

Med-QUEST Integrated Analytic Data Platform

RFI-MQD-2020-014

Question & Answers

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Question Topic/Category	Question	Answer
Budget	What is the anticipated budget for this project?	The purpose of this RFI is to obtain information from the vendor community on the estimated costs of vendors' recommended solutions, tools and services.
Budget	Has funding for this project been secured?	HAO does not have a set budget. This project is currently in the information gathering phase.
Budget	Is this project funded under a federal grant or federal match (APD), or is this project entirely state funded?	HAO does not have a set budget. The funding source(s) have not been finalized. This project is currently in the information gathering phase.
Budget	What is the budget allocated for the total project? For the Master Patient Index component?	HAO does not have a set budget. This project is currently in the information gathering phase.
Budget	Does the HAO already have funding secured and is there a timeline that you would be willing to share?	HAO is part of the state's Medicaid agency and is eligible for federal match funding for these types of initiatives. That said, the funding source(s) for this project have not been finalized. The timeline for planning has not yet been finalized, but we anticipate this planning work to conclude in 2021.

Current MQD Environment	Is there an Integration Engine already in use at Med-QUEST? Which one?	No, there is not an integration engine in use at Med-QUEST.
Current MQD Environment	What types of data sharing agreements are in place between the Med-QUEST division and other departments within state of HI.	This RFI is meant to assist HAO in identifying the technical architecture, technical components and analytic features desirable in a future integrated analytics platform. Data governance and data stewardship are outside the focus of this RFI and are being addressed separately by HAO.
Current MQD Environment	What is your current data integration& storage frameworks?	Each data source currently has its own storage framework and they are not integrated.
Current MQD Environment	What are the analytical reporting systems today?	Each disparate data source has its own analytical reporting system, if any. For example, the MMIS data is available to HAO analysts via hard-coded reports and via limited data cubes in Cognos. Other systems use OBIEE or Power BI.
Current MQD Environment	How are different levels of user skill allocated access to the data today?	Each data source exists separately, and therefore, has different ways in which users are granted access. As outlined in the RFI, HAO envisions that the future integrated platform will include permissions-based controls that grant or limit access to various data layers.
Current MQD Environment	Are there any data science models in use today? If so, were they built in-house or purchased from vendors?	The existing data science models and solutions do not meet the analytic needs of HAO.
Current MQD Environment	The RFI states that approximately 830,000 member lives are covered each year in various programs (State employees; Medicaid; FFS Medicare; and Medicare Advantage). Can the 830,000 lives be broken out by each of the four segments?	Medicaid – 350,000 EUTF (State Employees) – 210,000 Medicare FFS – 150,000 Medicare Advantage – 120,000

Current MQD Environment	Could the state share more about the technology platforms that are already in place for the state Medicaid and APCD systems.	The purpose of this RFI is to identify solutions to creating an integrated solution that pulls from and unites the following data resources: • The HHDC (APCD) data, which is collected and processed by the University of Hawaii and then stored within an enterprise commercial cloud. • The Medicaid Management Information System (MMIS) which is hosted on-premise by the State of Arizona on a shared, but partitioned, server and accessed through BI tools in Hawaii. • The Medicaid eligibility system, also known as the Kauhale On-Line Eligibility Assistance (KOLEA) System, which is built on an advanced Oracle Shared Services platform, with Siebel OneGate as the client relationship management (CRM) front end. • Other not yet identified data sources which exist on their own separate platforms.
Current MQD Environment	Is HAO data always co-located in Hawaii?	See answer above. The future integrated platform is expected to co-locate data from the desired data sources.
Current MQD environment	What are your primary challenges with existing data architecture, management & reporting?	While rich in data, HAO struggles with disconnected data sources which limit how the data can be pulled together, and in turn, diminishes Medicaid's ability to engage in comprehensive, data-driven decision making. Population health analytics and reporting are currently dispersed across the Medicaid Enterprise. Some reports are generated from systems such as the Medicaid Management

