State of Rhode Island – Department of Administration, Division of Purchases

Solicitation Information

4 Jan 06

RFP #: B05941

TITLE: RI Statewide Health Information Exchange (HIE) and related services

OPENING DATE AND TIME: 21 Feb 06 @ 2:00 PM (EST)

PRE-BID/PROPOSAL CONFERENCE:	**Yes**
DATE: 20 Jan 06 @ 2:00 PM (EST)	
MANDATORY:	**No**
LOCATION:	**Department of Administration, Division of Purchases (Bid Room)** **One Capitol Hill** **Providence, RI 02908**

Questions concerning this solicitation may be e-mailed to the Division of Purchases at Questions@purchasing.state.ri.us no later than 12:00 PM Noon (EST) on 17 Jan 06. All correspondence must be in Microsoft Word format. Please reference the RFP Number on all correspondence. Answers to questions received, if any, will be discussed at the pre-proposal meeting and included in the meeting summary as well as posted on RIVIP as an addendum to this RFP. Vendors must register on-line at the State of Rhode Island Purchasing Website at www.purchasing.ri.gov/RIVIP/Home.asp.

BOND REQUIRED: Yes

THERE MAY BE ADDITIONAL ADDENDA TO THIS BID/RFP AT ANY TIME BEFORE THE OPENING DATE AND TIME. IT IS THE **VENDOR'S RESPONSIBILITY** TO ***CHECK*** AND ***DOWNLOAD*** ANY AND ALL ADDENDA. AN ADDENDUM TO A BID/RFP IS LISTED AS THE BID NUMBER WITH AN **"A"** AND THE NUMBER OF THE ADDENDUM FOLLOWING; FOR EXAMPLE, **3025A1** INDICATES ADDENDUM #1 HAS BEEN ISSUED FOR BID 3025. **3025A2** INDICATES ADDENDUM #2 HAS BEEN ISSUED.

Offers received without the entire completed three-page RIVIP Bidder Certification Cover Form attached may result in disqualification.

PROCUREMENT OFFICER:

Jerome D. Moynihan, C.P.M., CPPO, Administrator of Purchasing Systems
State of Rhode Island, Division of Purchases
One Capitol Hill, Second Floor
Providence, RI 02908-5855

RI HEALTH INFORMATION EXCHANGE
REQUEST FOR PROPOSALS

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SECTION 1. CONDITIONS TO BIDDING

1.1 RFP NUMBER

The above RFP Number has been assigned to this Request and MUST be shown on all correspondence or other documents associated with this Request and MUST be referred to in all verbal communications. All inquiries shall be directed to the procurement officer only.

PROCUREMENT OFFICER:

Jerome D. Moynihan, C.P.M., CPPO
Administrator of Purchasing Systems
State of Rhode Island, Division of Purchases
One Capitol Hill; Providence, RI 02908

No communication is to be had with any other State employee or HIE Project representative regarding the details of this Request except with designated state participants in attendance. Violations of this provision by Vendor or state agency personnel may result in the rejection of the proposal.

1.2 TERMS AND CONDITIONS

Any award made under this solicitation will be subject to the state of Rhode Island General terms and conditions (located online at www.purchasing.ri.gov/RIVIP/info.asp), including the Information Technology Supplemental Terms and Conditions attached to this solicitation as Appendix E.

1.3 INTELLECTUAL PROPERTY

All work contracted under any award from this solicitation will be considered "work for hire" with all rights to intellectual property assigned to the State. Responses must identify any software licenses or other granted rights to intellectual property which Vendor would propose not to be considered "work for hire."

1.4 NEGOTIATED PROCUREMENT

The state reserves the right to negotiate and require additional terms and conditions prior to entering into any final agreement.

1.5 PROJECT STAFFING

Vendors are instructed to identify their project delivery team, including identifying all project resources required to implement the proposed solution, by role, those roles which are to be provided by the Vendor and those roles the Vendor expects to be provided by the State. Vendors are instructed to identify named individuals for all roles provided by the Vendor, and responses must include resumes for each named individual according to the request for information in Vendor Form V-3 and the requirements for submission of a Staffing Plan with this response. All engagements will be for named individuals only, per the terms and conditions of the information technology supplemental terms and conditions.

1.6 SUBCONTRACTORS

Vendors may subcontract work to acquire skills and experience required by the State to perform the engagement; however Vendors must disclose all subcontracts and the State reserves the right to approve any subcontractors. See Vendor Form-4.

1.7 OTHER STATE RIGHTS

1.7.1 The State reserves the right to require background (BCI) check(s) prior to individuals beginning work.

1.7.2 The State reserves the right to require drug test(s) on individuals prior to beginning work.

1.7.3 The State reserves the right to request additional information from Vendors (and their subcontractors) to demonstrate continued financial responsibility.

1.7.4 The State reserves the right to specify all applicable guidelines and requirements for the deliverables acceptance process. Vendor may propose an approach to deliverable acceptance and a proposed schedule for such activities and reflect this approach in its Implementation Plan (D-11), Project Work Plan (D-3) and Test Plan (D-21) deliverables.

1.7.5 The State reserves the right to negotiate the scope of the Vendor-proposed solution, along with any and all cost components.

1.7.6 The State reserves the right to exercise optional services as outlined in Section 2.2.1j.

1.7.7 The State reserves the right to incrementally fund this project based on availability of additional resources.

1.7.8 The State has the right to rely on any price quotes provided by Vendors. The Vendor shall be responsible for any mathematical error in price quotes. The State reserves the right to reject proposals which contain errors.

1.7.9 The State reserves the right to purchase hardware and software using existing State contracts if doing so is in the best interest of the State.

1.7.10 The State reserves the right to clarify roles and negotiate rates with selected Vendors.

1.7.11 If, in attesting to the offeror's product and service capabilities in the HIE Requirements Table, the Vendor checked option (S) indicating the requirement is "Fully Satisfied", at any point during the evaluation or during the contract period, the State reserves the right to determine that the Vendor's interpretation of "Fully Satisfied" did not meet Rhode Island Department of Health's (HEALTH) requirement and is incorrect. Any such customizations arising under these circumstances shall be performed by the Vendor at no additional cost to the State.

1.7.12 If, in attesting to the offeror's product and service capabilities in the HIE Requirements Table, the Vendor checked option (P) "Partially Met within base products, and CAN be customized," at any point during the evaluation or during the contract period, the State reserves the right to determine that the customization was not required. Any such customizations cost will be reimbursed to the State within thirty (30) calendar days or deducted from the Vendors next monthly bill, which ever is sooner.

1.7.13 If, in attesting to the offeror's product and service capabilities in the HIE Requirements Table, the Vendor checked option (D) "Not Included within base products, but CAN be developed with the proposed solution," at any point during

the evaluation or during the contract period, the State reserves the right to determine that the development was not required. Any such development cost will be reimbursed to the State within thirty (30) calendar days or deducted from the Vendors next monthly bill, which ever is sooner.

1.7.14 The State reserves the right to request that Vendors supply connectivity options, if required. Whereas, Vendors are required to work directly with Data Sharing Partners (DSP) on connectivity solutions that are based on existing infrastructure, the State cannot make assurances as to whether DSP solutions will be sufficient without the need for Vendor-supplied services.

1.7.15 See additional State rights pertaining to Vendor selection in Section 3.

1.8 TERM OF CONTRACT

The term of this initial contract is for approximately three one (1) year periods from the date of award through May 1, 2009 with four optional additional 12-month renewals by written agreement of the parties.

Notwithstanding any other clause in this Request, the State may extend the term of this contract by modification. The total duration of this contract, including the exercise of any options under this clause, **shall not exceed seven years**.

The estimated hourly rate for options under this contract shall not exceed the hourly rate established in the Labor Rate Schedule in effect when the option is exercised.

1.9 NOTICES

All notices, demands, requests, instructions, or other communications during the procurement period (collectively "notices") which may be required or desired to be given by either party to the other shall be **IN WRITING** and addressed as follows or to any other persons or addresses as may be designated by notice from one party to the other.

Jerome D. Moynihan, C.P.M., CPPO
Administrator of Purchasing Systems
State of Rhode Island
Division of Purchases
One Capitol Hill, Second Floor
Providence, Rhode Island 02908-5855

SECTION 2. NOTIFICATIONS TO OFFERORS AND PROPOSAL INSTRUCTIONS

Potential offerors are advised to review all sections of this Request carefully and to follow instructions completely, as failure to make a complete submission as described elsewhere herein may result in rejection of the proposal.

2.1 NOTIFICATIONS TO OFFERORS

2.1.1 SOLICITATION TYPE

This is a Request for Proposal (RFP), not an Invitation for Bid. In addition to price, responses will be evaluated on the basis of the relative merits of the proposals, and the qualifications of the proposed staff.

2.1.2 DESCRIPTION OF PROPOSED SOLUTION

Potential offerors are instructed to provide information on the products, services, and technical capabilities for the topics covered by this solicitation. Technical information must include solution architecture, supported standards, company background, partnering program, and any other information necessary for the State to understand Vendor's solution and capabilities per the evaluation criteria set forth below.

Alternative approaches and/or methodologies to accomplish the desired or intended results of this procurement are solicited. Any attached architectural descriptions suggestive of the anticipated solution are for descriptive purposes. Vendors are encouraged to provide "best fit" solution along with a justification of their proposed approach. Proposals which depart from or materially alter the terms, requirements, or scope of work defined by this Request, however, will be rejected as being non-responsive.

2.1.3 VENDOR RESOURCES

Vendors must provide information describing the depth and breadth of resources and experience in the area of the topics covered by this solicitation. Vendors must define the roles and rates for the services anticipated to be provided for engagements under the topics covered by this solicitation.

Proposed project teams (named individuals) must be available to commence work on the project 90 days following the opening date of the bid (or as identified in the proposed project plan). Any staffing resources which are not able to meet this requirement must be identified.

2.1.4 PRICING

A separate sealed Cost Proposal, including Vendor Form F-8 provided in this RFP, should include a fixed price for the overall proposed solution, along with a breakdown of any hardware, software, communications, professional services or other costs associated with the proposed solution. Responses for Optional Services must include proposed hourly rates for each role identified in the delivery team. Optional services rates must be clearly noted in the Labor Rate Schedule to be included in the response. All pricing submitted will be considered to be firm and fixed unless otherwise indicated herein.

The current funding for this project is based on funds the Rhode Island Department of Health receives under contract to the Agency for Health Care Quality and Research. Due to limits on immediate funding, the costs for this proposal are not to exceed a total of $1,710,000 over the 3-year contract period. More specifically, due to the federal contract

cycle funding this effort, no more than $ 975,000 can be requested for year one, no more than $367,500 can be requested for year two and no more than $367,500 can be requested for year three. The State reserves the right to supplement this contract as additional funds become available.

2.1.5 Cost of Proposal Development

All costs associated with developing or submitting a proposal in response to this Request, or to provide oral or written clarification of its content shall be borne by the offeror. The State assumes no responsibility for these costs.

2.1.6 Withdrawal of Proposals

Proposals are considered to be irrevocable for a period of not less than ninety (90) days following the opening date, and may not be withdrawn, except with the express written permission of the State Purchasing Agent.

2.1.7 Misdirected Proposals

Proposals misdirected to other State locations or which are otherwise not present in the Office of Purchases at the time of closing for any cause will be determined to be late and will not be considered. PROPOSALS EMAILED OR FAXED TO THE DIVISION OF PURCHASES WILL NOT BE CONSIDERED.

2.1.8 Award Structure

It is intended that an award pursuant to this Request for Proposals will be made to prime contractor(s) who will assume responsibility for all aspects of the work. Joint venture and cooperative proposals will not be considered, but subcontracts are permitted, provided that their use is clearly indicated in the offeror's proposal, and the subcontractor(s) proposed to be used are identified in the proposal.

In accordance with Title 7, Chapter 1.1 of the General Laws of Rhode Island, no foreign corporation, a corporation without a Rhode Island business address, shall have the right to transact business in the state until it shall have procured a Certificate of Authority to do so from the Rhode Island Secretary of State (401-222-3040).

2.1.9 Disclosure of Proposal Content

At the time of closing, there will be no public opening and reading of responses received pursuant to this RFP, other than to name those Vendors who have submitted responses. No price information will be released.

Bidders are advised that all materials submitted to the State of Rhode Island for consideration in response to this Request for Proposal will be considered to be public records, as defined in Title 38 Chapter 2 of the Rhode Island General Laws and will be released for inspection immediately upon request, once an award has been made. Exceptions may be considered by the purchasing agent concerning relevant, highly sensitive proprietary information that, if made public, may place a supplier at a competitive disadvantage.

Award results will not be given to individuals over the telephone. Results may be obtained through the Division of Purchases website after a purchase order is awarded.

2.1.10 MINORITY BUSINESS ENTERPRISE REQUIREMENTS

The offeror should be aware of the State's Minority Business Enterprise (MBE) requirements, which addresses the State's goal of ten percent (10%) participation by MBEs in all State procurements. For further information, contact the MBE Administrator, at (401) 222-6253 or visit the website http://www.rimbe.org.

Offeror must indicate its status as a minority business enterprise (MBE), certified by the Rhode Island Department of Administration. If the offeror is not MBE certified, describe measures to be taken to meet subcontracting plan that addresses the State's goal of ten percent (10%) participation by MBEs in all state procurements.

