



Vaccine Management Information System (VMIS)

Market Exercise

**Issued by
Indiana State Department of Health (IDOH)**

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1. Introduction

On October 30, 2020 Governor Holcomb issued Executive Order 20-47 which, among other things, continued the declaration of emergency caused by coronavirus disease 2019 (COVID-19) and its outbreak in the State and around the country.

To aid the State in its efforts to combat COVID-19, the Indiana State Department of Health (IDOH) seeks a vendor partner to rapidly develop and deploy a Vaccine Management Information System or “VMIS” and to continue the maintenance and operations of the VMIS until the vaccine dissemination program is concluded or the State elects to discontinue the use of the VMIS system. Given the urgent need to identify a VMIS partner, the State is using this “Market Exercise” to gather structured information from potential Contractors regarding their proposed VMIS solution, approach, and cost to help the State expeditiously identify the best fit for its needs.

Given the emergency, this is not a typical procurement exercise otherwise governed by Indiana Code 5-22-9. Instead, this Market Exercise gathers limited information from known market entities in a structured way which will aid the State in making the decision that best serves its interests. The State reserves the right to select one or more vendors with whom it may negotiate a contract. This State is not required to select a vendor which participated in this Market Exercise. The State also reserves the right to reject all submissions to this Market Exercise document.

This Market Exercise has four components:

1. **The Market Exercise:** This Word Document which provides response instructions, explains the services sought by the State, and establishes State expectations and conditions for the eventual VMIS project.
2. **Attachment A – Pricing Sheet Template:** In this document, Respondents provide a proposed fixed cost for the VMIS and its continued operations and related services. Software or platform license costs should be included, though the State reserves the right to procure licenses through existing competitively sourced contracts if applicable. Various proposed service costs are also requested such as training.
3. **Attachment B – Functional Requirements Matrix:** In this document, Respondents indicate whether certain functions are present in their proposed VMIS system and whether those functions are available immediately or require some form of development.
4. **Attachment C – Response Questions:** This document provides questions which the Respondent should answer with its response.

2. Submission Instructions

Given the emergency conditions and the urgent needs of the State, responses to this Market Exercise are due, via email, to Bob Davis at rodavis@isdh.in.gov on **Friday, November 13th 2020 by 5:00 PM Eastern Daylight Savings Time**. On this email, please also copy Shane Hatchett at SHatchett@isdh.IN.gov.

A response must consist of the following components:

1. A completed Attachment A Pricing Sheet. This template includes further instructions. Please submit this file in Excel format, do not PDF it.
2. A completed Attachment B Functional Requirements Matrix. This template includes further instructions. Please submit this file in Excel format, do not PDF it.
3. A written response responsive to the questions in Attachment C. This response shall be no longer than 15 pages in length (size 12 font), though a Respondent may include attachments or exhibits which will not be counted towards that length. In the event an attachment or exhibit is provided, please include a meaningful summary of the materials in the 15-page response. The format of this file may be Word or PDF.

If desired, a Respondent may also include a 1-page cover letter.

Respondents will be permitted to ask questions until the 1:00 pm Eastern Time on Monday, November 9th. Questions must be submitted via email to Bob Davis at rodavis@isdh.in.gov with the Subject Line “Market Exercise Question – Urgent.”

The State will answer the questions as they are received. The State will provide the answers and questions over email, blind copying all known potential Respondents (and anonymizing the questions) so that all potential Respondents may benefit from the question and answer.

3. Scope of Services Sought

IDOH seeks the services of a qualified vendor (“the Contractor”) to design, develop, and implement (DDI) a Vaccine Management Information System (VMIS). The Contractor shall also provide Maintenance and Operations (M&O) services for the VMIS as soon as the solution is rolled out (whether in part or in whole, depending on the final roll-out strategy).

At a high level, the VMIS provides the following functionalities:

- Vaccine distribution planning
- Provider enrollment
- Inventory management and tracking
- Appointment self-scheduling and reminder alerts
- Vaccine administration data capture (including vaccine recipient consent forms)
- Data analytics, dashboards, and reporting
- Volunteer vaccine team enrollment and management
- Mobile vaccination clinic contractor scheduling and management
- Integration and/or data exchange with State and Federal systems

Please see Attachment B for more information on the VMIS functionalities.