		Information System (MMIS) or the eligibility determination system (KOLEA), while others are produced by individuals from their own siloed databases or spreadsheets.
Data Governance	How is the data management done today? Any data stewards?	This RFI is meant to assist HAO in identifying the technical architecture, technical components and analytic features desirable in a future integrated analytics platform. Data governance and data stewardship are outside the focus of this RFI and are being addressed separately by HAO.
Data Governance	Any data governance?	This RFI is meant to assist HAO in identifying the technical architecture, technical components and analytic features desirable in a future integrated analytics platform. Data governance and data stewardship are outside the focus of this RFI and are being addressed separately by HAO.
Data Governance	What is the maturity of your data governance? Do you have a data governance and stewardship strategy and process in place?	This RFI is meant to assist HAO in identifying the technical architecture, technical components and analytic features desirable in a future integrated analytics platform. Data governance and data stewardship are outside the focus of this RFI and are being addressed separately by HAO.
Data Security	What are the current security measures and systems that keep electronic health records confidential? Security at the attribute level? Role level?	Please see our response for #52. Security solutions at this time are unique to each disparate data system. HAO is interested in hearing about strategies, services and tools to ensure security is maintained around a new integrated analytic infrastructure.
Data Sources	Are Population Health, Social Determinants of Health, and insights from non-clinical data important to Med-QUEST? If so, can you elaborate?	Population health, SDOH, and insights from non-clinical data are certainly of interest to Med-QUEST as outlined in the mission of

		Med-QUEST 'Ohana Nui Project Expansion (HOPE) program, the five-year initiative to develop and implement a roadmap to achieve a vision of health families and health communications. The specific data sources that will be integrated in the future analytics platform have not yet been identified.
Data Sources	How many systems generate security tokens and why?	The two principal data sets to be integrated (MMIS and HHDC) do not generate security tokens, since they will be extracts from existing data warehouses. Additional data sets will typically also be flat files delivered via SFTP, not direct connections to live applications.
Data Sources	Data Size: From how many source tables data needs to be pulled into a data warehouse/ Data lake?	The total number of data sources and total volume of data has yet to be determined but will include extracts drawn from the data contained within MMIS, the Medicaid eligibility determination system and the HHDC. Please refer to question #10 on providing cost estimates.
Data Sources	Data Size: What is the size of the data in Giga bytes? For the sources that are identified would it be in the range of 4000-6000 Giga bytes? More or less?	The current data is less than a terabyte and expected to grow 200-500GB/year.
Data Sources	Data: Would the incoming data be only structured data or a combination of structured and unstructured data that need to be stored and processed?	All the data in the initial build is expected to be structured data. Future projects may include unstructured data.
Data Sources	When will the number of data sources and types of data to be imported into the platform be finalized?	The timeline for planning has not yet been finalized, but we anticipate this planning work to conclude in 2021.
Data Sources	Is there an upper limit of the number of data sources to be ingested?	The desired solution should be flexible enough to ingest as many data sources as the state finds useful to fulfill reporting and

		business needs. HAO will work closely with any future vendors to determine whether data source integration is reasonable and appropriate.
Data Sources	Is the clinical data from the HHIE in one format (such as a C-CDA), or is it in a variety of formats (ADT, C-CDA, etc.)?	Initial build is not expected to include unstructured clinical data.
Data Sources	Has the clinical data from the HHIE been parsed and normalized at the HHIE, or is this clinical data being passed through the HHIE in raw format from multiple, disparate EHRs/EHR outputs?	Specific data elements haven't yet been discussed or identified but may include elements of structured clinical data.
Data Sources	Will the HHIE be the single clinical data source? Or will there be other clinical data sources outside of the HHIE?	Specific data elements haven't yet been discussed or identified but may include elements of structured clinical data.
Data Sources	Is there an Enterprise Service Bus (ESB) in place to aggregate and connect all of the trading partners and connections, or will one be required for this project?	A connection between these, and other data sources, will be a key component of this project. HAO is open to various connection technologies.
Data Sources	What is the percentage of data coming from the mentioned sources, and what other data sources exist?	The desired solution should be flexible enough to ingest as many data sources as the state finds useful to fulfill reporting and business needs. The total volume of data that the integrated platform will integrate, has not yet been determined. Neither have all the data sources for integration been identified.
Data Sources	When will the total volume of incoming data from each source be determined? Can bidders receive volume of records and record or message formats according to each planned source?	The total volume of data has yet to be determined. Pg 5 of the RFI refers to the number of claims in the two primary data sources.
Data Sources	How many known systems of records there today?	The total volume of data that the integrated platform will integrate, has not yet been determined. Neither have all the data sources for integration been identified.

