



Topic: Enhancing California's Response for Current and Emerging Health Threats

Request Date: September 23, 2022

Information Requested:

The California Department of Public Health (CDPH) is seeking to replace the current immunization information system (IIS), CAIR2, with a more robust solution to enhance handling of large-scale vaccination events. The goal of the project is to enhance California's response resilience for current and emerging health threats for our constituents by allowing the CDPH Immunization Branch to better handle vaccination events of both small and large scale.

Platform

1. What is your IIS platform?
2. Who performs M&O on your IIS?
3. Does your IIS support identity management (Single Sign On)?
4. In what programming language is your IIS written?
5. On what database platform is your IIS data stored?
6. Does your IIS support FHIR?
 - a. If not, do you plan to implement FHIR?
7. What version of HL7 does your IIS support?
8. Have you used PHII's Requirements Traceability Matrix to either assess your existing IIS or determine the needs of a future IIS?

Implementation

9. How long has your IIS been implemented?
10. How many users does your IIS support?
11. How many patients are currently in your IIS?
12. How many immunizations are currently in your IIS?
13. Is your IIS located:
 - a. On Premises (physical servers)



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INFORMATION REQUEST

- b. Cloud based (AWS, Azure, Google Cloud)
- 14. How many VXU messages does your IIS process (monthly)?
- 15. To how many QBP's does your IIS respond (monthly)?
- 16. Do you have plans to upgrade/replace your IIS?

Requesting Member: Michael Powell

Responding Member(s): Sarah Aho (AK), Kim Gulliver (CO), Gary Wheeler (Envision), Baskar Krishnamoorthy (FL), James Hearn (Luminare.io), Tom Larson (M Corp), Sallie Sims (MI), Aaron Bieringer (MN), Philip Wilson (MS), Mary Woinarowicz (ND), Kathryn Cruz (NM), Melissa Mickle-Hope (NYC), Ivan Garcia (PR), Marie Hartel (TN), Jeff Chorath (WA)

Results:

Note: AIRA recognizes that our members and partners often create solutions or provide services that our members and partners may be interested in. We invite entities to join AIRA with the understanding that AIRA must maintain a neutral stance with regards to promoting specific products and services. AIRA does not endorse or imply any endorsement of any member or partner or their products and/or services.