2.2 PROPOSAL INSTRUCTIONS

Vendor Response should include two separate but related proposals: 1) Technical Proposal and 2) Cost Proposal. A Response Checklist for proposal contents is provided. It is important to note that one signature is required on each form by offeror's accountable senior executive or senior project manager for this HIE Project except for Form F-7: HIPAA Agreement where both signatures are required.

ALL COPIES (INCLUDING ONE ELECTRONIC COPY) OF COST PROPOSALS SHALL BE SUBMITTED IN A SEPARATE SEALED ENVELOPE OR CONTAINER SEPARATE FROM THE TECHNICAL PROPOSAL. THE OUTSIDE SHALL BE IDENTIFIED CLEARLY AS "COST PROPOSAL" OR "TECHNICAL PROPOSAL" WITH THE RFP NUMBER AND CLOSING DATE.

A proposal shall not be considered for award if the price in the proposal was not arrived at independently and without collusion, consultation, communication or agreement as to any matter related to price with any other Contractor, competitor or public officer/employee.

Technical proposals shall contain a concise description of Contractor's capabilities to satisfy the requirements of this Request for Proposal with a **strong emphasis on completeness and clarity of content**. Unwarranted length of responses is discouraged. Repetition of terms and conditions of the Request for Proposal without additional clarification shall be considered nonresponsive.

Vendor Responses must include all materials listed in Section 9 on the Vendor Response Checklist including a completed set of 9 pre-formatted forms plus the materials listed under the Scope of Work Narrative (F-6). Failure to include any of these forms and related attachments will be considered nonresponsive and is cause for disqualification of the Response.

2.2.1 TECHNICAL PROPOSAL

Technical Proposals must be submitted in a separate sealed envelope and must include the following:

a. A completed and signed in ink RIVIP- generated bidder certification cover form (downloaded from the R.I. Division of Purchases Internet home page at www.purchasing.state.ri.us) must be attached to the front of the offer. (Vendor must be registered on the Purchasing Website to generate the Cover Sheet.)

b. A completed and signed W-9 Taxpayer Identification Number and Certification Form, which may be downloaded from www.purchasing.state.ri.us.

c. Statement of Understanding (Form F-1): A concise statement of the offeror's understanding of the information system implementation, development, support and training activities to be performed by the HIE System Vendor and the role the Vendor is expected to perform, as described in the RFP.

d. Organizational Description (Form F-2): A statement of company history listing the number of employees, volume of business, and a general business description.

e. Organization Chart (Form F-3): Depict the structure of the offeror's organization as it pertains to this project and specific areas of responsibility for all staff associated with this project.

f. Offeror Subcontractors (Form F-4): Include a description of any subcontracts pertaining to this project, subcontractor(s) background and experience and the nature of previous engagements working with the subcontractor(s).

g. Qualifications, Experience and Financial Viability (Form F-5): A statement describing the offeror's background, qualifications, and experience with other clients including a list of engagements and references demonstrating Vendor's capability to deliver required services as described in this solicitation. Must include a description of the offeror's capacity to deliver services, including staff who will be assigned to the project (Should refer to resumes provided in the Staffing Plan.) Offerors must also attach information sufficient to demonstrate financial responsibility, which may include the most recent 2 years financial statements, tax returns, certificate(s) of insurance, or other financial references.

h. Overall Scope of Work Narrative (Form F-6): Includes five sections: (1) an Executive Summary of the technical proposal; (2) a description of how the offeror proposes to accomplish the scope of work in HIE Project Years 1-3 with regard to the six stated objectives of this project; (3) proposed approach to meeting General Requirements enumerated in Section 7.2 for HIE Project Years 1-3; (4) the completed HIE Requirements Table from Appendix B; and (5) the following **Supporting Documentation** (NOTE: cross-references to other forms or sections of the offeror's response is encouraged):

   i. *Project Work Plan*: A high level project plan identifying all required project deliverables, resources, scheduling, and dependencies. The Project Work Plan should include all work, hours and deliverables anticipated in the solution, clearly identifying which components are proposed to be provided by Vendor and which components are proposed to be provided by the State or other sources. Further, Vendor will clearly delineate proposed activities and timelines in each applicable Systems Development Life Cycle (SDLC) phase of work in the HIE Project. (Vendor may specify a preferred development framework.) The Project Work Plan shall clearly map to the Vendor-specified SDLC phases and the deliverables outlined in this RFP (see Table 4). Vendor resources referenced in this Project Work Plan shall clearly map to resources in the Staffing Plan (see below). Tasks that require HEALTH, State or non-Vendor personnel participation shall be scheduled based on normal business hours and shall be based upon a 35-hour week with the recognition that many of the non-Vendor resources will not be full time on

this project. Vendors should adhere to the specific Planning requirements as required by the State of Rhode Island Division of Information Technology (DOIT).

ii. *Project Staffing Plan*: Clearly describe all personnel resources required for the project. The Staffing Plan should include the type and number of Vendor staff needed (job titles/functions) along with necessary staff knowledge and skill sets required.. At a minimum, the following functions should be considered:

- Project Manager
- Database Administrator
- Developer/Programmer
- Security Administrator
- Server Administrator
- Help Desk Staff
- Trainer

The Staffing Plan should also identify the necessary complement (number, roles and responsibilities) of local (State and stakeholders) staff resources needed to work with the Vendor (i.e., staff that should be assigned some level of responsibility) on this project. The Plan should indicate the skill sets needed by local staff as well as an estimate of the amount of their time that should be dedicated to this project.

Include an organizational chart showing how the Vendor proposes to manage and organize their staff on the project (cross-reference to/from Form F-3 as needed). Name Vendor personnel to be assigned to the HIE Project and their roles; provide a concise resume (including relevant experience) for each named team member. If staffing will change during different project phases, include a separate organization chart or use special notations to indicate variations in staff support during each applicable project phase. If the staffing mix of local resources needs to change during the different project phases, please identify.

iii. *Proposed Technical Architecture Design*: A description and graphical representation of "best fit" physical and logical network design specifications for the RI HIE System. This description should include technical architecture, application architecture, deployment architecture, interface definitions (APIs), support of technical standards, and any other information which will help the State gain a detailed understanding of the proposed solution. Use case, functionality, and system life cycle assumptions should be incorporated.

iv. *Recommended Infrastructure Requirements*: A document describing hardware and software configurations for system infrastructure to support Release 1/1.X Use Case functionality in a limited live pilot according to stated implementation priorities (Table 3) and the incremental build-out of the future state HIE based on three planning scenarios over three years of system growth that incorporate the workload, growth and user assumptions listed below.

Planning Scenarios:

1) 50 simultaneous, active users
2) 200 simultaneous, active users
3) 500 simultaneous, active users

Workload Assumptions:

a. Three initial clinical lab data sharing partners (DSPs)
b. Baseline patients: 1.5 million patient records with 60% overlapping patient IDs among DSPs (patient identities must be matched, records merged and de-duplicated for presentation via the HIE)
c. Baseline data: 5 million lab tests (assumes 2 years of tests will eventually be made available in the production HIE)
d. Rate of information growth:
    i) 500 new patients enrolled per month (across all DSPs)
    ii) 200,000 tests/encounters/records per month (across all DSPs)
e. Rate of new DSPs: Add 4 DSPs (for each 12 months of operation after first pilot period)

v. *Implementation Plan*: Implementation activities refer to those activities that must be completed to rollout the HIE System Release 1/1.X in a live, production environment once it has been developed and fully pilot tested according to HIE Project-defined implementation priorities (Table 3). In the Plan, clearly define Vendor's approach to the planning and execution of all HIE System implementation activities throughout Years 1-3 of the contract. Vendors are encouraged to use a structured systems development framework as the basis for organizing the plan and logically linking it to the Project Work Plan. At a minimum, the Implementation Plan should include detailed descriptions of the following elements inherent in the Vendor's proposed approach to implementation:

- Implementation methodology and tools.
- Processing environments (See requirements in PROC-1) including Vendor's commitment and plan with respect to ensuring that all environments are properly set up, maintained, secured and auditable.
- Project communication practices. Types of communications include bi-directional feedback on all project deliverables and interim communications in regard to project performance reporting such as project status and progress, meeting coordination, issues escalation, etc.
- Customization and development required. HEALTH expects the Vendor to use an incremental, prototyping development approach.
- Live Pilot testing, user acceptance practices and approach to transition the HIE to production including description of the expected impact to end-user normal operating capabilities during the transition phase.
- Approaches to facilitate HIE System adoption and use. HEALTH recognizes the importance of statewide adoption and use of the HIE System to Rhode Island's ability to achieve critical objectives for health information exchange and improvements in population health. Include a description of the Vendor-recommended approach to

systems adoption and use based on organizational, structural, financial, cultural, human resource, training and other considerations.

- Data management and conversion methodologies including Vendor strategy for merging person and clinical data across systems and a strategy for handling data conversion during an incremental statewide rollout. Specify any anticipated dual entry requirements, recommended duration, use of test scripts, automated tools, etc.
- Change/configuration management methodology and approaches including how software, version control, code promotion, and documentation versioning will be managed for all environments throughout the life of the contract.
- Quality control procedures
- Contingency plans in the event that key implementation activities are not completed in the planned timeframe.
- Disaster recovery and backup plan for the HIE System environment including testing protocols to be used prior to moving the system into production. Describe the proposed approach to day-to-day procedures for system backups and restore operations. The proposed solution shall assure recoverability of patient data as well as metadata, configuration and all other updatable data.
- Vendor turnaround times for maintenance, modifications, and help desk calls to be adhered to during the live pilots and during and after the introduction of any modifications, enhancements, and new releases.
- Security plan which takes into account security requirements as specified in the HIE System Requirements Table (See SEC-1 through SEC-3) and Vendor responsibility for the maintenance of their products, services and processing environments to include continuous conformation to any new or changing Federal, DOIT, HEALTH, or other applicable security requirements.
- Approach to training local IT personnel and end-users.
- Impact of optional (or other) services recommended to assure successful implementation. Sample Service Level Agreements may be provided where applicable.

vi. *Approach to Risk Management*: Vendor should describe how risks are to be identified, analyzed, mitigated, monitored, escalated and resolved during the project life cycle.

vii. *General Documentation*: Vendor should supply descriptive documentation as applicable for COTS products and/or integration services and any other documentation which may be helpful to the State in gaining an understanding of Vendor's offering.

i. HIPAA Agreement (Form F-7): An original signed copy of this agreement must be included in the offeror's response. See RESPONSE CHECKLIST for instructions.

j. Optional Services (OS) (Form F-9): In addition to stated needs for HIE Release 1/1.X, HEALTH has identified other areas of assistance as integral elements of the implemented solution and reserves the right to procure any

combination of these optional services as part of this contract award as needs arise and funding permits. Vendor should include a description of which Optional Services it is capable of providing and its proposed approach to deliver each service. If an option is exercised, the State reserves the right to request additional details for proposals. ALL LABOR RATES FOR OPTIONAL SERVICES MUST BE INCLUDED IN THE COST PROPOSAL LABOR RATE SCHEDULE and SHOULD NOT BE INCLUDED IN OPTIONAL SERVICES FORM F-9.

Optional services include:

OS1. Design, test and implement additional priority data categories for exchange through the HIE. These include, but may not be limited to:

- OS1.1 Reports (emergency department and hospital discharge summaries; pathology, cytology, outpatient procedure, radiology reports, etc.)
- OS1.2 Additional patient phone contact information
- OS1.3 Administrative (health plan) data, specifically, insurance eligibility information (Insurance coverage and benefits, etc)
- OS1.4 Child health data (link to KIDSNET integrated database)
- OS1.5 Medication allergies
- OS1.6 Imaging data

OS2. Provide ongoing HIE System / application technical support and maintenance

OS3. Provide operations support and hosting services for the HIE

OS4. Provide HIE System disaster recovery and backup services

OS5. Provide HIE System Administrator and end-user training. Both technical and end-user components should be included in a description of the Vendor's training approach.

OS6. Provide additional integration services to support interoperability of the RI HIE System with other information exchange infrastructures, e.g., state Medicaid systems/databases, other RHIOs, etc.

2.2.2 COST PROPOSAL

Cost Proposals must be submitted in a separate sealed envelope and must include the following:

- Cost Proposal (Form F-8): Cost Proposals should include the series of schedules listed below to derive a **total fixed price for the overall proposed solution for three sequential contract years AND the total fixed price for a one year extension (year 4).** Cost Proposals must be prepared in the most thorough manner to provide essential and reliable cost details for each of three years of the proposed contracted work and one year of extended and/or optional services. Therefore, Cost Proposals must provide details for a total of four years. In addition, estimates and justification for a total cost of ownership/operation (TCO) of the proposed system should be specified for

years 5 – 10 of the proposed system's life cycle. The methodology used for TCO analysis should be explained.

- Cost Proposals should include the completed series of schedules provided in Form F-8 plus narrative documentation of assumptions, cost justification, calculations/formulas, etc. for all major cost categories. Computations and totals shall be provided as required to understand the full proposal price. In summary, the following documentation should be included using the templates provided:

  a. Detailed Annual Budget for each year; Years 1 – 4 (Use Detailed Annual Budget template)

  b. Bill of Materials Years 1 – 3 (Use Bill of Materials template)

  c. Bill of Materials Year 4 (Use Bill of Materials template)

  d. Summary Budget for Years 1 – 3 (Use Summary Budget template)

  e. Labor Rate Schedule – one schedule with notations indicating rate adjustments over time and rates to support Optional Services, if applicable (Use Labor Rate Schedule template)

  f. Deliverables Cost Schedule for all required Deliverables produced during the three-year contract period (Use Deliverables Cost Schedule template—note two pages)

  g. Budget Narrative. Documentation of assumptions, cost justification, calculations/formulas, customization breakdown, etc., for all major cost categories including Optional Services to accompany each detailed annual budget form for each year.
  (NO TEMPLATE PROVIDED—Use Vendor preferred format)

  h. Total Estimated Cost of HIE Operations: Years 5 – 10
  (NO TEMPLATE PROVIDED—Use Vendor preferred format)

- Cost Proposals must incorporate details from the Project Work Plan in terms of the proposed work effort (hours) and timeline to produce the required contract deliverables. All related costs required to produce contract deliverables should be accounted for and included in the total cost.

