Project Investment Justification

Exposure Notification Technology Solution

HS21008

Department of Health Services

Contents

1. GENERAL INFORMATION

PIJ ID: HS21008
PIJ Name: Exposure Notification Technology Solution
Account: Department of Health Services
Business Unit Requesting: ADHS - Public Health Services Preparedness
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2. MEETING PRE-WORK

2.1 What is the operational issue or business need that the Agency is trying to solve? (i.e....current process is manual, which increases resource time/costs to the State/Agency, and leads to errors...):

ADHS has identified an opportunity to use newly available "Exposure Notification" (EN) technology to enhance and accelerate a key aspect of the state's existing COVID-19 contract tracing efforts. Specifically, ADHS is seeking to reduce the time it takes to notify potentially exposed individuals, expand the percentage of exposed individuals notified, improve the accuracy of exposure risk calculation and conveniently deliver accurate and localized public health information to citizens of AZ.

Significant evidence has accumulated that digital contact tracing can significantly contribute to reducing SARS-CoV-2 transmission, above and beyond manual contact tracing (Abueg et al. 2020; Ferretti et al. 2020). Digital contact tracing is generally faster than manual contact tracing, which is critical given the short time from exposure to onset of symptoms for SARS-CoV-2 (Kretzschmar et al. 2020).

It is also more easily scalable during intense outbreaks. Its greater privacy/anonymity might also succeed in notifying contacts that cases are unwilling to share with manual tracers. Finally, digital contact tracing can also trace those whose identity is unknown to the case, and so unreachable through manual contact tracing. The benefits of contact tracing are maximized, and the harm reduced, when quarantine is focused on individuals most likely to be infected. The COVID Watch app has outperformed leading alternatives in its use of information (Petrie and Masel 2020).

Currently, ADHS receives communicable disease reports for a number of different conditions and syndromes from healthcare providers, facilities, schools, and laboratories pursuant to Arizona Administrative Code Title 9 Chapter 6. These reports are received through a variety of methods, including fax, telephone, or direct entry by users into the integrated system, the Medical Electronic Disease Surveillance Intelligence System (MEDSIS). For COVID-19 providers report suspected and confirmed cases to the local health agency and clinical laboratories report daily to ADHS mostly via electronic laboratory reporting using HL7 or a flat file alternative, but some are still faxed. Once these are in Electronic Laboratory Reporting (ELR), each positive laboratory report is integrated into the MEDSIS. Each day the new COVID-19 cases are uploaded to a Qualtrics database for case investigators to interview cases and elicit contacts. Contacts are made available to contact tracers for follow up to reinforce quarantine times and to enable daily automated symptom monitoring. During the summer surge, county and tribal health departments were overwhelmed with case interviews and contact tracing. Lags in interviews potentially allowed additional exposures to occur with delayed isolation of cases, contact unaware of exposures and the need to quarantine, poor recall of where cases had been and recent activities that may have put them at risk, thus limited the identification

of super spreader events and continued spread of the virus.

References:

Abueg M, et al. 2020. Modeling the combined effect of digital exposure notification and non-pharmaceutical interventions on the COVID-19 epidemic in Washington state. medRxiv. doi: 10.1101/2020.08.29.20184135

Ferretti L, et al. 2020. Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing. Science. 368:eabb6936. doi: 10.1126/science.abb6936

Kretzschmar ME, et al. 2020. Impact of delays on effectiveness of contact tracing strategies for COVID-19: a modelling study. The Lancet Public Health. 5:e452-e459. doi: 10.1016/S2468-2667(20)30157-2

Petrie J, Masel J. 2020. Marginal Value of Quarantine. medRxiv. doi: 10.1101/2020.11.24.20238204

2.2 How will solving this issue or addressing this need benefit the State or the Agency?

Agency:

Implementing the WeHealth COVID Watch AZ app will enhance the efficacy of the public health system in Arizona which includes ADHS, all 15 county health departments and up to 22 tribal health departments with contact tracing efforts, informing exposed individuals and offer improved coordination among local and tribal health departments. The anonymity of individuals provided by the app may increase sharing of the positive test. By providing laboratory integration services, WeHealth's solution will also significantly shorten the time (and likelihood of use) and reduce the labor required to provide positive test confirmation codes.