Name	Title	Jurisdiction	What is your IS platform?	Who performs M&O on your IS?	Does your IS support identity management (Single Sign On)?	In what programming language is your IS written?	On what database platform is your IS data stored?	Does your IS support FHIR?	If you answered NO above, do you plan to implement FHIR? Please explain below.	What version of HL7 does your IS support?	Have you used PHR's Requirements Traceability Matrix to address the needs of existing IS or determine the needs of a future IS?	How long has your IS been implemented?	How many users does your IS support?	How many patients are currently in your IS?	How many immunizations are currently in your IS?	Is your IS located on	How many VUI messages does your IS process (monthly)?	To how many OBP's does your IS respond (monthly)?	Do you have plans to upgrade/replace your IS?	
Gary Wheeler	Director of Commercial Excellence	Envision Technology Partners	WOL, currently deployed in 12 jurisdictions with 1 implementation in progress.	Envision Technology Partners	Yes, it can as required by jurisdiction.	MS .NET Framework using C# and JavaScript	SQL Server	No	It is on our product roadmap, and we are actively engaging with the AHA community as FHIR standards and guidelines are emerging. Anticipate live implementation within the next few years.	HL7 v2.1 v3.1 v5 our solution is fully validated by AHA and our product is continually scaling ahead of emerging data exchange standards in the US community.	We have not directly used this but have indirectly responded to output from this through RFI requirements. We stay in close connection with AHA and CDC on emerging IS standards and our community F2M, Guam, Palau, RMI) with any program-specific needs to inform our product roadmap and ensure our product remains on the leading edge of nation and community standards.	We have been in the community for over 20+ years. Our product is deployed in AR, CO, CT, DE, IL, IN, KY, MD, NV, NH, NM, OK, PA, SC, TN, VA, WI, and WA. We have a strong track record of success in the community and are currently in progress. Additionally, our product is refreshed monthly with new application features and technology/architecture updates, so it remains a market leader through continual improvement.	Our target jurisdiction has 45,970	Across clients we manage over 65 million patients, largest single instance of 9.39 million patients.	Across clients we manage over 75.76 million immunizations	Cloud based (AWS, Azure, Google Cloud)	Largest current client is 2+ million messages per month	Largest current client is 3+million messages per month	As the premier CDRS IS platform in the market, we are constantly upgrading our solution and seeking out-world scenarios to inform the direction of our product roadmap to remain a functional and technological leader in this space.	
Marie Hartel	IS Manager	Tennessee	STC (Tenhiis)	STC	Yes, we do not have this enabled in Production. The SSO functionality with the STC product is limited, it does not integrate to our State Active Directory/ADAP	From STC. Currently written in Java, and the new modernized platform will be in C#. We have not used any of the modernized platform.	Oracle	No	Per STC "Yes"	2.5.1	No, we plan to get the 2022-2023 IPOM Activities	Since 2014	67,178	10,366,848	104,038,024	Cloud based (AWS, Azure, Google Cloud)	Average monthly volume = 947,251	Average monthly volume = 2,648,454	We have a 3 year contract with STC thru Jan 2024. We have allocated significant \$\$\$ in the IS Supplement award toward upgrades for modernization of the STC/On Platform.	
James Heam	Vice President, Operations	Vendor (LUMINARE.io)	Immunize	LUMINARE (LUMINARE.io)	Yes, SSO is supported (SAML 2.0)	Objective	Azure	Yes		HL7 v2	No	~3 years	Currently, the system supports over 9 million encounters in the system supporting 100+ client organizations	over 9 million encounters	1,490,858	Cloud based (AWS, Azure, Google Cloud)	At peak in April 2021, over 725,000.	Our IS does not respond to any OBP's	Yes, upgrades occur as needed on an ongoing basis.	
Jeff Charath	IS Manager	Washington Department of Health	STChealth STCONE	STChealth / DOH Internal	Currently Implementing	Currently written in Java, and the new modernized platform will be in C#	Oracle	No	Yes	2.5.1	Yes - STCHealth regularly assesses our systems capability based on the current published CDC Functional Standards and other traceability matrices, such as the PHR. STCHealth typically uses states use a combination of multiple sources in addition to the PHR Matrix.	2004	113,778	11,057,472	144,720,751	Cloud based (AWS, Azure, Google Cloud)	(Highest monthly volume) 1,584,370 (Average monthly volume) 196,952	(Highest monthly volume) 4,822,444 (Average monthly volume) 1,745,146	Perhaps - Vendor has history of not hitting contract metrics	