- Costs and costing assumptions for all optional services must be included to the extent possible. At a minimum, labor rates for all optional services should be included as a specific category in the Labor Rate Schedule. Additional considerations include:

  - Lab data conversion: Fixed cost for converting data for all applicable legacy systems (assume 5 million lab reports). Time and material costs should be broken out into years of work with estimated time required and hourly rates.

  - Support for additional data exchange: State all cost assumptions for hardware/software, customization, data conversion, testing, deployment, etc.

  - Training: Rates for this optional service should include hourly labor costs by category and cost breakdown for travel and lodging for two training categories; technical training and end-user training.

- Hosting: Reflect the total annual cost of supporting HIE operations, including disaster recovery and backup, after year 3 of the contract period. State all growth assumptions and related costs.

2.3 PROPOSAL FORMAT

The pre-formatted Vendor Forms in Appendix D are intended to be used for direct electronic entry and submission of proposal narrative for the Vendors' Response. All required information listed in Appendix D must be provided in electronic format, MS Word®, and in hard copies on 8 ½ x 11 paper, double-spaced, no smaller than 11-point type (excluding graphics), unless otherwise specified by the Division of Purchasing. CDs with soft copies of all source files for tables, graphics and diagrams included in MS Word® documents are requested, but not required, to facilitate response review; Visio® is a preferred application for charts and network/system diagrams; MS PowerPoint® and MS Excel® are acceptable. Supplementary brochures and documentation, for example, product marketing/descriptive materials, etc., may be provided in .pdf format although electronic copies are not required.

Vendors are instructed to collate their Technical and Cost Proposals following the sequence described in the Vendor Response Checklist.

2.4 SUBMISSION OF PROPOSALS

Offeror's proposal shall consist of:

- ❑ A sealed, labeled package containing eleven (11) hard copies (including the original) including literature and other supporting documents and one (1) electronic / soft copy of the Technical Proposal; and
- ❑ A sealed, labeled package containing eleven (11) hard copies (including the original) and one (1) electronic / soft copy of the Cost Proposal.

All hard and soft copies of Vendor's Technical and Cost Proposal labeled and sealed separately and packaged securely in an envelope or other container, shall be received promptly at 2:00 p.m., Eastern Standard Time, on DAY/MONTH/YEAR Responses should be clearly marked RFP# _____ "RI STATEWIDE HIE SYSTEM", Closing Date: DAY/MONTH/YEAR and mailed or hand-delivered to:

State of Rhode Island
Division of Purchases
One Capitol Hill, Second Floor
Providence, Rhode Island 02908-5855

Faxed or emailed proposals will not be considered.

The Vendor assumes responsibility for proposals submitted by mail or commercial delivery service. The "official" time clock is located in the reception area of the Division of Purchases.

Proposals received prior to the closing date shall be kept secured and sealed until closing. The State shall not be responsible for the premature opening of a proposal or for the rejection of a proposal that was not received prior to the closing date because it was not properly identified on the outside of the envelope or container.

Proposals misdirected to other State locations or which are otherwise not present in the Division of Purchases at the time of closing, for any cause, will be determined to be late

and will not be considered. Late Technical and/or Cost Proposals will be retained unopened in the file and will not receive consideration.

2.5 SIGNATURE OF PROPOSALS

Each proposal shall give the complete mailing address of the Vendor and be signed by an authorized representative by original signature with his or her name and legal title typed below the signature line. Each proposal shall include the Vendor's social security number or Federal Employer's Identification Number.

2.6 ACKNOWLEDGEMENT OF ADDENDA

Any additional information pertaining to this RFP or changes in the timeline may be posted on an as-needed basis. It is the responsibility of the Bidder to regularly review the RIVIP website (www.purchasing.state.ri.us) to check for any additional postings.

It is strongly suggested that the Vendor mark this RFP on the RIVIP Vendor Watchlist for ease of monitoring critical information and amendments. Assistance in using this RIVIP feature can be obtained by reviewing the online tutorials available under the Vendor Center Section or by contacting the RIVIP Help Desk at (401) 222-2141 x134.

2.7 MODIFICATION OF PROPOSALS

A Vendor may modify a proposal by letter or hand delivery at any time prior to the closing date and time for the receipt of proposals. All proposal submission requirements apply.

2.8 NOTICE OF AWARD

Only the State is authorized to issue news releases relating to this Request, its evaluation, award and/or performance of the contract.

2.9 PROCUREMENT TIMETABLE

Proposal Opening Date / Proposal Released	4 Jan 06
Vendor Emailed Questions Due Requesting Clarification on RFP	17 Jan 06
Responses to Vendor Questions Distributed	TBD
Pre-Proposal Conference	20 Jan 06
Letter of Intent	TBD
Proposal Closing Date / Submission Deadline	21 Feb 06
Estimated Date of Finalists' Verbal Presentations	TBD
Estimated Date of Award	TBD

2.10 AHRQ REQUIREMENTS

Whereas, HEALTH receives funds to support the RI HIE Project under contract to the federal Agency for Health Care Quality and Research, any contract awarded under the Project must include AHRQ contract terms and conditions that apply to subcontractors. Therefore, these terms and conditions are provided in Appendix C for Vendor reference and consideration. Vendors must agree to comply with all applicable AHRQ contract provisions as a term of any contract awarded from this RFP. In general, these provisions include:

- ❑ Federal Acquisition Regulation (FAR) (48 CFR CHAPTER 1) and Department of Health and Human Services Acquisition Regulation (HHSAR) (48 CFR CHAPTER 3) Clauses incorporated by reference.
- ❑ Information required on contractor/subcontractor invoices to support AHRQ Voucher requirements (Section G4).
- ❑ Other special contract provisions (Sections H.1, H.2 and H.3):
  - o H1: Restrictions on publication and dissemination of material derived from work performed under this contract;
  - o H2: Debarment for violations of restrictions on publication and dissemination; and
  - o H3: Requirement that the award of any subcontract is subject to the written approval of the AHRQ Contracting Officer upon review.

SECTION 3. EVALUATION AND SELECTION PROCESS

Offerors and their respective Responses to this RFP will be subject to the following provisions of the evaluation and selection process:

3.1. Proposals will be opened and reviewed by a State internal scoring committee.

3.2. The State reserves the right to eliminate proposals not including required elements listed on the Vendor Checklist provided in Appendix D.

3.3. Written proposals will be initially scored based upon the Technical Criteria listed in Section 4. Proposals must receive a minimum score of 60 technical points for further consideration. Proposals found to be technically or substantially nonresponsive at any point in the evaluation process will be rejected and not considered further.

3.4. The State will request the top respondents to make verbal presentations to the scoring committee on their proposed technical solutions.

3.5. The State will re-score responses based upon the presentations according to the scoring criteria outlined in Section 4 below. The State reserves the right to accept or reject any of the responses based upon the overall score at this time.

3.6. The State reserves the right to adjust the requirements of this RFP, and request resubmission of proposals from the final candidates.

3.7. The State will re-score any revised proposals based upon the scoring criteria below.

3.8. The State reserves the right to require a second round of presentations with the finalists based upon their revised proposals.

3.9. The State will re-score proposals based upon the outcome of the second round of presentations.

3.10. The State reserves the right to issue a tentative award to the top finalist.

3.11. The State reserves the right to negotiate the final contract cost, terms and conditions related to a resulting engagement with any Vendor under a tentative award prior to entering into a final award and contract.

3.12. Should the State and any finalist fail to enter into a final agreement within 60 days following the issuance of a tentative award letter, the State reserves the right to enter into negotiations with the next highest ranking finalist.

3.13. The State reserves the right to include an advisory group, under Non-Disclosure Agreement, in reviewing proposals and presentations. The input from this advisory group will be considered by the State, but only the official State scoring committee will score proposals.

SECTION 4. SCORING CRITERIA

All proposals received before the closing date/time and found to be compliant with the requirements for response submission will be scored based upon the following criteria:

Technical Criteria

1. Depth and breadth of solution offering — 30 points

a. The degree to which the solution meets the requirements as defined in the HIE Requirements Table

b. The degree to which the Project Work Plan supports logical and efficient development and implementation of the proposed solution

c. Additional out-of-the-box functionality, system usability, security and degree of functional integration. For example, EAI tools, modeling and simulation capability, change management capability, process and rules management, etc.

d. Application development tools, methodologies and systems management approach

e. Number and types and applications which have been built on platform

2. Technology architecture — 25 points

a. Compliance with Service Oriented Architecture Principles, i.e., component-based, fully encapsulated functionality, loosely coupled with defined, standards-based interfaces, etc.

b. Depth and breadth of integrated platform (off-the-shelf component integration)

c. Depth and breadth of functionality accessible as a service

d. Scalability, reliability, other performance features, etc.

e. Open, documented APIs including XML-based, web services support

f. Support of open standards (e.g., HL7, OMB PIDS, BPEL, and/or other open industry supported standards)

g. Breadth of hardware / software / database platforms supported

h. Technical support and documentation

i. Proven integration to external Business Process Management, rules engines, identity management infrastructure, legacy applications and third party point applications

j. Prototyping / modeling / simulation capability

k. Reusable design, experience, code or frameworks for State applications (HIE may reside in public domain or vendor partners)

Continued, next page

3. Vendor qualifications 25 points

a. Completeness and scope of solution vision
b. Vendor commitment to support solution
c. Financial viability
d. Partner program / Certification / training support
e. Depth and breadth of healthcare experience
f. Depth and breadth of experience on complex integration projects
    i. Inter-enterprise development and implementation
    ii. Familiarity with anticipated technologies
    iii. Change management
    iv. Referenceable HIE products/systems successfully installed and currently functioning
g. Depth and breadth of state and local government experience
h. Breadth of successful project experience including range of scope and complexity of projects

Cost Criteria

4. Cost Proposal 20 points

a. Total up-front solution costs (i.e., hardware, software, licensing, development, tools, services, etc.)
b. Total 10–year life cycle costs (Year 1-3 contract costs + Year 4 continuation estimate + TCO for years 5 – 10)
c. Anticipated implementation and training costs
d. Anticipated support & maintenance cost
e. Alternative financing or licensing models
f. Optional Services Costs (must be clearly specified as Optional Services)

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SECTION 5. STATEMENT OF VISION AND PROCUREMENT OBJECTIVES

5.1 RI HIE VISION AND PROJECT GOALS

The Rhode Island Department of Health (HEALTH), in concert with the State of Rhode Island Division of Information Technology (DOIT), the Rhode Island Quality Institute (RIQI) and key Rhode Island stakeholders and with contractual funding provided by the federal Agency for Healthcare Research and Quality (AHRQ), are proceeding to design and build a statewide health information exchange (HIE). The RI HIE Project (a.k.a. RI HIT Project) is intended to promote the use of information technology to support the authorized exchange of electronic health information to improve the quality, safety, and value of health care provided in the state. To that end, Rhode Island's health care community intends to create and sustain a statewide health information infrastructure that supports its shared HIE vision and specific RI HIE Project goals:

Rhode Island's Shared Vision for Health Information Exchange

Rhode Island will promote the use of information technology and confidentiality protections to support the authorized exchange of electronic health information to improve the quality, safety, and value of health care provided in the state. To that end, Rhode Island will create and sustain a statewide secure health information system that will:

1) Allow individuals seeking care in Rhode Island to authorize their health services providers, and others whom they designate, to have access to their health information, solely for approved purposes, when and where it is needed;
2) Adhere to sound policies, design principles and interoperability* requirements to support the exchange of information in a meaningful, lawful, and efficient manner; and
3) Maximize the effective use of technology by patients, providers, policymakers and researchers to realize significant and continuous improvements in the quality and outcomes of health care delivery in the state.

**Interoperability: The capability of two or more hardware devices or two or more software routines to work harmoniously together.*

Rhode Island HIE Project Goals Statement

From September 2004 through September 2009, the Rhode Island/AHRQ Health Information Exchange Project will design, implement and evaluate the foundation for statewide comprehensive electronic health information exchange, using affordable technologies and leveraging technologies already in place. Specifically, the Rhode Island Department of Health (HEALTH) and its partners (including consumers, healthcare practitioners, stewards of health data, and industry stakeholders) will develop the capacity:

- To connect a core set of personal health data from various health care providers, and
- With an individual's consent, make the information easily available and accessible to providers for use in that individual's care.

As reflected in the HIE Project Goals Statement, statewide electronic health information exchange will be accomplished in Rhode Island by leveraging technologies, health data and infrastructure already in place among public and private-sector healthcare stakeholders. Although the RI HIE Project is being initiated through a state contract with AHRQ, it is intended to help establish a path for eventual transition, ongoing management and long-term adoption of a community-governed health information exchange. The HIE Project does not assume the supporting technical infrastructure will be a government-owned or operated resource.