State:

Implementing the COVID Watch AZ app is projected to lead to significant reduction in disease transmission across the state. Data suggests that a 15% adoption of digital exposure notifications in a population could reduce infections by 8% and deaths by 6%. Additional benefits from reducing transmission include helping the state manage scarce resources including hospital beds, ICUs and early vaccine doses.

Furthermore, Scientists at the University of Arizona and Waterloo have calculated that WeHealth's patent-pending more accurate risk assessment can, by better quarantining the right people, reduce the total costs of quarantine and isolation by an estimated $11.4 million USD, in a society of 10 million with modest uptake.

Because COVID Watch AZ app uses the Google Apple Exposure Notification technology (GAEN), and is connected to the Association of Public Health Laboratories (APHL) national key server, notification can occur to anyone using a GAEN enabled iOS or android, such as an out-of- state visitor exposed in Arizona or an Arizonan exposed in another state (where a GAEN app is used). The COVID Watch App is currently being used at UA, NAU and the country of Bermuda. A GAEN enabled iOS or android is used in 21 other states (AL, CA (pilot), CO,CT, DE, DC, MD, MI, MN, NC, ND, NE, NJ, NY, OR (dev), PA, SC (dev), UT, VA, WA, and WY) as well as in several countries (Ireland, Northern Ireland, Scotland, UK, Switzerland, Germany, S. Korea and many others).

2.3 Describe the proposed solution to this business need.

ADHS will contract with WeHealth to configure and launch the WeHealth Solution consisting of the following components: 1. A public health internal dashboard to customize and administer the app as well as evaluate it's use, 2. Customized EN app for the State of Arizona on both iOS and Android platforms, 3. the Key Server to anonymously

notify contacts using an GAEN App, 4. The Verification Server to provide verification codes to persons with positive tests and, 5. Lab integrations to provide verification code when a positive SARS-CoV-2 diagnostic test result is given. (Please see the attached document - WeHealth - Solution & Implementation Overview - State of Arizona 2020 1208.pdf for further information)

The internal dashboard is where public health administrators can manage and customize the app experience for

their jurisdiction population. The risk thresholds, messaging, and quarantine recommendations can be changed in real-time, and they can be further customized by county, region, university campus, etc.

WeHealth's custom iOS and Android App is compatible with the Google Apple Exposure Notification (GAEN) system that allows public health to enable Exposure Notifications within their jurisdiction. The app is available via the Apple App Store and the Google Play Store and is downloaded by end users. There is only one entitlement allowed per Country or State, and it requires state public health approval to launch.

The key server is used to facilitate the fully-anonymous, opt-in, Bluetooth exposure alerts. There is no user access to this server. It is managed by WeHealth, runs in the background and is only used by the mobile app to publish the last 14 days' Random IDs and lookup keys anonymously. No personal identifying information is shared only random data IDs. This is what ensures that WeHealth is fully compatible with any other app using GAEN anywhere in the world so that people can receive alerts of potential exposure even if they are outside of their own jurisdiction. We are also fully integrated with Association of Public Health Laboratories (APHL) for sharing keys within the US. This is entirely based on the specifications for the Google reference server.

The Verification Server enables the generation of verification codes that can be used to confirm a COVID-19 diagnosis. This can be done by case investigators, contact tracers, lab technicians, clinicians or other health professionals authorized to confirm a diagnosis. Currently the portal supports individual user accounts with their own usernames and passwords, and the users can be provisioned in bulk.

The WeHealth provides lab integrations to automate the delivery of verification codes directly along with test results via text, email, etc.

2.4 Has the existing technology environment, into which the proposed solution will be implemented, been documented?

Yes

2.4a Please describe the existing technology environment into which the proposed solution will be implemented.

2.5 Have the business requirements been gathered, along with any technology requirements that have been identified?

Yes

2.5a Please explain below why the requirements are not available.

3. PRE-PIJ/ASSESSMENT

3.1 Are you submitting this as a Pre-PIJ in order to issue a Request for Proposal (RFP) to evaluate options and select a solution that meets the project requirements?

No

3.1a Is the final Statement of Work (SOW) for the RFP available for review?