Mary Wronowicz	NDIS Manager	North Dakota	We are a grass-roots developed IS	Blue Cross/Blue Shield of North Dakota provides technical hosting, support, maintenance, and enhancements	Not currently but we are working on that initiative as part of our IS modernization.	We are a SQL based system	We use Microsoft .NET Technology and are moving to Microsoft's Azure cloud service	No	We want to wait for more regional standard guidance on the use of FHIR for immunization messaging from AHA's STC before planning any implementation.	2.5.1 release 1.4 and release 1.5	We have not used PHR's Matrix but did have a comprehensive architectural assessment completed in 2014-2015 that we have used as a roadmap for all upgrades and modernization work since.	1996	between 5,500-6,000	approximately 1.5 million	approximately 20 million	Cloud based (AWS, Azure, Google Cloud)	65,000-70,000	700,000-750,000	We are in the middle of a 5-year modernization project that is moving our system from on-premise hosted to fully cloud hosted, upgrading our .NET software, and enhancing our security system.	
Philip Wilson	IS Manager	Mississippi	STChealth STC ONE	STChealth	Yes	Currently written in Java, and the new modernized platform will be in C#	Oracle	No	Yes	2.5.1	Yes - STCHealth regularly assesses our systems capability based on the current published CDC Functional Standards and other traceability matrices, such as the PHR. STCHealth typically uses states use a combination of multiple sources in addition to the PHR Matrix.	since 2010	31,916 and growing	4,211,787 and growing	51,889,225	Cloud based (AWS, Azure, Google Cloud)	118,403	518,749	No	
Tom Larson	VP, Professional Services	North America	M Corp's IS, CAIR-Hub, is built on a Microsoft .NET back end and an Angular framework front-end, and an Azure SQL Server database. The solution is modularized to support separation of responsibility and is more scalable, flexible, and resilient architecture. Our approach avoids the pitfalls of a single monolithic platform as well as the functional limitations and compromises required for low code/no-code platforms. CAIR-Hub advances interoperability using Lynix Rhapsody integration engine for HL7/FHIR message processing. To support data quality, CAIR-Hub integrates both HL7's Immunization Calculation Engine (ICE) vaccine forecaster and Lynix EMP by NewState for patient matching and enterprise master patient	M Corp understands the criticality of California's immunization registry. We support a full MBO that has an M Corp at the helm but also recognize the need for partners to have the necessary access to the platform to both enhance and assist with the growth of the IS as needed. The M Corp team offers a full suite of roles to support the IS, including software, database, and deployment engineers; program management; project management; quality assurance management; database administrators; business and data analysts; Azure administrators; DevOps specialists; customer service specialists; business analysts; technical writers; and operational oversight. M Corp will also maintain the necessary partnerships with	M Corp's CAIR Medical Examination site was one of the first public facing web applications to implement and support CDPH's new identity management/sign solution. Microsoft Azure AD B2B/2C. Additionally, our IS can also support multifactor authentication to validate identity.	CAIR Hub is written in three programming languages - For the Angular framework (v3 or current), TypeScript for front-end user interface presentation. - For the Microsoft .NET framework, C# for back-end service-based architecture. - For Microsoft SQL Server, T-SQL for database administration	M Corp's IS stores data on a Microsoft SQL Server database and on a Snowflake data mart.	Yes	N/A	CAIR Hub utilizes Lynix Rhapsody for HL7 and FHIR integration. We support HL7 v2.5.1 - the current provider organization standard. The use of Rhapsody enables CAIR Hub to decouple the parsing and message processing of various message types and protocols from the core integration functionality. This enables CAIR Hub to be agile enough to respond to future message technologies and standards.	M Corp has used PHR's Requirements Traceability to develop the IS.	The new CAIR Hub effort is currently being built to address the IS needs of large states such as California. California is unique - certainly in its population size and diversity, but also in its select commercially IS solutions available have been well suited for medium to small states, but there is no solution that can properly scale to meet the volume and scalability required by California. M Corp has been working with CDPH's Immunization Branch for over 5 years and have deployed numerous IS ancillary systems, including CAIR Medical Examinations (CAIR-MEX) which manages the workflow for review and processing of childhood exemptions for school admission, and the new	The IS can support approximately 2,000,000 potential users.	There are approximately 46,800,000 patients currently on the CAIR IS.	There are approximately 435,000,000 immunizations currently in the CAIR2 IS.	Cloud based (AWS, Azure, Google Cloud)	CAIR Hub is built to scale based on need. The current system is being built to support 60M VUIs per month, which is approximately 2M per day. This is based on the volume experienced during peak of COVID-19 pandemic in California.	As mentioned above, the system is built to scale based on need. The current system is being built to support 60M OBP's per month, which is approximately 2M per day. This is based on the volume experienced during peak of COVID-19 pandemic in California.	M Corp uses DevOps for continuous development for the improvement of the IS. This approach assumes an Agile approach to continuous development and empowers our stakeholders to continue to tune and adapt to change.	