Through this RFP, the State of Rhode Island on behalf of HEALTH, will engage the services of a Vendor on behalf of its partners (including consumers, healthcare practitioners, stewards of health data, and other industry stakeholders) to develop the initial capacity to link a core set of personal health data that with an individual's consent, can be made easily available and accessible to providers for use in that individual's care. Further, the infrastructure that supports the initial prototyping and pilot clinical data exchange activities must be designed to eventually support a broad range of clinical and possibly administrative data types (both structured and unstructured data) and enable population-based analyses for purposes of accomplishing select public health and other appropriate health services research objectives.

5.2 PROCUREMENT OBJECTIVES

HEALTH requests responses to this RFP from information systems and implementation/ integration services Vendors to help develop Rhode Island's HIE infrastructure based on three priority objectives, in order of emphasis:

1. Design, test and deploy an initial implementation (Release 1) of the HIE infrastructure to support laboratory data transfer from three initial data sharing partners into the HIE for authorized access and use by physician end-users in five clinical settings. Note that the HIE System Release 1 implementation described in this RFP is intended: (a) as a prototypical proof of concept of the overall architecture; (b) to produce initial live pilots of the core HIE system which will be expanded to support other types of clinical data exchange; and (c) to define conformance to overall architectural requirements for exchanging all types of health data (both structured and unstructured) in addition to solving the immediate problem of exchanging lab data. The pilot system MUST be designed with the intent to leverage the foundational code, functionality (especially patient identification/identity indexing, messaging, web services and interfaces) and to the greatest extent feasible, the technical infrastructure toward the continued incremental build-out of the Rhode Island Health Information Exchange. Exchange of prescription medication information should be considered the next priority data type for implementation in Release 1.X.
2. Specify a "best fit" technical architecture and infrastructure that will meet all of the needs for health data interchange based on current and foreseeable business, functional and supplementary (technical and non-functional) requirements. The ideal solution will include strong user authentication and state-of-the-art master person index (MPI) functionality; will be message-based, web-services enabled and designed to require minimal customization/configuration by data sharing partners or end-users; and will provide maximum functionality, support for patient consent processes, intuitive user interfaces, and acceptable system performance for all HIE end-users statewide. The HIE solution that satisfies these requirements must reflect and leverage the requirements and capabilities of current data sharing partners and be responsive to the unique needs and composition of future data sharing partners, end-users and consumers in Rhode Island.

3. Provide a technical and financial (cost) plan for a total period of ten years that reflects incremental growth in data types (structured and unstructured), data sharing partners and end-users as would be practical using and extending the initial infrastructure supporting Release 1 according to the architectural plan.

Additional related objectives for this procurement include:

4. Assure appropriate levels of project management and technical support to enable smooth implementation using a phased, prioritized approach that maximizes overall cost-effectiveness. This includes, but is not limited to, a commitment to the use of sound project management and systems development practices and the competent provision of technical implementation and system integration services, maintenance and support services, training services and documentation for both HIE system administrators and system end-users.
5. Plan for implementation activities in years 2 and 3 of the contract to include HIE rollout to other data sharing partners (with new types of data) and end-users, beyond the initial lab pilot. These partners include, but are not limited to, Surescripts (and other medication data providers), additional hospitals, clinics, physician offices, laboratories, diagnostic centers and health plans. The goal is have the capability to exchange RI lab and medication data (as described in this RFP) by the end of contract year 2.
6. Assure that all HIE implementation and integration activities appropriately reflect implications for health information infrastructure relative to the National Health Information Network (NHIN) goals for an HIE system and the standards and requirements set forth by the Centers for Disease Control and Prevention (CDC) for the Public Heath Information Network (PHIN).

When considering these objectives, respondents to this RFP should take into account that the mandatory elements of this contract focus on completing Release 1 (lab data exchange) and Release 1.X (lab and medication data exchange) of the RI Health Information Exchange. Optional services are enumerated in this RFP to support progressive expansion and ultimately, statewide adoption of the system as additional funding permits. Offerors should also take into account that while this contract is administered by the State, the HIE will be a community-governed service not likely to remain under the jurisdiction of State contractual authority.

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SECTION 6. BACKGROUND INFORMATION

6.1 OVERVIEW

The Rhode Island population includes approximately 1.1 million residents, most of whom receive care in the state. (Detailed projections of Rhode Island demographic and health system capacity may be found in the November 2002 Shape Study at http://www.rishape.org/shapereport1122.pdf.) In general, the Rhode Island healthcare delivery system is comprised of two large hospital networks (Lifespan http://www.lifespan.org/ and Care New England http://www.careNE.org/, both with sophisticated hospital information systems) and a large number of small physician practices with highly diverse technical capabilities. In addition, the Rhode Island Health Center Association (http://www.rihca.org) represents 12 community health centers that provide services to disadvantaged populations. Dominant health plans include Blue Cross Blue Shield of Rhode Island (https://www.bcbsri.com/), Neighborhood Health Plan of Rhode Island (http://www.nhpri.org/) and United Healthcare (http://www.uhc.com/). Key health plans, physician practices and other public and private sector stakeholders are active participants in the RI HIE Project. Further, the Rhode Island Quality Institute (www.riqi.org) is positioned to represent all stakeholder interests as the evolving Rhode Island Health Information Organization (a.k.a., Regional Health Information Organization or RHIO.)

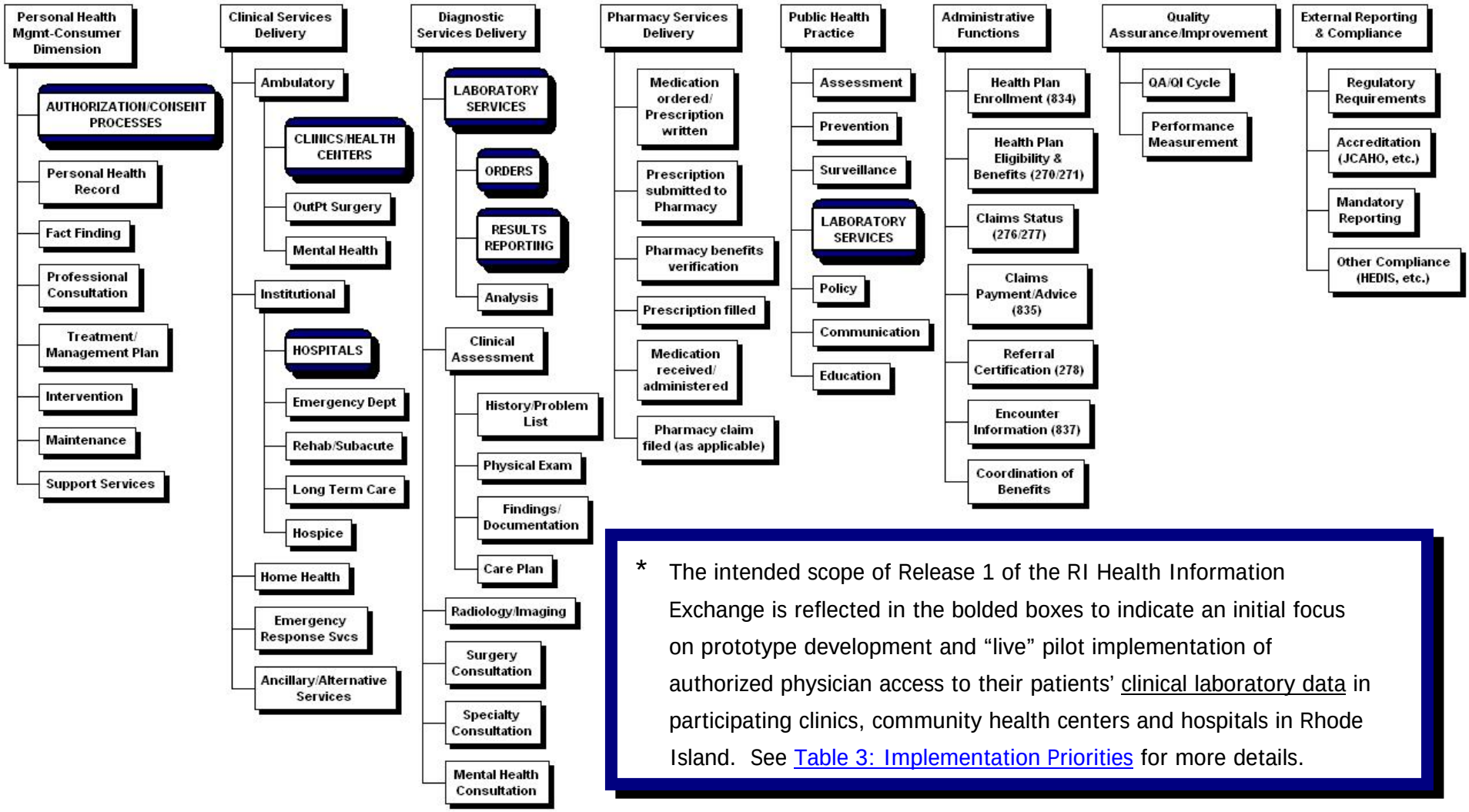
The RI HIE Project has focused its first AHRQ contract year (Oct 2004 – Oct 2005) on educating stakeholders, building support for the HIE concept, developing high-level conceptual and functional requirements for the HIE System and establishing a representative governance and management structure that can evolve over time with the infrastructure. As such, the information contained in this RFP is representative of a broad, stakeholder-driven initiative that is at the same time focused on achieving near-term goals and forward looking.

The RI HIE Project may be similar to other HIE initiatives in some ways. The conceptual HIE infrastructure is a reflection of key players in the RI health services industry and the current infrastructure and expertise that they offer both as organizations and as a community joined to implement technology and information systems to improve healthcare. However, the RI HIE Project may differ from other HIE initiatives in (a) the market mix it seeks to represent and, (b) the explicit assumption that patient authorization and consent processes will be considered in the detailed system design.

Figure 1 provides an overview of the business and health services processes that could potentially be affected by the overall solution described in this procurement. The diagram also depicts the more narrow scope of processes to be included in the first iteration of the RI HIE system, to be referred to in this RFP as Release 1. Release 1 will focus on prototype development and “live” pilot implementation of authorized physician access to their patients’ clinical laboratory data in participating clinics, community health centers and hospitals in Rhode Island; with release 1.X focusing on medication history to follow shortly thereafter.

The ideas and concepts presented in this RFP have been advanced and supported by the RI healthcare community and have been based on data sharing partners existing infrastructure and current capabilities. The community understands that there may not be a similar, referenceable HIE architecture in operation today. Stakeholders of the RI HIE Project are open to considering both proposed and alternative approaches to implement key HIE functionality and will look to the IT/IS Vendor community to further inform their thinking through this RFP process.

Figure 1. Health and Healthcare Processes: Long-term Boundaries for Health Information Exchange



6.2 RI HIE PROJECT PARTNERS

The leadership and commitment for the RI HIE Project starts at the highest level of state government, the Governor of Rhode Island. Governor Donald Carcieri recently formulated his health policy agenda, which includes a plan to realize his vision for "Anytime, Anywhere Healthcare." The Governor has charged the Director of HEALTH, David Gifford MD, MPH, and the State's Health Insurance Commissioner, Christopher Koller, with developing and implementing the State's action plan for Health IT. An HIT Issues Team has been constituted to support these efforts. As the Principal Investigator for the RI HIE Project, Dr. Gifford provides active, ongoing leadership for the advancement of Health IT within the state of Rhode Island, HEALTH and for the Health Information Exchange Project.

The Rhode Island Department of HEALTH is recognized for its strength as a collaborator and leader in statewide health information technology initiatives. As the single public health agency in Rhode Island, the primary mission of the Department of Health is to prevent disease and to protect and promote the health and safety of approximately 1.1 million Rhode Islanders. HEALTH has received national recognition for its role in developing health care quality data and its development of KIDSNET, which links data from eight different child health programs, integrates it with an immunization registry and makes all information available online to participating providers. In its own right, HEALTH has actively pursued a leadership role in health information technology initiatives. At the community's request, HEALTH applied for and was awarded one of AHRQ's 5-year, $5 million contracts for a Statewide Demonstration Project for Health Information Technology (HIT), referred to as the RI HIT Project or alternatively, the RI Health Information Exchange (HIE) Project (October 2004 – September 2009). HEALTH is working with a significant number of key partners and stakeholders in the RI HIE Project. Several of these key organizations are listed here.

Rhode Island Division of Information Technology (DoIT). DoIT is responsible for maintaining statewide technology infrastructure for the State of Rhode Island and is an important HEALTH partner and a key collaborator on this project.

Rhode Island Quality Institute (RIQI). RIQI is a not-for-profit corporation established in 2002 as a multi-stakeholder coalition of the highest ranking leaders among Rhode Island health care stakeholders. RIQI's mission is to improve the quality, safety and efficiency of health care in Rhode Island. RIQI is Rhode Island's designated Regional Health Information Organization (RHIO), which will govern and manage the statewide Health Information Exchange that is currently under development through the RI HIE Project. In the past year, HEALTH has worked closely with RIQI and its constituents to help develop its RHIO capability. RIQI has extensive experience in spurring HIT adoption among local providers and recognizes that provider adoption of EHRs will be a significant driver in the long-term adoption of Rhode Island's HIE. RIQI is leading efforts to assist provider stakeholders in establishing *EHR of Rhode Island*, a new business entity which proposes group purchasing of a "consensus" Electronic Health Record (EHR) application to make available to any provider in the state at a reduced cost. RIQI is a subcontractor to HEALTH to provide a governance structure and processes to support coordination and decision-making to direct the RI HIE Project. Figure 2 provides an overview of the RIQI organizational structure and its relationship to the RI HIE Project.