If the Contractor is proposing a cloud-based solution, the Contractor must offer it as a software-as-a-service (SaaS) version and will be responsible for all aspects of the cloud offering. The term of the Contract shall be up to three (3) years, which may include the Maintenance and Operations (M&O) of the VMIS after implementation.

In addition to any other termination rights under the contract, during the M&O phase of the Contract, the State reserves the right to discontinue the use of the VMIS and terminate this contract if the State, in its sole discretion, determines this discontinuance is in the best interest of the State.

4. Key Technical Considerations

The following sections provide the State's present expectations regarding the VMIS project. Respondents should consult these sections and factor them into their responses and associated pricing. These expectations are subject to negotiation in a final contract with a Contractor.

A. Hosting

The VMIS shall be hosted in a secure environment. This could include a cloud environment, an approved Contractor hosted environment, or a State-hosted solution as determined by IDOH and the Contractor in the Contract.

B. Users

The VMIS shall accommodate a variety of users, including Hoosiers interested in getting a vaccine, vaccine recipients, IDOH staff (estimated 20 users), local health departments (estimated 300 users), and providers and vaccine administrators (estimated 3,500 users). The self-scheduling tool should be sufficient to accommodate expected interest from the State's population.

The VMIS shall support both Role Based Access Control (RBAC) and Attribute Based Access Control (ABAC).

C. Privacy/Security

- i. The VMIS must ensure the system and data meets all applicable privacy and security requirements, including in any mobile/tablet applications:
 - a. Federal:
 - i. Health Insurance Portability and Accountability Act (HIPAA)
 - ii. Federal Risk and Authorization Management Program (FedRAMP Moderate)
 - iii. National Institute of Standards and Technology (NIST)
 - b. State: IOT Security Policies (available here: https://www.in.gov/iot_credential/information-security-framework/)
- ii. The Contractor shall perform and ensure that the VMIS system passes application security and vulnerability tests.
- iii. Maintains information on changes to confidential records and/or data fields, including identification of the responsible system user and date and time of the change.
- iv. Provides capability to log user access to restricted data, events and associated data.
- v. Provides automatic timeout and logoff of users based on minutes of inactivity as specified by IDOH.

D. System Reporting

The VMIS shall be capable of generating pre-built reports on demand. The final set of reports will be determined in the course of the implementation, but the reports shall include, at a minimum, any reports required by the Federal Government.

E. Interfaces/Integrations

The Contractor shall interface/integrate the VMIS with State systems, federal systems.

- i. State Systems:
 - a. CHIRP (real time, bidirectional)
 - b. Data extract to State's Data Lake (COVID-19 response Data Lake PostgreSQL database)
 - c. BizTalk
 - d. Mulesoft
- ii. Federal Systems:
 - a. CDC's Vaccine Tracking System (VTrckS)
 - b. Vaccine Adverse Event Reporting System (VAERS - national early warning system to detect possible safety problems with vaccines)
 - c. CDC's IZ Gateway is a centralized technical infrastructure that supports bidirectional exchange of immunization data. COVID-19 vaccination data will primarily be submitted to CDC through the IZ Gateway. The IZ Gateway will feed the CDC's Tiberius federal dashboard

The State is interested in the prospect of the VMIS interfacing with provider billing systems, the NEDSS Base system (NBS), State Medicaid systems (*i.e.* MMIS), and private insurance providers' systems. The State is also interested in the potential of the VMIS to interface with Access Indiana to support single sign-on initiatives.

F. Multi-Platform Capabilities

The self-scheduling and vaccine administration features (as described in Attachment B) should be accessible through computer internet browser and on mobile and tablet devices running on either Android or iOS.

G. Expandability

The VMIS is expressly contemplated to manage the COVID-19 vaccine effort but the State may consider a VMIS solution's capacity to expand to other vaccine-related uses.

5. VMIS Design, Development and Implementation Approach

IDOH will collaborate with the Contractor to define the SDLC approach for the VMIS using industry SLDC best practices to design, development, and implement the VMIS as well as to implement any fixes and enhancements.