Melissa Mick-Hope	IS Manager	NYC	OR is a home grown IS	HLH consulting	No, but we are in the process of putting single sign on in place	Java	Postgres	No	Yes we are looking into implementing FHIR in our IS.	2.5.1 and a few 2.3.1 VHQ providers	Yes	25 years	3701 active providers/facilities reporting via the web-service (no flat file accounts) in 2021; 23,349 for website users.	84,100,489	852,905,628	On Premises (physical servers)	8,254,917	8,162,033	We are undergoing system updates as part of the data modernization initiative	
Baskar Vishwanath	Lead Business Process Consultant	Immunization Section, Florida DOH	Awarded Developed/Homgrown	Awarded, Immunization Section Staff and Contractors employed by the Section	We are phasing into SSO using Azure Active Directory. Estimated deadline to onboard all system users June 30, 2023.	Java/JSP, JSP, HTML	Intersystems Cache (now upgraded to Intersystems iRG platform)	No	Yes we will implement FHIR support in the future and are currently evaluating support to FHIR within the larger IS community. However, we do not have a definitive timeline.	HL7 v2.5.1 v3.1 v5 IS	We have looked into the PHR's requirement traceability matrix informally to assess our IS existing capabilities.	The current version of the IS has been in existence for 18 years (since 2005)	~40,000	~90 million patient records	~350 million vaccination records	On Premises (physical servers)	~2.9 million VUI transactions were handled in August 2022	~12.4 million OBP transactions were processed in August 2022	We recently upgraded our IS server infrastructure as part of COVID-19 related enhancements to the IS.	
Sarah Aho	Acting Program Manager	Alaska	STChealth STCONE	STChealth	Yes	Currently written in Java, and the new modernized platform will be in C#	Oracle	No	Yes	2.5.1	Yes - STCHealth regularly assesses our systems capability based on the current published CDC Functional Standards and other traceability matrices, such as the PHR. STCHealth typically uses states use a combination of multiple sources in addition to the PHR Matrix.	Since 2009	21,840	1,654,606	16,078,355	Cloud based (AWS, Azure, Google Cloud)	70,558 (average)	630,117 (average)	No	
Ivan Garcia	Deputy IS Manager	Puerto Rico	STC ONE	The vendor (STC Health)	Yes	Don't know.	ORACLE	No	But FHIR support is considered for future implementation in the IS Modernization Phase.	2.5.1 release 1.5	No, but no jurisdiction will start to use it this year.	1 year and 11 months	As many users as our jurisdiction need.	4,100,000	48,500,000	Cloud based (AWS, Azure, Google Cloud)	Do not have that information at this time.	Do not have that information at this time.	The IS is continuously upgraded and improved as part of the software evolution.	
Kim Gulver	CIS Interoperability Unit Supervisor	Colorado	Envision will answer for all clients	Envision will answer for all clients	Envision will answer for all clients	Envision will answer for all clients	Envision will answer for all clients	No	Envision will answer for all clients	Envision will answer for all clients	Envision will answer for all clients	Colorado moved to Envision's platform in 2011	August 2022 - 9,198 Active Users (I don't sure how many inactive)	August 2022 - 8,364,284	August 2022 - 9,452,094	On Premises (physical servers)	September 2022 - 1,122,494	September 2022 - 5,041,756	Envision will no longer support On Premises so we will need to transition to the Azure cloud environment by December 15, 2023. No plans to replace our IS.	
Aaron Beringer	Interoperability Lead	Minnesota	WIR platform	We are mostly supported by MN state IT staff but we have some external contract staff for code development.	Not currently but we are looking at implementing it in the future.	Mostly Java, Some C, HTML, Javascript, PL/SQL, and JSP.	Oracle	No	Unlikely. We do not plan to change our immunization update/burns infrastructure to use FHIR but would consider some kind of FHIR wrapper for our bulk query service or FHIR API for new features that are well supported by using FHIR.	2.3.1, 2.4, 2.5.1 r1.4, and 2.5.1 r1.5	We have done a high-level assess of our existing IS using the PHR's Requirements Traceability Matrix to determine future needs when grant writing.	20 years	We currently have 15,405 active users	9,661,423 total living people	8,644,286	130,596,574	Cloud based (AWS, Azure, Google Cloud)	Some place between 450-843K each month for the last 6 months but average about 600K	Some place between 4 million and 3 million each month for the last 6 months but average about just shy of 5 million.	We are very active in the WIR transformation project to build a new WIR in 2023. We are planning to adopt a 4 as soon as it meets our needs, and we can implement it.
Kathryn Cruz	NMISIS Manager	New Mexico	Envision	Envision	No	Unknown	Cloud hosted	No	No	2.3.1 and 2.5.1	No	since 2016	~30k	~2.8 million	~35 million	Cloud based (AWS, Azure, Google Cloud)	~270k	~1 million	No	
Sales Sms	External Public Health Informatics, Interoperability, Data Steward, and Health Systems Analyst	Michigan	MCIR	Cryptal Lighting	Yes	Java, PL/SQL	Oracle	No	--	2.5.1	No	24 years	41,000	13 mil	187 mil	On Premises	2 Million	5.5 Million	upgrade	