Quality Partners of Rhode Island (QPRI). As part of the RI HIE Project, HEALTH has subcontracted with QPRI, the State's Quality Improvement Organization, to engage providers in planning for HIE implementation, staff training, and workflow redesign. QPRI is engaged in similar work through its CMS-sponsored DOQ-IT Project to spur EHR adoption

in small physician offices. QPRI will leverage these relationships and EHR capabilities to support the work of the RI HIE Project.

Data Sharing Partners/Technical Solutions Group. Seven Data Sharing Partners (DSPs) agreed to participate in the five-year RI HIE Project as described in HEALTH's proposal to AHRQ. While the project does not intend to limit participation, this initial group has been working closely with the Project's Technical Solutions Group (TSG) to help describe and define the basis for DSP participation in the HIE. In the list below, ❶ indicates the initial data Sharing Partners, and their core systems, that will be included in HIE System Release 1 as defined in this procurement for initial lab data exchange. ❷ indicates the initial DSP for medication data exchange to be included in HIE System Release 1.X. Data Sharing Partners' participation in subsequent phases of work will be determined. Initial DSPs include:

- ❶ **Lifespan-Lifelinks** (major RI IDN)- Lifelinks is a lifetime clinical record system
- ❶ **HEALTH Lab-Millenium** – A clinical laboratory information system at the RI Department of Health (HEALTH)
- ❶ **East Side Clinical Laboratory (ESCL)** – ESCL has a web-based electronic interface for reporting lab tests
- ❷ **SureScripts** – An electronic prescribing network supporting physicians and pharmacies
- ❑ **HEALTH-Kidsnet** – HEALTH operates Kidsnet, an integrated child health data system with an immunization registry, lead screening, newborn screening, etc.
- ❑ **Rhode Island Health Center Association (RIHCA)** – RIHCA operates a patient registry for its twelve member health centers
- ❑ **RI Department of Human Services (DHS) Medicaid**- DHS's Medicaid claims database will be used in the evaluation component of the HIE effort

Consumer Engagement. HEALTH and the RI HIE Project stakeholders are committed to assure that the interests and perspectives of Rhode Island consumers are included in HIE design and implementation. HEALTH has contracted with Clarendon Group, a Providence, RI-based communications, government relations and public policy consulting firm, to assist in development and testing of consumer engagement strategies to support long-term adoption and use of the HIE. The RIQI Consumer Advisory Committee will provide direction and feedback into this process.

Evaluation. HEALTH has named Brown University as its evaluation partner for the RI HIE Project. Brown will Satisfy all evaluation requirements for the project and help inform infrastructure development and sustainability decisions using both process and outcome measures.

6.3 SUMMARY OF PROGRESS TO DATE

Laying the groundwork for HIE System development and deployment has been the focus of accomplishments to date. A summary of progress in areas of particular relevance to this procurement include the following:

- **Engaged Broad Set of Stakeholders –** Early in year one of HEALTH's five-year contract with AHRQ, numerous stakeholder input sessions were conducted to assess and identify stakeholder needs and requirements. In addition to gaining insight into broad stakeholder requirements for a statewide HIE, these sessions produced a set of community-endorsed RI HIE Project IT Principles which have served as guidance for the project's technical activities. These IT Principles are detailed in Appendix C.

- **Created a Community Governance Structure –** As above, the Rhode Island Quality Institute is under contract to HEALTH to provide governance and coordination with other statewide health IT initiatives for the RI HIE Project. In addition RIQI operates a series of committees with direct and indirect roles in the project (refer to Figures 2 and 3). These activities include administering the RI HIE Project Steering Committee, a related Consumer Advisory Committee, a Policy and Legal Committee and ad-hoc workgroups and developing strategies for sustainability of the statewide HIE.

- **Developed and approved an Initial Data Prioritization Plan.**

  Through the RI HIE Project, Rhode Island healthcare providers have indicated that access to an integrated, patient-centric record of laboratory information is one of their top clinical data exchange priorities, closely followed by medication information. In support of provider priorities, the Project Steering Committee approved a consensus Data Prioritization Plan which states, "The RI/AHRQ Health IT [HIE] Project will evaluate and implement a top clinical priority data set (which includes laboratory, medication and other information) and pursue feasibility of an administrative data track with Rhode Island Quality Institute Board-level action." It should be noted that the administrative track is being pursued through RIQI in a parallel effort and, while it is not anticipated to be addressed in the initial system release developed in this contracted work, the RI HIE System must be capable of linking with administrative data exchange in the near-to-medium term. Details of the HIE data prioritization plan are reflected in Table 1. Additional perspective on clinical data exchange is provided in an overview document titled, "RI HIE Project Proposed Clinical Data Categories for Exchange" in Appendix C.

Table 1. RI HIE Project Two-Track Data Prioritization Plan

Baseline Demographic Data Set (Supports patient identity management and information linkages.)		
PRIORITY	**CLINICAL TRACK**	**ADMINISTRATIVE TRACK**
1	**Lab Information** Clinical lab tests	**Insurance Eligibility Information** Insurance coverage and benefits, etc.
2	**Medication Information** Prescription medications	
3	**Reports** ER and hospital discharge, pathology, cytology, outpatient procedures, etc.	
4	**Phone numbers/contact info.** Additional important patient contact information	

- **Developed a Technical Model –** A functional data flow diagram has been developed by the Project's Technical Solutions Group and initial Data Sharing Partners. The Project's Professional Advisory Panel has also provided additional feedback on desired system functions and features. A description of these system characteristics is included in Section 6.4.

- **Created Working Laboratory Data Prototype –** The Project's Laboratory Data Sharing Partners subgroup has developed a working prototype to demonstrate lab data exchange using a standard HL7 v2.3 transaction. The work group's HL7 Specification for Lab Data Exchange is included in Appendix C.

- **Actively Addressing Policy and Legal Considerations** – Leveraging the RIQI Policy and Legal Committee, the Project has established an ongoing process to identify and

address critical policy and legal issues with input from a representative group of policy and legal experts.

- **Implementing Consumer Input Strategy** – Clarendon Group, a policy research and public relations firm, will soon be under contract to the HIE Project to seek the direct input of consumers, develop consumer adoption strategies, and collaborate with the RIQI Consumer Advisory Committee.
- **Instituted Professional Advisory Panel** – Quality Partners of RI convenes the Professional Advisory Panel and is continuously seeking input of healthcare providers and actively educating providers about Health IT efforts across the state.
- **Positioned to Perform Rigorous Impact Evaluation** – Brown University is under contract to the Project to evaluate usage and satisfaction by providers and consumers as well as identify outcome measures, e.g., repeat procedures, medication errors, etc

Figure 2. Rhode Island Quality Institute and RI HIE Project Structure

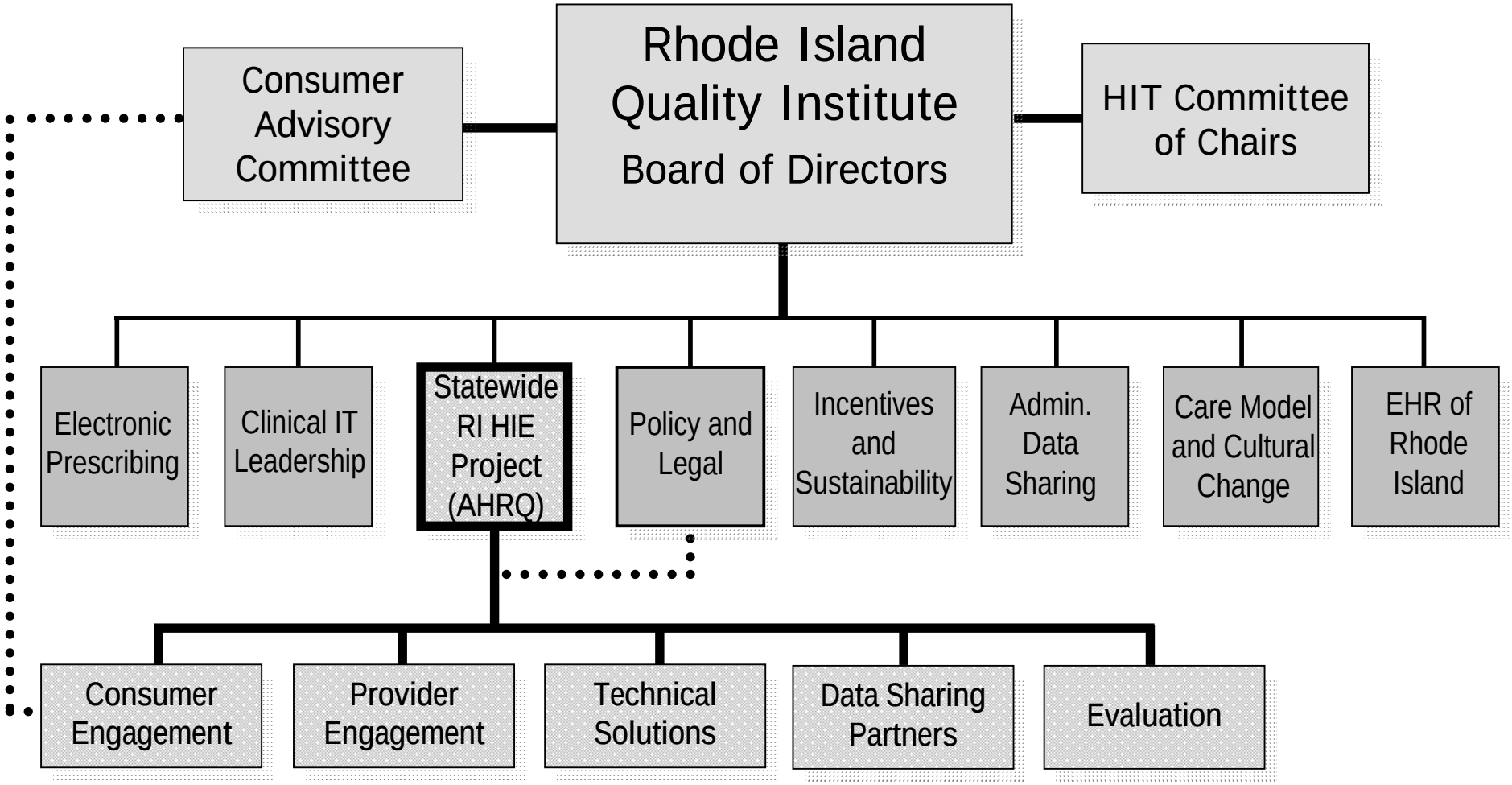
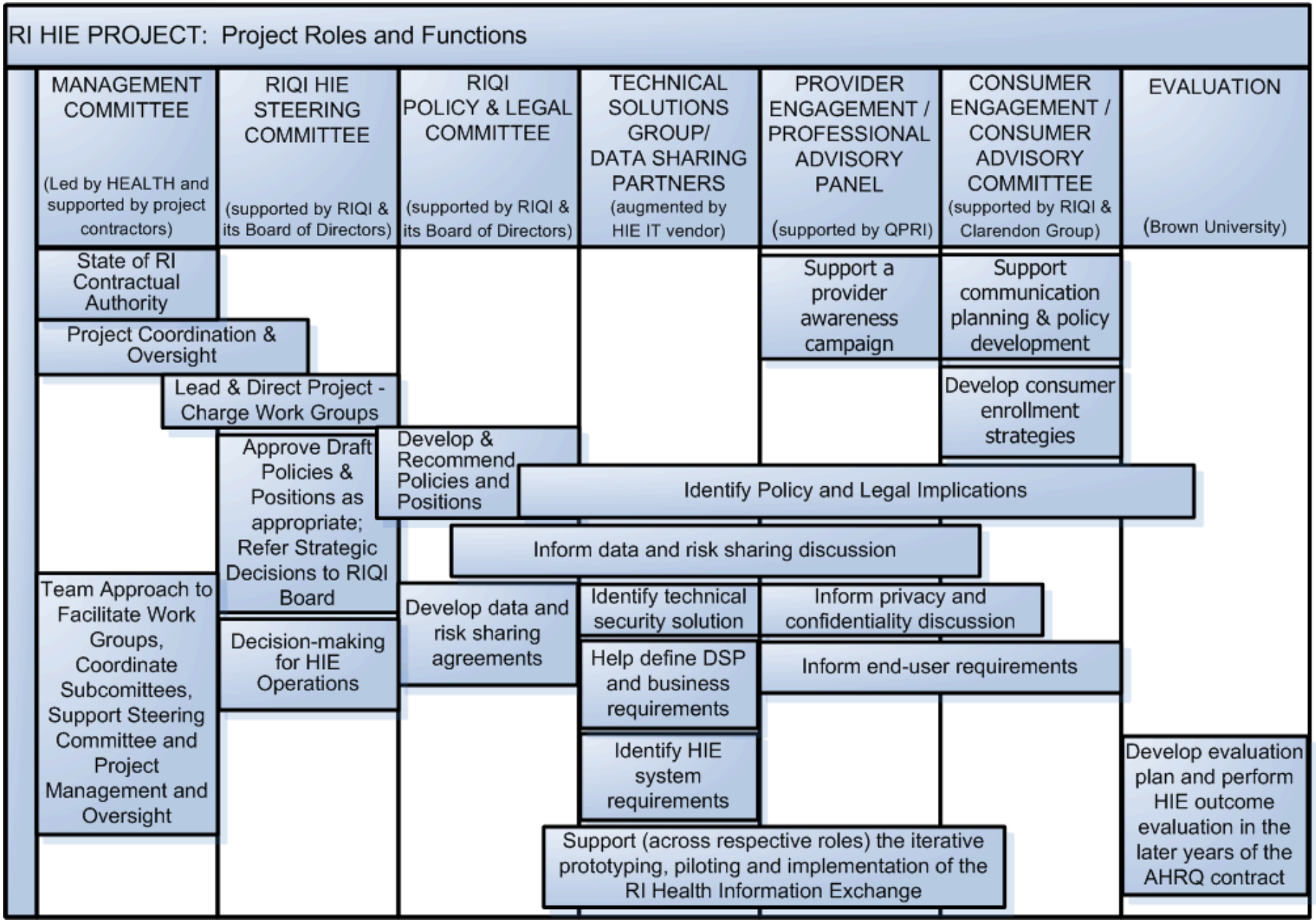


Figure 3. RI HIE Project Roles and Functions



6.4 DESIRED CAPABILITIES OF THE RI HIE SYSTEM

Stakeholders engaged in the HIE Project have identified what they believe to be the most desirable capabilities of the envisioned HIE to meet the needs of Rhode Island. Further, the Technical Solutions Group and Data Sharing Partners have described these capabilities in terms of core system characteristics. This section provides a summary of desired HIE system capabilities and characteristics for Vendor consideration in the formulation of proposed technical solutions.