Data Sources	How will you capture claims data?	Medicaid claims data will continue to be collected via the MMIS system and HHDC will continue to collect state employee claims data, Medicare Fee for Service and Medicare Advantage claims. The future platform may ingest an extract or feed from these systems or may ingest claims data directly.
Data Sources	Are there any social determinates being captured into an existing data base? What are they?	Yes, certain SDOH data elements are captured – at least in part - by existing databases (e.g. race, ethnicity, Medicaid program eligibility, address, age, immunization status, etc.)
Data Sources	Any Healthcare ontology data	No.
Data Sources	To what extent, if any, is the data integration process automated?	HAO is seeking vendors to provide insights into tools, strategies and services to integrate the data.
Data Sources	RFI Section: Business Need, Page #5, "HHDC data includes state employees, fee-for-service Medicare and Medicare Advantage." Question: Should the vendor's system be capable of aggregating and analyzing data generated from your State employee health insurance, Hawai'i Employer-Union Health Benefits Trust Fund (EUTF)?	Hawaii Employer-Union Health Benefits Trust Fund (EUTF) data is the state employee health insurance data. The HHDC will collect the EUTF data and transmit a structured extract or ingest directly into the future integrated platform.
Data Sources	RFI Section: Business Need, Page #5, "The future platform must be able to ingest and integrate multiple data sources in various formats." Question: Does the State consider your HIE, Health eNet, a future data source, and if so, what clinical data does the State expect to receive from it?	Yes, future data sources may include the HIE. Specific data elements haven't yet been discussed or identified but may include elements such as lab data, ADT feeds, and other data elements contained by the HIE.
Future Desired Platform	Does HAO have current private cloud services?	No.
Future Desired Platform	Which cloud provider does HAO prefer?	HAO does not have a cloud provider preference and would accept Google Cloud, Amazon Web Services (AWS), Microsoft Azure or equivalent.

Future Desired Platform	Will the state accept a solution whereby hosting is being performed by the Vendor using AWS (Amazon Web Services)?	HAO prefers a solution where user and system access can be managed by HAO staff. HAO does not have a preference as to providers of this service and would accept Google Cloud, Amazon Web Services (AWS), Microsoft Azure or equivalent.
Future Desired Platform	Would HAO consider a solution that is wholly hosted and managed by the vendor, instead of an on-premises or HAO cloud-hosted environment?	In general, HAO's preference is to retain its flexibility to determine the extent to which it chooses to self-manage each component of the system vs. delegate the management to a vendor. HAO prefers a solution where user and system access can be managed by HAO staff. HAO does not have a preference as to providers of this service and would accept Google Cloud, Amazon Web Services (AWS), Microsoft Azure or equivalent.
Future Desired Solution	Would your team like to be able to track encounter and reason for visits data?	HAO welcomes information about all technical components or analytic features that can add value or support to HAO's business or analytic needs. Encounters are currently included in the MMIS and HHDC claims data, which does include admitting diagnosis and services performed.
Future Desired Solution	What is the data latency expectation, from initial contact to analysis?	The requirements for how quickly data must be processed, integrated, and made available via the future integrated data platform is not known at this time.
Future Desired Solution	Do you prefer a phased approach for implementation?	Yes.
Future Desired Solution	Would HAO consider a solution where user management and system access are managed by the vendor rather than HAO?	In general, HAO's preference is to retain its flexibility to determine the extent to which it chooses to self-manage each component of the system vs. delegate the management to a vendor. HAO prefers a solution where user