3.2 Will you be completing an assessment/Pilot/RFP phase, i.e. an evaluation by a vendor, 3rd party or your agency, of the current state, needs, & desired future state, in order to determine the cost, effort, approach and/or feasibility of a project?

Yes

3.2a Describe the reason for completing the assessment/pilot/RFP and the expected deliverables.

Performance has already been rigorously assessed by means of a pilot on the University of Arizona, including a beta test and monitoring of most of the indicators listed below. Results are very positive in terms of potential to reduce SARS-CoV-2 transmission, likely with a reduction in the reproductive number R(t) of order 10%.

3.2b Provide the estimated cost, if any, to conduct the assessment phase and/or Pilot and/or RFP/solicitation process.

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3.2e Based on research to date, provide a high-level cost estimate to implement the final solution.

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4. PROJECT

4.1 Does your agency have a formal project methodology in place?

Yes

4.2 Describe the high level makeup and roles/responsibilities of the Agency, Vendor(s) and other third parties (i.e. agency will do...vendor will do...third party will do).

DHS Staff :

-- Contract Oversight

-- Project Management

-- Program Resources (SME's)

-- ADHS contact tracers will serve as back up for providing test verification and verification codes for

   users if unable to receive a verification code from a laboratory directly.

WeHealth (Vendor) :

-- Maintain internal dashboard for public health to administer the app

-- Maintain mirror of APHL server

-- Maintain app on Apple, Google stores

-- Upgrade app with GAEN upgrades and Apple or Android OS upgrades as needed

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-- Work with commercial laboratories to implement verification code provisioning

-- Provide up to 10 regions to allow customization for these regions

-- Change app messaging or risk algorithms as ADHS or CDC guidance changes

-- Maintain help desk website for users

-- Provide metrics on app downloads, use, verification codes entered, opt in user metrics and feedback

4.3 Will a PM be assigned to manage the project, regardless of whether internal or vendor provided?

Yes

4.3a If the PM is credentialed, e.g., PMP, CPM, State certification etc., please provide certification information.

4.4 Is the proposed procurement the result of an RFP solicitation process?

No

4.5 Is this project referenced in your agency's Strategic IT Plan?

No

5. SCHEDULE

5.1 Is a project plan available that reflects the estimated Start Date and End Date of the project, and the supporting Milestones of the project?

Yes

5.2 Provide an estimated start and finish date for implementing the proposed solution.

Est. Implementation Start Date	Est. Implementation End Date
12/21/2020 12:00:00 AM	12/22/2021 12:00:00 AM

5.3 How were the start and end dates determined?

Dates provided

5.3a List the expected high level project tasks/milestones of the project, e.g., acquire new web server, develop software interfaces, deploy new application, production go live, and estimate start/finish dates for each, if known.

Milestone / Task	Estimated Start Date	Estimated Finish Date
Initial Implementation and launch - Integration - Onboarding - Configuration - Training - Provisioning - UAT - Launch	01/01/21	01/31/21 19
2021 Optional Deliverables - SMS Delivery - Push notification - In-app survey - Immunization Status - Additional disease(s) - Venue checkins - Additional API Integration - Additional Region - Live phone support - Custom Development & Implementation	01/01/21	12/31/21
2021 Platform Operations and Support - Customer support and SLA - App updates & improvements & maintenance - APHL Interoperability - International Interoperability - Reporting & Analytics	01/01/21	12/31/21

- Periodic changes to the exposure notification settings+		

5.4 Have steps needed to roll-out to all impacted parties been incorporated, e.g. communications, planned outages, deployment plan?

Yes

5.5 Will any physical infrastructure improvements be required prior to the implementation of the proposed solution. e.g., building reconstruction, cabling, etc.?

No

5.5a Does the PIJ include the facilities costs associated with construction?

5.5b Does the project plan reflect the timeline associated with completing the construction?

6. IMPACT

6.1 Are there any known resource availability conflicts that could impact the project?

No

6.1a Have the identified conflicts been taken into account in the project plan?

6.2 Does your schedule have dependencies on any other projects or procurements?

No

6.2a Please identify the projects or procurements.

6.3 Will the implementation involve major end user view or functionality changes?

No

6.4 Will the proposed solution result in a change to a public-facing application or system?

No

7. BUDGET

7.1 Is a detailed project budget reflecting all of the up-front/startup costs to implement the project available, e.g, hardware, initial software licenses, training, taxes, P&OS, etc.?