1. Consumers will be supported in their right to control access to their personal health information; the RI HIE System will be designed to support consumer decisions about if and with whom they want to share health information that resides in the HIE. Such support is expected to be a combination of technical, policy and procedural solutions to be developed with consumer input as the HIE evolves.
2. Data from various sources will be combined and presented in an integrated, patient-centric view using a common user interface, e.g., web-based portal, and provide interfaces for integration to existing clinical systems (e.g., defined APIs). The release of this functionality and interfaces may be phased.
3. Data Sharing Partners desire significant flexibility in the HIE technical approach to enable a large number of small institutions and healthcare providers to share data early on. Initial DSPs have stated a willingness to consider co-mingling institutional data for staging and storage to optimize infrastructure scalability, adaptability and rapid system response time.
4. The HIE System will be designed to eventually allow data from the HIE to be imported into institutional Electronic Health Record (EHR) applications and support the transfer of EHR data to the Health Information Exchange, as permitted and desired.
5. The HIE System will be designed to eventually provide physician end-users with basic clinical decision support capability around integrated health data sets. This capability may include reminders, alerts, medication formularies, etc.
6. The HIE System will be designed to specifically address the intersection of private-sector health information creation with public sector health information needs by providing the capability to aggregate and utilize health data for public health purposes such as: Population based analyses, quality improvement, evaluation, surveillance, research, etc.
7. Much of the cost for the system is expected to be borne in the middle (RHIO) vs. at the edges (data sharing partners). This implies the need for methods and cost-sharing models to equitably distribute and cover ongoing costs of HIE operations and maintenance. These methods and models have not yet been determined.
8. Technically, the RI HIE System is envisioned to utilize a highly flexible, scalable Service-Oriented Architecture (SOA) that is component-based to allow for incremental addition of services. These components would be loosely coupled with a preference for web services interfaces. The service "stack" would be standards-based to the fullest extent possible while also allowing for flexibility in the specific implementation. As emphasized, initial data exchange priorities include core demographic information and laboratory data followed by medication information, reports (e.g., procedures, diagnostic interpretations, discharge summaries, etc.) and additional patient contact information (phone numbers).

A series of diagrams, tables and reference documents are provided in this section as additional background to describe the envisioned HIE system attributes. Figure 4 depicts major system functions and data flow through the HIE. Figure 5 provides a "services" view into HIE Release 1 for lab data exchange and assumes an HL7 v2.3 specification as defined by current lab DSPs in Appendix C. Table 2 provides a high-level description the desired HIE capabilities in terms of expected system attributes that may be included in the

HIE solution. The rationale for these expectations are described to offer additional perspective on stakeholder requirements.

Vendor responses must address the HIE requirements for specific use cases and general requirements as referenced in Section 7: Statement of Work. In addition, Vendors must address specific functional and supplementary requirements by completing and submitting the HIE Requirements Table (Appendix B) as a mandatory component of the response. A complete response checklist is provided in Appendix D.

It should be noted that the depictions and descriptions in this section are not intended to specify an architecture but are intended to reflect important attributes and functionality of the HIE that the RI HIE Project's Technical Solutions Group and initial Data Sharing Partners would like prospective Vendors to consider and respond to in their proposed solutions.

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Figure 4. Rhode Island HIE: Desired Functionality and Data Flow Model for Clinical Use

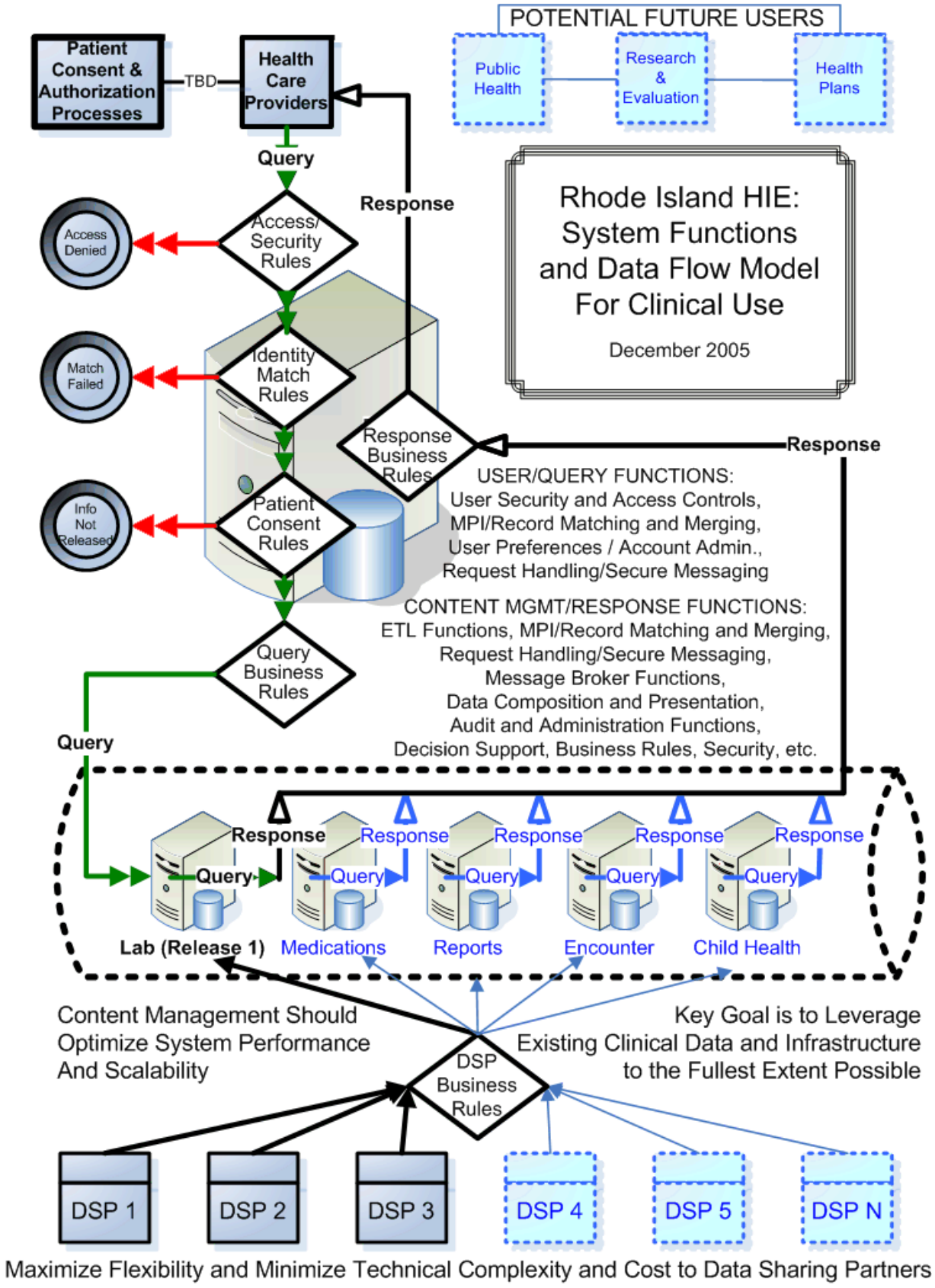


Figure 5. Rhode Island HIE Release 1 Services Model for Lab Data Exchange

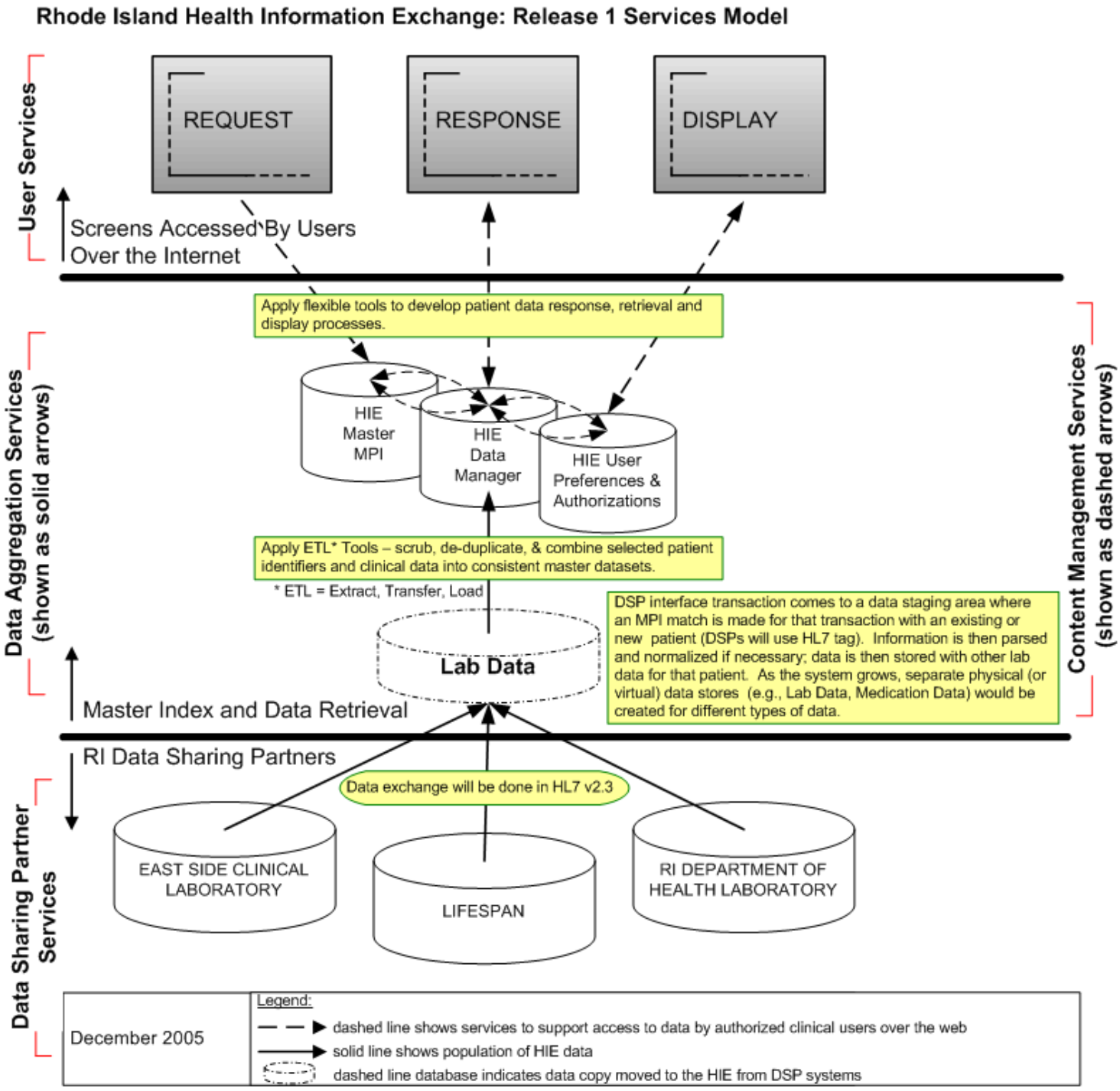


Table 2. Desired HIE System Attributes and Rationale

DESIRED HIE SYSTEM ATTRIBUTES	RATIONALE
IDENTIFICATION/ AUTHENTICATION/ AUTHORIZATION / SYSTEM ACCESS Applicable HIE functions include, but are not limited to: unique patient identification, storage and linking of DSP-level patient identity and consent "data tags", requester identification/ authentication, and security/business rules. Identity matching, merging and data de-duplication (master person index/MPI) functions will locate, manage, store and link unique patient identifiers and data tags from multiple sources to facilitate data access controls, and, if authorized, the location and retrieval of electronic health information.	Consumers have a right to determine who sees their personal health information and for what purposes that information is used. Extending this through the HIE solution is believed to be a key element in the initial acceptance and long-term adoption of the statewide HIE. Therefore, the implications of this feature for both consumers and authorized end-users must be considered at HIE inception. System access rules (and the supporting technology) are intended to be consistent with applicable privacy, confidentiality and security standards and laws.
ACCOUNT ADMINISTRATION/MGMT AND CONSUMER-INITIATED DATA ACCESS CONTROLS Designated parties should be enabled to administer HIE end-user accounts. Consumers should be able to specify data access controls to grant authorization and proxy information to disclose data.	Information access rules (and the supporting technology) are intended to be consistent with privacy, confidentiality, security standards, policies & laws. Assumes protected health information (PHI) can be moved from DSPs to the HIE without explicit patient consent but that any and all PHI disclosures are subject to prior active consent by the patient or a legally permissible representative.
REQUEST HANDLING Healthcare providers, consumers and other authorized end-users will be able to query the HIE for information using a standard web browser and web-level security protections. Applicable HIE functions include, but are not limited to: single and multiple patient look-up (identified and de-identified), secure messaging, print/save (responses), reporting and import/export as end-user interfaces allow. System design should allow for longitudinal record management and, eventually, population-based analyses to support research and public health goals.	An important community goal is to assure very low barriers to adoption and use by minimizing infrastructure requirements for DSPs and end-users and, ultimately, to support patient access to their own information when relevant policy, legal and technology issues are resolved. Web-based technologies are favored to support a broad range of user types and capabilities.