		and system access can be managed by HAO staff. However, all proposed solutions will be considered. Staffing requirements for various proposed models of shared management will ultimately drive some of our decision making.
Future Desired Solution	We would like to seek confirmation on our interpretation of the following “HAO strongly prefers technology components that can be implemented/installed in an MQD-managed environment, as either on-premise or cloud-based solutions. All the solution components presented must include the capability to be managed or system administered by MQD, in either a purchased or leased model. The HAO is not seeking a single "black-box" technical solution that is entirely managed by the vendor.” • Our interpretation is that our cloud hosted platform would meet your needs, but could you expand upon what a managed environment means to you and what you are hoping to have control over?	In general, HAO’s preference is to retain its flexibility to determine the extent to which it chooses to self-manage each component of the system vs. delegate the management to a vendor. HAO prefers a solution where systems administration, database administration, ETL, indicator definitions, reporting and analytics tools can be managed by HAO staff. However, all proposed solutions will be considered. Staffing requirements for various proposed models of shared management will ultimately drive some of our decision making.
Future Desired Solution	Assuming the vendor is proposing the hosted solution what administrative controls is MQD expecting to have as part of this project?	In general, HAO’s preference is to retain its flexibility to determine the extent to which it chooses to self-manage each component of the system vs. delegate the management to a vendor. HAO prefers a solution where systems administration, database administration, ETL, indicator definitions, reporting and analytics tools can be managed by HAO staff. However, all proposed solutions will be considered. Staffing requirements for various proposed models of shared management will ultimately drive some of our decision making.
Future Desired Solution	Are you considering creating and maintaining a master Provider Record with a Provider Registry? Would you like to? <i>This involves</i>	HAO welcomes information about all technical components or analytic features

	<i>feeding a separate Provider Registry with Provider data which is organized and maintained under a Golden Record, similar to how it's done in an EMPI. This can be cross-referenced with public databases like NPPES or internal rosters or portals to maintain up to date address, credential, and specialty information.</i>	that can add value or support HAO's business or analytic needs. Moreover, provider information is included in some of the currently disconnected MQD databases, including the HHDC and HPMMIS, so a Master Provider Directory may be appropriate.
Future Desired Solution	Do you have any current tools (Data integration or BI tools) that you plan to utilize?	HAO welcomes information about all technical components or analytic features that can add value or support HAO's business or analytic needs. HAO is not looking for solutions that leverage any existing tools.
Future RFP	What is the anticipated release date for a formal solicitation (i.e. RFP, RFQ) for this project?	HAO has an anticipated release date of early 2021.
Future RFP	Do you expect to issue one or more RFPs from this RFI?	This decision has not yet been made.
Future RFP	Will you be shortlisting vendors from this RFI or will the RFP be open when issued?	Participation in this RFI process is optional and is not required in order to respond to any subsequent procurement by DHS.
General	What is the goal of the service?	See background section of the RFI – "HAO envisions developing an integrated analytics data platform within MQD. HAO envisions that the integrated platform will standardize and align data across sources; provide enhanced analytic and reporting capabilities; publish dashboards and interactive reports; and, promote data sharing across agencies. With this capacity, MQD will be better able to drive transformation towards HOPE program goals, improve services to beneficiaries, and support more robust and insightful performance evaluation and oversight."
General	Who are all the participating vendors in this RFI?	As outlined in the Use of Information section of the RFI, DHS, MQD and HAO are not obligated to share information obtained

		through this RFI. The RFI is meant for information gathering only.
General	When is the implementation considered a success?	The integrated platform would be a success when all data can be integrated, all technical components and analytic components are harmonious, and reporting and analytic functionality is working and useable. Responders are encouraged to describe the components they can offer and the differentiated value of the components.
Other	Is your team interested in leveraging location intelligence? Location Intelligence (aka Geocoding) involves receiving corrected fully standardized USPS addresses after submitting incomplete or mistyped address information to the EMPI.	HAO welcomes information about all technical components or analytic features that can add value or support HAO's business or analytic needs. Vendors are encouraged to propose data quality enhancing functionality their products offer such as the one described here that can improve analytics.
Other	Would it be helpful to your team to have the ability to derive next of kin data from demographic data and HL7 feeds? <i>In a Relationship registry you can show connections like emergency contact, guarantor, siblings, twin, and parent to provide a unified, longitudinal portrait of a family unit.</i>	HAO welcomes information about all technical components or analytic features that can add value or support HAO's business or analytic needs. Vendors are encouraged to propose data quality enhancing functionality their products offer such as the one described here that can improve analytics.
Other	Would it be helpful to your team to have the ability to derive and show relationships between patients and their care providers? <i>In a Relationship registry that is integrated with a Provider registry, you can show patient to provider relationships or provider to provider relationships. This allows a centralized view of the multiple touch points the patient has throughout providers across the state and reasons for their visit to measure progress or repetitive encounters. It</i>	HAO welcomes information about all technical components or analytic features that can add value or support HAO's business or analytic needs. Vendors are encouraged to propose data quality enhancing functionality their products offer such as the one described here that can improve analytics.