Regardless of SDLC approach, the State will work with the Contractor to establish Contract deliverables which will track the progress and be tied to Contractor compensation.

If an Agile SDLC approach is proposed: (1) the Contractor shall deliver deliverables that are sprint-specific as applicable and (2) the Contractor shall keep each deliverable updated after deliverable acceptance to reflect the latest progress in the project. All deliverables must be approved by the State in writing in order to be considered accepted.

The following key activities, as applicable to the functionality being implemented, must be completed and approved prior roll out, unless otherwise agreed to by the State:

- i. System Testing/User Acceptance Testing executed (all defects with severity of blocker, critical and high must be fixed)
- ii. Disaster Recovery drill executed
- iii. Help Desk support in place (if applicable)
- iv. Planned pre-rollout training must executed

The Contractor shall be responsible for defect resolution. Identified defects will be categorized into one of the following five (5) categories.

- **Blocker:** An item or action that prevents further testing and no work around is possible, is considered a blocking defect.
- **Critical:** A major functional piece is broken, or issue that affects several areas is considered a critical defect.
- **High:** A defect that does not function as expected/designed or causes other functionalities to fail to meet the requirements is considered a high defect.
- **Normal:** A defect that affects minor functionality or non-critical data.
- **Minor:** A defect that does not affect functionality or data. It does not impact productivity or efficiency

The overall UAT Defect Rate shall be < 5% for Blocker, Critical, and High Defects (excludes Normal and Minor defects).

6. Maintenance and Operations (M&O) Services

M&O entails supporting the processes of the VMIS infrastructure to ensure availability to all users. The State may elect to pursue a separate contract with the Contractor or another vendor related to M&O for the VMIS, but the State may also pursue a single contract with a Contractor for both VMIS DDI and M&O services.

During the warranty and M&O periods, support must be available to timely address any system issues or processes that impact stakeholders.

The Contractor shall perform the following M&O activities:

- A. **System Maintenance.** Ensure that IDOH maintains licensure agreements with applicable parties. The Contractor must plan and execute tasks required to ensure the VMIS components stay relevant and useable. This support includes resolution of functional issues, application of patches, preventative maintenance, planning/execution of upgrades, and regular performance

monitoring and performance reporting. At least on an annual basis, the Contractor shall communicate to the State any available information on the product roadmap, planned upgrades, and enhancements, and seek State input when necessary.

- B. **System Performance Monitoring and Reporting.** Monitor and troubleshoot all VMIS solution components to ensure that they are available per State requirements and in alignment with meeting and exceeding applicable service levels. Communicate scheduled maintenance or emergency maintenance in a timely manner.
- C. **Risk and Issue Management.** Identify, monitor, and report risks, as well as facilitate the resolution of issues. The Contractor must immediately report to IDOH discovery of any significant issues and risks. Upon request, the Contractor shall conduct a Root Cause Analysis for any risk or issue.
- D. **Security Management.** Perform required security activities such as contingency planning, testing, monitoring, and audits. Perform routine backup and recovery procedures.
- E. **Documentation/Artifact Management.** Keep all system and training documentation updated.
- F. **Status Reporting.** Monitor and report the following in the Weekly Status Report:
 - A. Security incidents
 - B. Defects log
 - C. Service disruption and/or system downtime
 - D. Interfacing issues
 - E. Risks and issues
 - F. Help desk ticket count and analysis
 - G. Compliance with Performance Standards
- G. **Defect Resolution After Implementation.** Be responsible for resolution of defects found after implementation. Determination of defects after implementation will be reviewed and approved by the State and be resolved according to the timelines standards agreed upon with the State.
- H. **Incident Management.** The Contractor shall properly plan and conduct services to minimize the occurrence of incidents and/or problems with the VMIS components and service delivery. If incidents and/or problems arise, the Contractor shall work with the State to resolve issues in a timely manner.
- I. **Access Management.** The Contractor shall assist in the definition of user roles and security configurations, specifically the creation of new roles and monitoring of user access rights. The Contractor shall support the creation of role-based security for production environments.
- J. **Privacy and Security of Data.** The Contractor shall conduct security monitoring activities to ensure full compliance with State and federal requirements.

