squad |

## Timeline

PATH and Subrecipient will work diligently to maintain this schedule, but both parties acknowledge

that the actual schedule may differ. Significant delays impacting the deliverable schedule (A.4) will require an amendment

| Objective/Activity | Q1 | | | Q2 | | | Q3 | | | Q4 | | | Output |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M 1 | M 2 | M 3 | M 4 | M 5 | M 6 | M 7 | M 8 | M 9 | M 10 | M 11 | M 12 | |
| Objective 1: Develop a proof of concept which supports the calculation of the TX_PVLS indicator. | | | | | | | | | | | | | |
| Use community forums to bring together a small team of subject matter experts and business analysts to define the initial scope and identify existing work to leverage. | | | | | | | | | | | | | PLIR Squad Meeting Notes |
| Publish a Patient Level Indicator Reporting Project page on the OpenMRS Wiki | | | | | | | | | | | | | Published PLIR Project Page |
| Define POC testing/validation | | | | | | | | | | | | | POC testing/validation plan |
| Identify the relevant concepts in a standardized terminology to be used for data capture. | | | | | | | | | | | | | PLIR Squad Meeting Notes<br>Concepts published on PLIR Project Page |
| Objective 2: Build a proof of concept that supports exporting the necessary data for the measure calculation to a standard format e.g., a CSV or a FHIR bundle. | | | | | | | | | | | | | |
| Define the architectural design of the module based on the FHIR R4 standards. | | | | | | | | | | | | | Design Forum session<br>PLIR Squad notes |
| Export the data from OpenMRS for consumption by a tool capable of calculating the TX_PVLS indicator on the basis of the data. | | | | | | | | | | | | | Source code published on GitHub<br>Updates posted on OpenMRS Talk, Digital Square blog, OpenMRS blog. |
| Objective 3: Build the capability for reading a FHIR Measure resource for the TX_PVLS indicator | | | | | | | | | | | | | |
| Setup a proof of concept FHIR Measure resource to be consumed by OpenMRS | | | | | | | | | | | | | PLIR Squad Meeting Notes |
| Adapt the FHIR interfaces of OpenMRS to support the overall workflow. | | | | | | | | | | | | | PLIR Squad Meeting Notes |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Consume the FHIR Measure resource and generate the corresponding patient-level output in the standard format used in Objective 2.2. | | | | | | | | | | | | FHIR Measure resources published on the PLIR Project Page<br>Design Forum session<br>PLIR Squad notes |
| Contribute to FHIR profiling activities as relevant. | | | | | | | | | | | | PLIR Squad Meeting Notes |
| Feedback insights or suggestions for improvements to relevant organizations. | | | | | | | | | | | | Feedback disseminated via the OpenMRS blog and DS webinar |

**Assumptions and dependencies**

The work outlined above includes several internal assumptions and dependencies. Achieving Objective 2 relies on the work completed for Objective 1, and similarly, achieving Objective 3 depends on the assumptions and work done for both Objective 1 and Objective 2. To the extent possible, we will re-use work available to the community. We will also work to ensure that our approach is consistent with OpenMRS' technical direction for FHIR and ETL/ELT, data analysis and reporting.

While we have reduced or removed any specific dependency on approaches adopted by external partners, our ability to contribute our outputs to a coordinated solution relies on appropriate use of common standards (e.g. mADX, FHIR), frameworks (e.g. IHE white paper), and guidelines. Open communication and coordination with external partners will be essential.

The international travel to participate in and share progress at the OpenMRS Implementer's Meeting and the OpenHIE Conference is dependent on how the COVID-19 pandemic evolves. If the team is unable to travel and if these meetings offer virtual conferences, the team will participate virtually.

## A.3 Budget

| | Qty | Unit (Days, Mos., Trips, Etc.) | Unit Amt (US$) | No. of Units | Total (US$) |
|---|---|---|---|---|---|
| **Personnel** | | | | | |
| OpenMRS Community Manager | 1 | Months | $ 660 | 12 | $ 7,922 |
| OpenMRS Product Manager | 1 | Months | $ 833 | 12 | $ 10,000 |
| Quality Assurance Lead | 1 | Months | $ 1,118 | 3 | $ 3,354 |
| **TOTAL: PERSONNEL** | | | | | **$ 21,276** |
| **Travel and Transport** | | | | | |
| International and Regional Air Travel | | | | | |
| SME/Business Analyst - TBD to Maputo for OMRS Implementer's Meeting | 1 | RT | $ 2,000 | 1 | $ 2,000 |
| SME/Business Analyst - US to TBD for OpenHIE Meeting | 1 | RT | $ 2,000 | 1 | $ 2,000 |
| *SUBTOTAL: International/Regional Transportation* | | | | | *$ 4,000* |
| | | | | | |
| **International/Regional Per Diem** | | | | | |
| SME/Business Analyst - TBD to TBD for OMRS Implementer's Meeting | 5 | Days | $ 236 | 1 | $ 1,180 |
| SME/Business Analyst - US to Malawi for OpenHIE Meeting | 5 | Days | $ 236 | 1 | $ 1,180 |
| *SUBTOTAL: International/Regional Per Diem* | | | | | *$ 2,360* |
| | | | | | |
| ***SUBTOTAL: International Travel*** | | | | | ***$ 6,360*** |
| **TOTAL: TRAVEL, PER DIEM & TRANSPORT** | | | | | **$ 6,360** |
| **Other Direct Costs** | | | | | |
| OpenMRS Fellowship Stipends | 1 | Months | $ 2,100 | 12 | $ 25,200 |
| OpenMRS Fellowship Stipends | 1 | Months | $ 1,150 | 12 | $ 13,800 |
| | | | | | |
| **TOTAL: OTHER DIRECT COSTS** | | | | | ***$ 39,000*** |
| **TOTAL DIRECT COSTS** | | | | | ***$ 66,636*** |