	<i>can also support creation of Care Teams and is useful for patient assignment or attribution.</i>	
Other	How many environments should Vendors provide as part of the scope of this project? (i.e. development, test, model office, sandbox, production)	HAO welcomes information about all technical components or analytic features that can add value or support HAO's business or analytic needs. The future platform is expected to have multiple environments, so further information on the options available to HAO would be extremely helpful.
Project Timeline	Are there any milestones that need to be taken into account or a date in which the solution needs to be operational?	A project timeline has not been finalized as HAO is in the information gathering phase.
Project Timeline	When would Med-QUEST ideally hope to go live with the final solution?	A project timeline has not been finalized as HAO is in the information gathering phase.
RFI Business Need Section	Per Business Need #9, HAO prefers solutions where the need for ongoing post-implementation support from the vendor is minimal. Will the state please clarify if this constitutes the majority of operations and indicate which areas this applies to? When operations issues arise, to what degree is the Vendor expected to be accountable to resolve issues? How does the state anticipate Vendors may need to be accountable for resolving and correcting issues?	HAO anticipates that vendors will continue to provide basic operational support. In general, HAO's preference is to retain its flexibility to determine the extent to which it chooses to self-manage each component of the system vs. delegate the management to a vendor. HAO is interested in a platform which gives the ability to specify the level of operational self-support and modify over time as appropriate. However, all proposed models will be considered. Staffing requirements for various proposed models of shared management will ultimately drive some of our decision making.
RFI Business Need Section	Related to Business Need #9, will MQD please define and clarify what minimal operations support encompasses?	Vendor support will likely be heavily sought in the implementation phase of the project. HAO anticipates that during post-implementation, vendors will continue to provide basic operational support (i.e. software updates and maintenance as needed, troubleshooting, and

		training/technical assistance as needed). Beyond basic operational support, HAO is interested in a platform which gives the ability to specify the level of operational self-support and modify over time as appropriate. However, all proposed models will be considered. Staffing requirements for various proposed models of shared management will ultimately drive some of our decision making.
RFI Business Need Section	Per Business Need #1, we understand a total number of data sources and types of data are not yet finalized; however, can the state please provide an estimate to assist Vendors for RFI quoting purposes?	Refer to Background section of the RFI.
RFI Response	Is an executive summary describing our overall response allowable?	Please follow the format of the questions, in your response, including the page limitations. If a brief executive summary can be included under of the answers, that is fine as long as its within the prescribed page limits.
Staffing	How many data integrity stewards do you have on your team? How many integration or interface staff? Do you outsource any of your technical support and to whom?	Responders should describe the level and skill of state staff support that would be required to stand up, operate, and maintain the component(s) and/or the level of ongoing involvement that HAO would need to retain from your organization or other contractors. These are questions #3 and #4, respectively.
Staffing	Is the state looking for vendor's familiarity to design and implement such tools or is the state also interested in end user training?	This RFI is meant to assist HAO in identifying the technical architecture, technical components and analytic features desirable in a future integrated analytics platform. Responders are asked to describe the level and skill of state staff support that would be required to stand up, operate, and maintain

		the component(s) and/or the level of ongoing involvement that HAO would need to retain from your organization or other contractors. This may include end-user training. Vendor support will likely be heavily sought in the implementation phase of the project.
Staffing	Per Business Need #9, please indicate if Vendor costing should be based on minimal operations support or more traditional MMIS operations support as is typically done with most states?	The cost estimate should be based on the component as described by the responder. Responders are welcome to propose various levels of ongoing support that they think will best suit HAOs needs, if they describe this support in question # 4. HAO is not seeking to rebuild it's MMIS. The integrated analytics platform will be designed to support analytics needs, and extract needed data from MMIS. Therefore, the support offered to more traditional MMIS operations is not applicable.
Staffing	Could you give some examples or use cases of self-management scenarios that Med-QUEST is requesting?	In question # 3 of the RFI, HAO seeks input on the level of state staff support that would be required to maintain the component(s). Question # 4 seeks input on the level of ongoing maintenance that HAO would need from your organization. In general, HAO's preference is to retain its flexibility to determine the extent to which it chooses to self-manage each component of the system vs. delegate the management to a vendor.
Technical Component: Master Person Index	Does HAO manage duplicate records today? How?	Duplicate records are not a current challenge for HAO as all patients within MMIS have a unique Medicaid identifier and no other data has yet been integrated with it. The future integrated data platform will require a Master Person Index solution.