K. **Help Desk (Optional).** The Contractor may lead and staff a VMIS Help Desk team. The Contractor shall create Standard Operating Procedures (SOPs) and Checklists to be used by the VMIS Help Desk team. The SOPs and Checklists will be reviewed and approved by IDOH. The VMIS Help Desk shall adhere to the following requirements:

- Be available 24/7 during the initial roll out and subsequently reduced to the hours of 7:00 a.m. to 6:00 p.m. (ET), Seven (7) days a week. The precise coverage would be determined in the Contract.
- Provide live technical support for issues with the VMIS over phone or chat to all types of users
- Create help desk tickets for Tier 1, 2, and 3 level issues, as further described below.

Help Desk Tier Classifications (Illustrative Examples, Not Comprehensive)

Tier 1	Tier 2	Tier 3
• ID requests, resets, deletions • Password resets • Unlocking user accounts • Basic navigation and troubleshooting • Submission of tickets for triage • Report requests	• Policy, practice, or training questions requiring a review and recommendations • Issues discovered that require a level of expertise beyond Tier 1	• Bugs or other defects that require a developer to be assigned • System down issues affecting users • Server issues

- Resolve issues at a timely rate. A specific resolution timeframe requirement for each Tier will be finalized with the Contractor.

7. Project Management

The State anticipates the following regarding the Contractor's project management of the VMIS project. The State is open to finalizing these concepts with the ultimate Contractor.

- Project Management Plan (PMP).** The Contractor shall provide a PMP that incorporates best practices from previous IT systems implementation projects at a time mutually agreed upon with the State.
- Project Schedule.** The Contractor shall propose a Project Schedule that is attainable based on the requirements and their prior experience. Once planning commences, the Project Schedule will be refined and baselined and the Contractor will be held accountable to the agreed upon schedule. The Project Schedule must be submitted within seven (7) days of the Contract start date.
- Change Control.** IDOH shall convene a Steering Committee to review and approve proposed Change Requests. Any Change Request proposed by Contractor shall include sufficient information, including cost and timing, for the Steering Committee to make a determination. The State reserves the right to institute a more robust change control process for later years of the contract.

- D. **Weekly Status Reports and Weekly Status Meetings.** The Contractor shall provide to the State a Weekly Status Report that includes updates on tasks (including actual work performed and estimates to complete future work), risks, and issues. During the Contract Term, the Contractor will meet weekly with IDOH to review the Weekly Status Report.
- E. **Meeting Attendance.** The Contractor shall be available for meetings throughout the duration of the Contract, within no later than two (2) business days of request.

8. Business Continuity and Disaster Recovery

- A. The Contractor is responsible for Business Continuity and Disaster Recovery for the VMIS. The Contractor is required to create and execute a Business Continuity/Disaster Recovery Plan specific to VMIS solution. The Contractor will successfully exercise this Business Continuity/Disaster Recovery Plan to secure the agency's information system assets in the event of a disaster.
- B. Backup and failover processes for all IT assets based on RTO and RPO as determined and mutually agreed upon by the Contractor and IDOH during planning.
- C. The VMIS system must be recoverable within a time mutually agreed to with the Contractor in the Contract.
- D. The Contractor will complete one Business Continuity drill during development. The Contractor will also complete one Disaster Recovery drill annually

9. Training

The State anticipates requiring Contractor expertise to develop and potentially lead training efforts for the VMIS. The precise requirements in this regard will be finalized in a Contract, but the State presently requests the following:

- A. The Contractor shall and develop an effective training program collaboration with the IDOH team. The Contractor shall be responsible for creating training content, using varying media (live, on-line, recorded, webinars, etc.) that best suits each type of user. The Contractor shall deliver Superuser and Train-the-Trainer training before the rollout. The Contractor shall deliver end user training as agreed upon in the approved Training Plan. The Contractor training staff must be experienced in delivering training for analogous systems and be very familiar with the VMIS functionality.
- B. All communication and training materials must be reviewed and approved by IDOH before being distributed to trainees.