Yes

7.2 Have the ongoing support costs for sustaining the proposed solution over a 5-year lifecycle, once the project is complete, been determined, e.g., ongoing vendor hosting costs, annual maintenance and support not acquired upfront, etc.?

Yes

7.3 Have all required funding sources for the project and ongoing support costs been identified?

Yes

7.4 Will the funding for this project expire on a specific date, regardless of project timelines?

Yes

7.5 Will the funding allocated for this project include any contingency, in the event of cost over-runs or potential changes in scope?

Yes

8. TECHNOLOGY

8.1 Please indicate whether a statewide enterprise solution will be used or select the primary reason for not choosing an enterprise solution.

There is not a statewide enterprise solution available

8.2 Will the technology and all required services be acquired off existing State contract(s)?

Yes

8.3 Will any software be acquired through the current State value-added reseller contract?

No

8.3a Describe how the software was selected below:

The software was selected through a committee appointed by the Governor consisting of university representatives, technologists and researchers who vetted several apps, selected the COVID Watch Google Apple Exposure Notification solution based on numerous technical criteria (see documentation in appendix) and pilot-tested the app, yielding positive results that exceeded their expectations.

8.4 Does the project involve technology that is new and/or unfamiliar to your agency, e.g., software tool never used

before, virtualized server environment?

Yes

8.5 Does your agency have experience with the vendor (if known)?

Yes

8.6 Does the vendor (if known) have professional experience with similar projects?

Yes

8.7 Does the project involve any coordination across multiple vendors?

Yes

8.8 Does this project require multiple system interfaces, e.g., APIs, data exchange with other external application systems/agencies or other internal systems/divisions?

Yes

8.9 Have any compatibility issues been identified between the proposed solution and the existing environment, e.g., upgrade to server needed before new COTS solution can be installed?

No

8.9a Describe below the issues that were identified and how they have been/will be resolved, or whether an ADOA-ASET representative should contact you.

8.10 Will a migration/conversion step be required, i.e., data extract, transformation and load?

No

8.11 Is this replacing an existing solution?

No

8.11a Indicate below when the solution being replaced was originally acquired.

8.11b Describe the planned disposition of the existing technology below, e.g., surplused, retired, used as backup, used for another purpose:

8.12 Describe how the agency determined the quantities reflected in the PIJ, e.g., number of hours of P&OS, disk capacity required, number of licenses, etc. for the proposed solution?

Based upon the number of potential regions needed in the app, the number of laboratories for integration or needing point of care codes, the anticipated support needed for changes in app messaging, maintenance of the key server.

8.13 Does the proposed solution and associated costs reflect any assumptions regarding projected growth, e.g., more users over time, increases in the amount of data to be stored over 5 years?

Yes

8.14 Does the proposed solution and associated costs include failover and disaster recovery contingencies?   19

Yes

8.14a Please select why failover and disaster recovery is not included in the proposed solution.

Other

8.15 Will the vendor need to configure the proposed solution for use by your agency?

Yes

8.15a Are the costs associated with that configuration included in the PIJ financials?

Yes

8.16 Will any app dev or customization of the proposed solution be required for the agency to use the project in the current/planned tech environment, e.g. a COTS app that will req custom programming, an agency app that will be entirely custom developed?

Yes

8.16a Will the customizations inhibit the ability to implement regular product updates, or to move to future versions?

No

8.16b Describe who will be customizing the solution below:

Vendor Resources

8.16c Do the resources that will be customizing the application have experience with the technology platform being used, e.g., .NET, Java, Drupal?

Yes

8.16d Please select the application development methodology that will be used: /

Agile/Scrum

8.16e Provide an estimate of the amount of customized development required, e.g., 25% for a COTS application, 100% for pure custom development, and describe how that estimate was determined below:

Unsure at this time but the vendor by contract will be responsible for all customizations.

8.16f Are any/all Professional & Outside Services costs associated with the customized development included in the PIJ financials?

Yes

8.17 Have you determined that this project is in compliance with all applicable statutes, regulations, policies, standards & procedures, incl. those for network, security, platform, software/application &/or data/info found at aset.az.gov/resources/psp?