DESIRED HIE SYSTEM ATTRIBUTES	RATIONALE
CUSTOMIZATION Healthcare providers, consumers and other end-users will be able to customize their HIE "portal" interface to include frequently used links and other information such as health alerts. Infrastructure should support the future state of custom integration to end-user systems as users (and their Vendors) may require. Eventually, consumers should be able to enter, review and save/print their own personal health record (PHR) of patient-entered health information.	Basic portal flexibility is intended to help promote end-user adoption. For consumers, basic PHR functionality may help address personal health information management, usability and portability. RI providers have indicated a desire for HIE integration to various electronic health record (EHR) platforms.
CONTENT MANAGEMENT Will include multiple sources of data and the interfaces, connections, identity management functionality and business logic to support content management. A highly scalable infrastructure should allow the addition of data types to grow the system without restrictions as to physical location of the data. Additional failover and fault tolerance mechanisms may be included as required by stakeholders and should be supported by policy. Will use Business Associate Agreements with all data staging facilities to address pre-disclosure HIPAA protections. Solutions should be able to support both structured and unstructured content.	Envision the use of a distributed database structure to help limit the scope of system failure due to human, natural or technical disasters. A key goal is to preserve infrastructure flexibility and place data governance and management responsibility with the most knowledgeable entities as designated by the community. Community and local policy decisions will determine when, where and how data is sent AND how data is managed (including data transformation, normalization and other data governance decisions). A collaborative precedent has been set and affirmed in Rhode Island.
BROKERED SERVICES Support for standards-based message handling/routing, data retrieval, standardization, compilation, and presentation services, etc.; between user requests and "back end" data systems. Use of ETL tools is assumed.	Service oriented architectures and Business Process Management approaches are felt to support unlimited deployment models: ASP, in-house, combination in-house /outsource, etc. This will be an important element in assuring a flexible infrastructure.
DATA SHARING Support the transfer of data from "certified" data sharing partners into the HIE. Technology should support data sharing agreements and policies to allow data sharing providers to perform timely submission and updates to information in the system. Data sharing policies and the discrete service level agreements that support them must be defined.	"Ease of entry"--no complex, expensive infrastructure requirements (message-based data submission). Flexible participation options for large and small data sharing partners; important in Rhode Island. Minimizes impact on DSP daily operations. DSP participation in the system includes assurance that baseline data quality is acceptable and timely updates can be supported.

6.5 STATEMENT OF NEED

6.5.1 MANDATORY SERVICES (MS): RI HIE SYSTEM RELEASE 1/1.X

The RI HIE Project is seeking assistance to design, develop, test and implement the foundational technical solution and system architecture to accomplish statewide health information exchange as permitted by applicable laws, regulations, policies and agreements. Release 1 of the proposed HIE system must support authorized healthcare provider access to clinical laboratory data from three named data sharing partners. A subsequent iteration of HIE Release 1.X must support authorized healthcare provider access to prescription medication information from SureScripts and other data sharing partners to be determined. Assistance associated with HIE Release 1 and 1.X includes the creating the capability to support interoperable lab and medication data exchange using Vendor-provided products and services. Required Services include:

MS1. Commercial or Government off-the-shelf (COTS / GOTS) or open-source HIE applications and tools

MS2. Processing environments

MS3. HIE System implementation services

MS4. HIE integration services

MS5. HIE technical and end-user documentation

6.5.2 OPTIONAL SERVICES (OS)

In addition to stated needs for HIE Release 1/1.X, HEALTH has identified other areas of assistance as integral elements of the implemented solution and intends to include all of the following as optional services in the contract award as needs arise and funding permits. Offerors should include descriptions of optional services that may be provided in addition to implementation of the proposed solution, as applicable. These descriptions should be included in the response as Vendor Form F-9.

It is expected that as needed to support any optional services provided, the Vendor and HEALTH will enter into formal, written Service Level Agreements (SLAs) for any hardware, software, operating system software, disaster backup and recovery processes, performance and system support monitoring, error recovery, disk storage management, system software and hardware upgrades, capacity planning, preventive system maintenance, help desk, communications network, problem management, and status reporting and daily system support. Therefore, Vendor proposals should address the following RI HIE Project needs for optional services to the greatest extent possible:

OS1. Design, test and implement additional priority data categories for exchange through the HIE. These include, but may not be limited to:

- OS1.1 Reports (emergency department and hospital discharge summaries; pathology, cytology, outpatient procedure, radiology reports, etc.)
- OS1.2 Additional patient phone contact information
- OS1.3 Administrative (health plan) data, specifically, insurance eligibility information (Insurance coverage and benefits, etc)
- OS1.4 Child health data (link to KIDSNET integrated database)

OS1.5 Medication allergies

OS1.6 Imaging data

OS2. Provide ongoing HIE System / application technical support and maintenance

OS3. Provide operations support and hosting services for the HIE

OS4. Provide HIE System disaster recovery and backup services

OS5. Provide HIE System Administrator and end-user training. Both technical and end-user components should be included in a description of the Vendor's training approach.

OS6. Provide additional integration services to support interoperability of the RI HIE System with other information exchange infrastructures, e.g., state Medicaid systems/databases, other RHIOs, etc.

6.5.3 COSTING

Detailed costs to provide the full spectrum of Vendor-proposed products and services should be addressed in the Cost Proposal (See Form-8) for each of three contract years and for a fourth year, assuming a 12-month contract extension. Labor rates for Optional Services should be clearly delineated in the Labor Rates Schedule. In addition, respondents are required to provide estimates of the Total Cost of HIE System Ownership/Operation (TCO) for years 5 – 10. TCO methodology and assumptions should be clearly stated.

6.6 ADDITIONAL BACKGROUND RESOURCES

This section includes a list of links to resources that HEALTH considers important background material. A selection of full-text Key Reference Documents are included in Appendix C.

- RI DOIT Project Management Policy: http://www.doit.ri.gov/projects/policy.php
- AHRQ Contract Provisions and FAR clauses: See Appendix C.
- PIDS OMG Reference: http://www.hipaanet.com/upin7-10.htm; and http://www.amia.org/pubs/symposia/D200400.PDF
- Office of the National Coordinator for Health Information Technology http://www.os.dhhs.gov/healthit/
    - Health IT Strategic Framework: http://www.os.dhhs.gov/healthit/frameworkchapters.html
    - Health IT Standards: http://www.os.dhhs.gov/healthit/standards.html
    - HIPAA Transaction Sets and Standards: http://www.cms.hhs.gov/hipaa/hipaa2/default.asp
    - HIPAA Privacy: http://www.hhs.gov/ocr/hipaa/
- California Health Care Foundation iHealth and Technology: www.chcf.org
    - 2005 National Consumer Health Privacy Survey: http://www.chcf.org/documents/ihealth/ConsumerPrivacy2005Slides.pdf
    - Clinical Data Standards in Health Care: Five Case Studies: http://www.chcf.org/documents/ihealth/ClinicalDataStandardsInHealthCare.pdf
- AHRQ National Resource Center for Health IT http://healthit.ahrq.gov/home/index.html
- CDC's Public Health Information Network (PHIN) Standards: http://www.cdc.gov/phin
- Department of Justice Systems Development Life Cycle Guidance Document, January 2003. See http://www.usdoj.gov/jmd/irm/lifecycle/table.htm
- Checklist of Checkpoints for Web Content Accessibility Guidelines 1.0. http://www.w3.org/TR/WCAG10/full-checklist.html
- IEEE Standard 730-2002: Software Quality Assurance Plan http://standards.ieee.org/reading/ieee/std_public/description/se/730-2002_desc.html

SECTION 7. STATEMENT OF WORK

It is the State's intent to award a contract to develop, install, customize (including integration activities), implement, and maintain the HIE processing environments according to specific Requirements and as mutually agreed upon by HEALTH and the Vendor. To the extent feasible, it is the State's intent to also include a defined set of optional services in the contract, as specified by the Vendor and mutually agreed upon.

This section encompasses the detailed Statement of Work for the HIE system procurement and describes known technical, operational and policy interdependencies as applicable. Section 7.1 describes the specific scope of lab and medication data exchange, the priority for Release 1 and Release 1.X, respectively, of the RI HIE and the focus of the first three years of contracted work. In addition to general requirements described in Section 7.2, a relevant set of functional and supplementary (technical and non-functional) requirements are also introduced in this Section and presented in tabular form in the HIE Requirements Table in Appendix B for Vendor completion and mandatory inclusion in the Response. Section 7.3 includes Table 4 which lists specific Deliverables that must be addressed during the contract term.

7.1 SCOPE

7.1.1 RELEASE 1/1.X: HIGH-LEVEL, DETAILED AND NARRATIVE USE CASES

A series of use case diagrams and narrative are used to depict the relevant scope of the HIE environment and core functions of Release 1 and the next iteration, Release 1.X, of the envisioned HIE System. Figure 6 is a schematic process flow diagram depicting a high-level HIE use case for laboratory data exchange. As emphasized, lab data is the priority data type for prototyping and live pilot exchange in HIE System Release 1 and the basis for testing the infrastructure and system architecture intended to support other types of data exchange in subsequent system releases. For example, prescription medication data is prioritized for implementation in Release 1.X, using the infrastructure that supports lab data exchange. This use case is intended to describe, in non-technical terms, how user actions and system processes interrelate to support the goals of interoperable health information exchange. In this figure and the detailed use case to follow, interactions with the HIE System are noted by dotted lines.

To provide context for HIE System requirements, Figure 7 is a process flow diagram depicting a more detailed end-to-end representation of the envisioned lab data exchange. This diagram represents the entire business process that must be supported by the HIE System in the first Release and therefore reflects additional considerations about the actors in the cross-section of healthcare and HIE environments that would be involved in a basic lab data query-response interaction with the HIE.

While Release 1 must result in a functional data exchange system, it is equally important that the architectural components to support all of the intended data be described, justified and scalability illustrated. The narrative use cases below further address actor roles and additional maintenance, security and access functions that the HIE System must include.

Figure 6. High Level Use Case for RI HIE Release 1—Laboratory Data Exchange: Ambulatory Care Scenario