Technical Component: Business Intelligence Tools	From a pricing perspective, can you provide total potential user counts for BI and how many records will there be for the Master Person Index?	The approximate volume of covered lives in Hawaii is 830,000. The expected number of BI developers is between 10-20 and the number of viewers is not yet determined.
Technical Component: Data Visualization Tools	Reports and Visualizations: How many reports and visualization to be created as part of this project?	While HAO seeks input on data visualization tools, the number of reports and visualizations is not stipulated.
Technical Component: ETL	Quality: How many quality rules already identified that need to be implemented for quality checks? Do you have a preference for open source or COTS products?	The number of quality checks is not stipulated. HAO strongly prefers open source, “non-black box” solutions. Ideal solutions will make the detailed methodology available for review and modification by HAO.
Technical Component: Master Person Index	Longitudinal View – Can you describe some use cases for how the longitudinal views would be used to see data, services and programs for Medicaid members?	An example of a potential use case is understanding a person's healthcare utilization before and after certain administrative or health events.
Technical Component: Master Person Index	For the Master person index, how do you see the systems of record being impacted by the Master person indexes?	The MPI will be used to link data sets within the future integrated platform, however, if the MPI can add value to the original data source (i.e. system of record) that may be of interest as well.
Technical Component: Master Person Index	What are the patient populations that need to be matched, and could you provide more insight into the challenges or barriers Med-QUEST is having in achieving this today?	HAO will need Master Person identity management across all data sources integrated in the future platform. If external data sources are integrated in the future, HAO will work closely with the vendor(s) to determine whether matching is appropriate or reasonable.
Technical Component: Master Person Index	Does MedQuest currently have an existing Master Patient Index or identity management solution? If so, what impact will the MPI solution have on this project?	HAO will need Master Person identity management across all data sources integrated in the future platform. No such enterprise-wide solution currently exists.

Technical Component: Master Person Index	What other departments/connections have an MPI or identity management solution in place today? What impact will these solutions have on this project?	Some of the existing databases have their own methodology for patient identification. For example, MMIS data leverages Medicaid ID number. The future solution will require an identifier across data sources.
Technical Component: Master Person Index	For the Master person index, how do you envision using the matching of persons across dataset boundaries?	HAO will use an MPI to match patients across various datasets using available common keys, and track patients longitudinally. An example of a potential use case is understanding a person's healthcare utilization before and after certain administrative or health events.
Technical Component: Master Person Index	For the Master person index, do you see this as a process that is used to link the data from various data sources across gov't or other entities?	Yes. It should link data across all identified data sources, if appropriate.
Technical Component: Master Person Index	Longitudinal View – Do you see this data being derived from MMIS claims and other data to build out this longitudinal view?	HAO envisions tracking patients longitudinally using whatever data sources are available and integrated.
Technical Component: Master Person Index	Are you considering referential matching for patient matching? Do you have previous experience with 3rd party public data and understand both its value and shortcomings? <i>For example, if you have patients under 18 years old, you cannot exchange public data on them rendering referential matching useless due to the Child Online Protection Act.</i>	HAO is open to learning about all available options for fulfilling the Master Person Index requirement. Vendors are encouraged to propose data quality enhancing functionality their products offer such as the one described here that can improve person matching.
Technical Component: Master Person Index	Under Business Need on page 5: HAO estimates the annual number of Covered Lives is 830,000. *Although 10 years of data from 2009-2019 will be loaded into the integrated platform. a. Does HAO expect the MPI to create a unique identifier for all persons from 2009-2019 that can be distributed across data sources? b. What is the total number of unique lives both covered and uncovered which will require a unique identifier? c. Does HAO expect the MPI to maintain identities for uncovered	HAO expects to maintain a unique MPI for all years of available data and for all unique lives covered across the datasets integrated within the platform. Estimates on total lives are provided in response to Question #1.