Yes

8.17a Describe below the compliance issues that were identified and how they have been/will be resolved, or

whether an ADOA-ASET representative should contact you:

8.18 Are there other high risk project issues that have not been identified as part of this PIJ?

No

8.18a Please explain all unidentified high risk project issues below:

9. SECURITY

9.1 Will the proposed solution be vendor-hosted?

Yes

9.1a Please select from the following vendor-hosted options:

Other

9.1b Describe the rationale for selecting the vendor-hosted option below:

The solution uses open source components maintained by Google that are optimized for the Google Cloud Platform.

9.1c Has the agency been able to confirm the long-term viability of the vendor hosted environment?

Yes

9.1d Has the agency addressed contract termination contingencies, e.g., solution ownership, data ownership, application portability, migration plans upon contract/support termination?

Yes

9.1e Has a Conceptual Design/Network Diagram been provided and reviewed by ASET-SPR?

Yes

9.1f Has the spreadsheet located at https://aset.az.gov/arizona-baseline-security-controls-excel already been completed by the vendor and approved by ASET-SPR?

Yes

9.2 Will the proposed solution be hosted on-premise in a state agency?

No

9.2a Where will the on-premise solution be located:

9.2b Were vendor-hosted options available and reviewed?

9.2c Describe the rationale for selecting an on-premise option below:

9.2d Will any data be transmitted into or out of the agency's on-premise environment or the State Data Center?

9.3 Will any PII, PHI, CGIS, or other Protected Information as defined in the 8110 Statewide Data Classification Policy be transmitted, stored, or processed with this project?

No

9.3a Describe below what security infrastructure/controls are/will be put in place to safeguard this data:

10. AREAS OF IMPACT

Application Systems

Database Systems

Software

Hardware

Hosted Solution (Cloud Implementation)

Security

Telecommunications

Enterprise Solutions

Contract Services/Procurements

11. FINANCIALS

Description	PIJ Category	Cost Type	Fiscal Year Spend	Quantity	Unit Cost	Extended Cost	Tax Rate	Tax	Total Cost
Initial Implementation & Launch	License & Maintenance Fees	Development	1	1	$550,000	$550,000	860.00 %	$47,300	$597,300
SMS Delivery Feature Cost	License & Maintenance Fees	Development	1	1	$80,000	$80,000	860.00 %	$6,880	$86,880
WeHealth Sonora Quest API	Professional & Outside Services	Development	1	1	$13,000	$13,000	0.00 %	$0	$13,000
Contingency funds for additional feature development and/or software costs	License & Maintenance Fees	Development	1	1	$560,000	$560,000	860.00 %	$48,160	$608,160
Platform Operations & Support	License & Maintenance Fees	Development	1	1	$750,000	$750,000	860.00 %	$64,500	$814,500
Platform Operations & Support	License & Maintenance Fees	Operational	2	1	$750,000	$750,000	860.00 %	$64,500	$814,500
SMS Delivery Feature Cost	License & Maintenance Fees	Operational	2	1	$40,000	$40,000	860.00 %	$3,440	$43,440
WeHealth Sonora Quest API	Professional & Outside Services	Operational	2	1	$3,000	$3,000	0.00 %	$0	$3,000
Platform Operations & Support	License & Maintenance Fees	Operational	3	1	$750,000	$750,000	860.00 %	$64,500	$814,500
WeHealth Sonora Quest API	Professional & Outside Services	Operational	3	1	$3,000	$3,000	0.00 %	$0	$3,000
SMS Delivery Feature Cost	License & Maintenance Fees	Operational	3	1	$40,000	$40,000	860.00 %	$3,440	$43,440

Base Budget (Available)	Base Budget (To Be Req)	Base Budget % of Project
$0	$0	0%
APF (Available)	**APF (To Be Req)**	**APF % of Project**
$0	$0	0%
Other Appropriated (Available)	**Other Appropriated (To Be Req)**	**Other Appropriated % of Project**
$0	$0	0%
Federal (Available)	**Federal (To Be Req)**	**Federal % of Project**
$3,841,720	$0	100%
Other Non-Appropriated (Available)	**Other Non-Appropriated (To Be Req)**	**Other Non-Appropriated % of Project**

$0	$0	0%	