10. Staffing

- A. The Contractor shall provide qualified staff members with experience in similar system implementations.
- B. The Contractor shall provide a Project Manager who will be responsible for all aspects of the Contract and ensure it progresses in a timely and efficient manner. The Project Manager will also be responsible for all deliverables. The Project Manager shall be the main point of contact for the State and ensure that the Contractor upholds all terms set forth in the Contract.
- C. The State reserves the right to remove any Contractor or subcontractor staff member who is deemed unfit. If the State deems a staff member unfit, the Contractor shall replace the staff member (at its expense) with another staff member who meets the State's approval within ten (10) business days.

- D. The Contractor must provide the State with written notification of anticipated vacancies of any vital staff positions within two (2) business days of receiving the individual's resignation notice, the Contractor's notice to terminate an individual, or the position otherwise becoming vacant. Vacated vital staff positions must be refilled within 30 days of notice (of the vacancy) with a person who has the same or higher qualifications and experience. The vital positions will be identified in the Contract.
- E. All staffing changes must be approved by the State in advance unless circumstances do not permit this (termination, illness, resignation).

11. Turnover (End of Contract Responsibilities)

- A. The Contractor must conduct knowledge transfer and turnover activities according to an approved Turnover Plan. The Turnover Plan must be approved four (4) months prior to the end of the Contract's term.
- B. The Turnover Plan must detail the proposed turnover schedule and activities associated with the turnover tasks. The plan shall describe the Contractor's approach and schedule for transfer of all SDLC deliverables and documentation created, maintained, and updated throughout the Contract term.
- C. The Contractor shall not reduce operational staffing levels during the turnover period without prior approval by IDOH. The Contractor shall not in any way restrict or prevent Contractor staff from accepting employment with IDOH or any successor VMIS contractor.

12. Desired VMIS Service Levels

Given its criticality to the State's COVID-19 response efforts, the VMIS must perform at an acceptable level. Below are desired service levels for the DDI and M&O of the project. The State is amenable to adjustment of these levels with the Contractor at the time of Contracting.

Performance Item	Performance Standard
1. Implementation Timeliness (SDLC Only)	Implementation of is executed by the due date in the approved Project Schedule.
2. UAT Defect Rate	Overall UAT Defect Rate is < 5% for Blocker, Critical, and High Defects (excludes Normal and Minor defects)
3. Defect Resolution Timeliness for Code in Production Environment	Blocker - 12 hours to fix and migrate to UAT environment
	Critical - 2 business days to fix and migrate to UAT environment
	High – 5 business days to fix and migrate to UAT environment
	Normal – 15 business days to fix and migrate to UAT environment
	Minor – 25 business days to fix and migrate to UAT environment
4. Deliverable Timeliness	Acceptance of the deliverables by Project Schedule due date, unless delay is approved by the State
5. Production Environment	99.9% availability, except during scheduled maintenance

Performance Item	Performance Standard
Availability (M&O Only)	
6. On-line Response Times in Production Environment (M&O Only)	90% of response times are less than 2 seconds. 98% less than 10 seconds. Excludes complex reports
7. Security Incidents Reporting Timeliness (M&O Only)	Any security incident must be communicated to appropriate IDOH staff within one hour of discovery
8. Business Continuity and Disaster Recovery Time	System shall be recoverable within a period to be approved by IDOH before Contract start date.
9. Help Desk Availability (M&O Only) – if utilized	• Answer rate (TBD) • Hold time (TBD) • Abandonment rate (TBD) • Resolution timeframe (TBD)

In the Contract, the State wishes to structure DDI and M&O compensation in a manner which rewards the Contractor's operation at agreed upon levels. The State is amenable to finalizing the approach to this goal with the Contractor in the Contract.

13. Warranty

The State desires a limited warranty for the VMIS system. Specifically, the State would like the Contractor to warranty the VMIS system against any defects for a period of 12 months after any feature is released into production. The warranty period would be extended until all defects identified during the warranty period are remedied by the Contractor.

The precise nature and requirements of the warranty will be finalized with the Contractor in the Contract.