	lives or formerly covered lives as well as covered lives annually? If so, is the estimated number inclusive of uncovered lives?	
Technical Component: Master Person Index	Is there any householding systems?	A Master Person Index has been identified as a possible requirement for the future platform. Any additional components or analytic features that may bring value beyond just an MPI, should be described in your response.
Technical Component: Metadata Management Tools	Meta data management tools refers to collecting and storing information and describes facets of each data source. Do you consider this to be like a data dictionary?	Yes, a data dictionary could be one component of a metadata management tool. HAO is interested in reviewing all features of available meta data management tools.
Technical Component: Metadata Management Tools	Meta data management tools refers to collecting and storing information and describes facets of each data source. Can you provide more details on how you see this meta data management tool will be used?	HAO is interested in documenting data lineage. Key features of a meta data management tool may include determining which data source a field was derived, how a field was calculated or how/when the data was processed into the platform. HAO is interested in reviewing all features of available meta data management tools.
Technical Component: Program Accountability Tools	What is meant by program accountability (bottom, page 8)?	Program accountability tools include fraud, waste, and abuse detection algorithms, program integrity tools, and calculators to support various analytics.
Technical Component: Quality Rules Engine	What is the system managing HEDIS data today?	HAO does not currently have a system managing HEDIS data.
Technical Component: User Management	Do third party researchers or state selected vendors have access to this data? Will there be compliance or training related to this?	HAO envisions the data in the future integrated analytics platform would be used primarily by internal state agency staff. The solution should be flexible enough that specific/controlled access may be granted to third party researchers or state selected vendors, as needed.

RFI Business Need Section	It states: HAO is only interested in services or solutions that have already been used and have proven their value elsewhere. Does HAO only want solutions with direct and specific health-care management deployments? Or does HAO simply want to exclude non-commercial system (e.g., research, non-production, test systems).	HAO is only interested in services or solutions that have been already used and have proven their value elsewhere, regardless of industry.
RFI Business Need Section	Under the first business need (1) it defines the different types of source data. Besides the ones accessed directly through an API, are the majority of these simple a bulk dump (CSV, XML, JSON) from their native systems? Does HAO maintain a staging platform or interim repository to store these dumps?	Yes, the majority of these sources are bulk file transfers, as well as some API to access data. HAO is interested in responses proposing all components of the architecture, inclusive of ESB and data staging repositories.
Technical Component: Quality Rules Engine	For the Quality Rules Engine - It states: generate quality measures based on various specifications (e.g. HEDIS, Medicaid Core Set, and other off the shelf measures from various sources). Does HAO have a definitive list of "metrics" it requires to get calculated? Has this been formalized?	HAO is looking for standardized measure sets (e.g. HEDIS, Medicaid Core Set) where definitions and algorithms already exist in the public domain.
Technical Component: Master Patient Index	In the creation of a MasterPerson Index, does HAO have any existing heuristics used to define the values and thresholds used to accomplish this calculation? If so, will HAO share the protocols used for these calculations?	Some of the existing databases have their own methodology for patient identification. For example, MMIS data leverages Medicaid ID number. In those cases, the methodology can be shared. The future solution will require an identifier across data sources.
Technical Component: Predictive Analytics	For supporting the "predictive analytics" requirements, does HAO have existing ML (machine learning) modules or statistical packages currently in use? Would direct interfacing to platforms such as "R" satisfy the necessary framework for HAO to define/customize their own models/routines?	HAO team currently works with R and SAS and does not have existing machine learning modules. HAO prefers a flexible solution that could incorporate multiple statistical packages or language.
Technical Component: Data Masking	To address the "data masking" requirement, does HAO have a list or inventory of the information or related data-elements that are considered "confidential" and is there any type of hierarchy associated with different degrees of information (e.g., a SSN vs a NAME)?	Data masking solution should be able to produce a variety of limited and deidentified data sets.

Data Governance	Does HAO have a defined/preferred time for when or how frequently the data-governance tools should be updated? Is it expected to occur daily, weekly, monthly, quarterly, or whenever the online content is updated?	This RFI is meant to assist HAO in identifying the technical architecture, technical components and analytic features desirable in a future integrated analytics platform. Data governance and data stewardship are outside the focus of this RFI and is being addressed separately by HAO. HAO has not made decisions on frequency on updated to data governance tools.
Data Security	Can HAO explicitly list the required privacy and security regulations required for data-protection under this project?	The future integrated platform must comply with all applicable state and federal law.