## A.4 Payment and Deliverable Schedule

| Deliverable Description | Reporting Period | Due | Payment Amount (if applicable) |
|---|---|---|---|
| Objective 1 Deliverables<br>● PLIR Squad meeting notes<br>● PLIR Squad Project Page<br>● Concepts published on PLIR Project Page<br>● OpenMRS blog post<br>Objective 2 Deliverables<br>● PLIR Squad notes | July-September 2020 | 30 September 2020 | |
| Quarterly Progress Report including community engagement and key feedback received from the community | 1 July - 30 September 2020 | 15 October 2020 | |
| Quarterly Financial Report | 1 July - 30 September 2020 | 30 October 2020 | As invoiced |
| Objective 2 Deliverables<br>● Design Forum session<br>● PLIR Squad notes<br>● Source code published on github<br>● OpenMRS and Digital Square blog post | 1 October - 31 December 2020 | 31 December 2020 | |
| Quarterly Progress Report including community engagement and key feedback received from the community | 1 October - 31 December 2020 | 15 January 2021 | |
| Quarterly Financial Report | 1 October - 31 December 2020 | 29 January 2021 | As invoiced |
| Objective 3 Deliverables<br>● PLIR Squad notes<br>● Design Forum session | 1 January - 31 March 2021 | 31 March 2021 | |
| Quarterly Progress Report including community engagement and key feedback received from the community | 1 January - 31 March 2021 | 15 April 2021 | |
| Quarterly Financial Report | 1 January - 31 March 2021 | 30 April 2021 | As invoiced |
| Objective 3 Deliverables<br>● PLIR Squad notes<br>● FHIR Measure resources published on the PLIR Project Page<br>● OpenMRS blog post<br>● Digital Square webinar | 1 April - 30 June 2021 | 30 June 2021 | |

| | | | |
|---|---|---|---|
| Final Technical Report including | 1 July 2020 - 30 June 2021 | 30 June 2021 | |
| End-line maturity matrix evaluations | | 30 June 2021 | |
| Final Financial Report | 1 July 2020 - 30 June 2021 | 16 August 2021 | As invoiced |

**A.5 Financial Report Form**

**Subrecipient:** OpenMRS
**Subagreement Number:** AID.2134-XXX-SUB
**Period of Performance:** From: Start Date To: End Date
**Invoice Period:** From: To:

| | | A | B | C | D | E |
|---|---|---|---|---|---|---|
| **Cost Reimbursable items** | | **Current Funding (USD)** | **Expenses this Invoice Period (USD)** | **Total Expenses Previous Invoice Periods (USD)** | **Total Expenses (B+C)** | **Budget Balance (A-D)** |
| Personnel & Fringe | | $6,000 | | | | |
| Travel | | $6,000 | | | | |
| Consultants | | $54,000 | | | | |
| Other Direct Costs | | | | | | |
| **TOTAL COST (Up to)** | | **$66,000** | | | | |

| Status of Cash on Hand | |
|---|---|
| Payments Received to Date | |
| Total Expense (D) | |
| Remaining Balance | |

| Status of Interest Earned | |
|---|---|
| Previous Total Interest Earned | |
| Interest Earned this Period | |
| Total Interest Earned to Date | |

By signing below the Subrecipient Certifies:
That payment of the sum claimed under the cited Subagreement is proper and due and that appropriate refund to PATH will be made upon request by PATH in the event of misrepresentation and/or nonperformance, in whole or in part, under the Subagreement or for any breach of the terms of the Subagreement; and

That information in the Financial Report is correct and such detailed supporting information as PATH may require will be furnished to PATH on request.

Sign: _____ Date: _____

Print Name: _____

Title: _____

## A.6: Narrative Report Templates

Global Good Monthly Report template.docx

Global Good Quarterly Report tem

Global Good Final Report template.docx