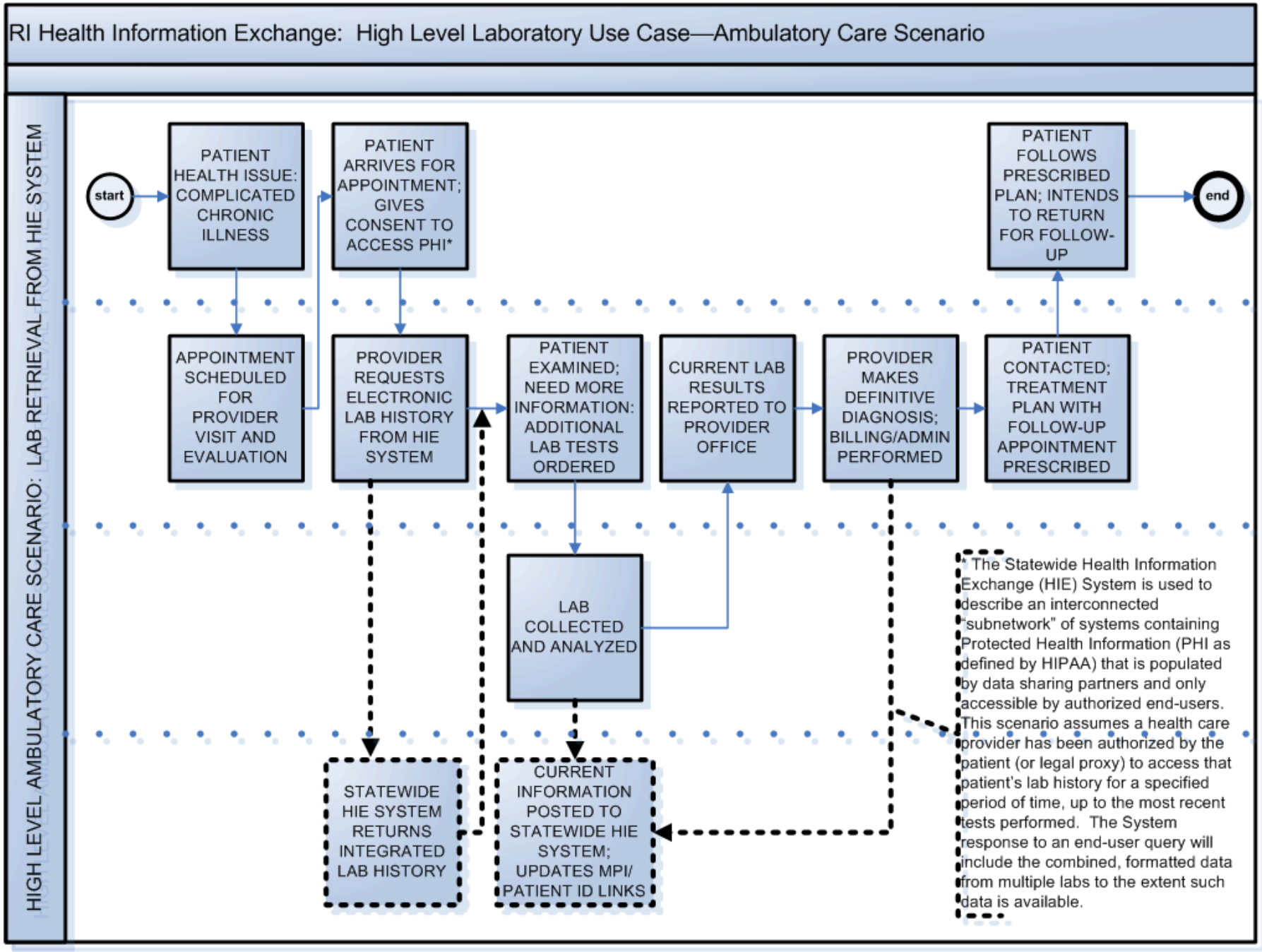
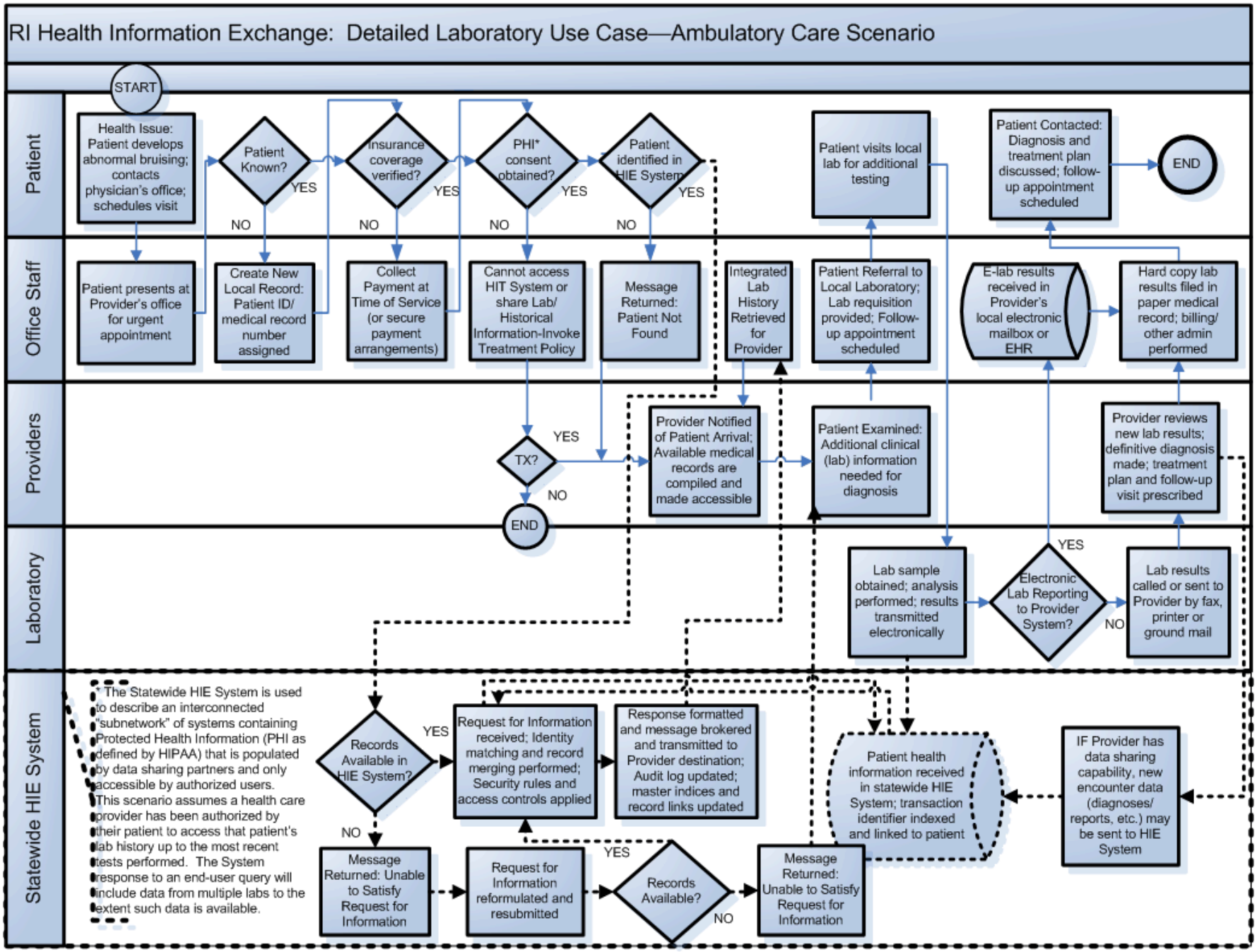


Figure 7. Detailed Use Case for RI HIE Release 1—Laboratory Data Exchange: Ambulatory Care Scenario



The general use case for HIE Release 1 and Release 1.X is described below. In Release 1, the basic infrastructure of the RI HIE System infrastructure will be deployed and interfaces will be implemented to support the delivery of Laboratory data from a limited number of DSPs (3) to a limited number of data users (see Workload assumptions). The general use case also applies to medication information exchange, anticipated to be the second data type implemented using the same Release 1 infrastructure (as Release 1.X).

HIE System Primary Actors

Actors are the persons or systems participating in the business processes implemented by the proposed HIE System. The following actors are included in the narrative use cases described below:

Data Sharing Partner – An entity contributing original source data to the HIE System.

Data User – A healthcare provider or other authorized entity/individual that is a consumer of health information in the HIE System.

Requester – Person requesting patient health data. A requester will, by definition, also be a Data User.

Staging Servers – Systems which support real time access to patient data from Data User systems without requiring real-time access to DSP's operational systems.

Trading Partner – A Data Sharing Partner, Data User or other entity that interacts directly with the HIE System in a business, clinical, technical or otherwise legitimate capacity.

Provider EHR system – A healthcare provider's Electronic Health Record system. EHR systems may act as Requester on behalf of a provider either for immediate display or to pre-retrieve information for later access.

Provider (User) Security Administrator – A staff member in a provider's (data user's) organization authorized by the designated HIE System Security Officer to configure credentials and authorizations for new users of the HIE System.

HIE System Security Officer – A person responsible for managing access to the HIE System, primarily by authorizing Provider Security Administrators.

HIE System Administrator – A person who performs HIE System administration and configuration tasks such as configuring data sources and installing and maintaining HIE infrastructure components.

Use Cases

These general use cases include: (A) Administration/Configuration and (B) Data Access scenarios. Note that for different data types (labs, prescriptions medications, etc.) there will be specific implementations of the Data Access use cases in HIE Release 1 / Release 1.X and Future Releases. These specific cases should be based on the general use cases. Requirements for infrastructure and general capability for related use cases such as reporting, backups and infrastructure maintenance are included in the Supplementary Requirements in the HIE Requirements Table. Where requirements are not enumerated, respondents should provide details of their recommended requirements.

GENERAL USE CASES FOR RELEASE 1 / 1.X

A. Administration and Configuration Use Case

1) Data Sharing Partner / Data User Maintenance

a) **Add / Modify/Delete a new Trading Partner.** Used to add a new Data Sharing Partner or Data User (i.e., HIE Trading Partner) to the infrastructure. Configure connectivity, routing and security information for the Trading Partner as well as identifying the types of data to be shared or consumed. Authorize Provider Security Administrator to manage credentials and authorizations for Data Users.

b) **Add (provision) a new data source.** Used to make the data in a Data Sharing Partner's data source available to the HIE network. Create metadata for a data type. Create mapping and normalization rules. Populate Master Person Index (MPI) entries in the HIE for patients in DSP data sources. Other functions as required.

c) **Trading Partner certification.** Process for assuring that a new Trading Partner meets all business, technical, legal and policy requirements for participation in the HIE System. Verify HIPAA Business Associate Agreements, run test scenarios, and other functions as required.

2) Security

a) **Add / Modify / Delete a Data User.** Used to manage identity credentials and authorizations for Data Users to access patient data via the HIE System. Certify Data User identity. Register new Data User identity. Configure a federated or proxy authentication for a Data User. Configure Data User roles and access privileges. Revoke Data User roles and access privileges. Other functions as required.

b) **Add / Modify / Delete data element access rules.** Used to manage mapping of Data User roles to data access privileges. Add roles. Add roles to data access mappings and authorizations/ restrictions. Other functions as required.

B. Data Access Use Case

1) Publish / Manage Patient Identity Information and Consent. Used to manage identity information on a new individual in a Data Sharing Partner's system. Publish patient identity matching data to the HIE System. Publish patient consent authorizations (for health information disclosure) and any restrictions. Modify patient consent authorizations (for health information disclosure) and any restrictions. Other functions as required.

2) Real time data request. Request data on an individual from multiple DSPs for immediate display. Authenticate requester. Locate applicable patient information. Verify data access rights. Other functions as required.

a) **Web based.** Requester gains direct access to data and HIE features via a web page provided by the HIE System infrastructure. Other functions as required.

3) Real time response. Process by which data is retrieved from Staging Servers. Other functions as required.

4) Display. Process by which Data User preferences are expressed in the presentation of an integrated data view through the Data User's HIE system interface. Other functions as required.

7.1.2 FUTURE HIE SYSTEM RELEASES

The Future HIE System use case below builds on the General Use Case for HIE Release 1 / 1.X as described above. Additional requirements are noted in **BOLD CAPS.** While the focus of the contract is to deploy the HIE infrastructure to support Release 1 / 1.X functionality, Vendors should describe the infrastructure and architectural requirements and development path to support future release functionality in their response.

GENERAL USE CASES FOR FUTURE RELEASES

A. Administration and Configuration Use Case

HIE INFRASTRUCTURE SHOULD FUNCTION AS DESCRIBED IN THE GENERAL ADMIN/CONFIG USE CASE FOR RELEASE 1/1.X ABOVE

B. Data Access Use Case

1) **Publish / Manage Patient Identity Information and Consent.** Used to manage identity information on a new individual in a Data Sharing Partner's system. Publish patient identity matching data to the HIE System. Publish patient consent authorizations and any restrictions. Modify patient consent authorizations and any restrictions. Other functions as required.

2) **Real time data request.** Request data on an individual from multiple DSPs for immediate display. Authenticate requester. Locate applicable patient information. Verify data access rights. Other functions as required.

   a) **Web based.** Requester gains direct access to data and HIE features via a web page provided by the HIE System infrastructure. Other functions as required.

   b) **System to System.** Supports access to data via a messaging system from the requester's EHR application. Other functions as required. **FUTURE RELEASE REQUIREMENT**

3) **Real time response**. Process by which data is retrieved from Staging Servers. Other functions as required.

4) **Display.** Process by which Data User preferences are expressed in the presentation of an integrated data view through the Data User's HIE system interface. Other functions as required.

5) **Deferred (asynchronous) batch data request.** Process for retrieving large amounts of data for analytic purposes. Other functions as required. **FUTURE RELEASE REQUIREMENT**

   a) **Web based.** Query is entered via the web and data is consolidated in the HIE System infrastructure for download at a later time. Other functions as required. **FUTURE RELEASE REQUIREMENT**

   b) **System to system.** Query is entered via a messaging transaction and results are returned to requester via one or multiple messaging transactions. Other functions as required. **FUTURE RELEASE REQUIREMENT**

6) **Deferred (asynchronous) batch response.** Process by which batch data is retrieved from DSPs, consolidated and returned to Requesters. Retrieve data from DSP Staging Servers. Apply security constraints. Merge and standardize. Stage for web download or message-based transfer to Requester. Other functions as required. **FUTURE RELEASE REQUIREMENT**

In the process of the implementation of Release 1 / 1.X, lessons will be learned and the state of the art will be advanced. Vendors must describe how their proposed solution provides for growth and functional expansion of the infrastructure for use cases not implemented in Release 1 / 1.X and anticipated future requirements. Lessons learned should be captured in the related contract deliverable.

7.1.3 IMPLEMENTATION PRIORITIES

Table 3 describes HEALTH's implementation priorities for this HIE project where years are defined by contract year as follows:

YEAR 1 Activities to be addressed in YEAR 1 (contract month 0 – 12)

YEAR 2 Activities to be addressed in YEAR 2 (contract month 13 – 24)

YEAR 3 Activities to be addressed in YEAR 3 (contract month 25 – 36) or in prior Year if budget, timelines and interdependencies allow.

YEAR 4 Activities to be addressed in YEAR 4 (if contract extension; months 37 – 48) or in prior Year if budget, timelines and interdependencies allow.

YEAR N Activities to be addressed in subsequent years after contract month 48 of HIE implementation.

Table 3. Implementation Priorities

YEAR	HIE IMPLEMENTATION ACTIVITY	KEY STAKEHOLDERS IMPACTED
1	Design, develop, prototype and live pilot testing of Release 1 of the core HIE System with lab data; perform historical lab data conversion and migration as feasible. Incorporate and test patient consent processes.	■ Lifespan ■ East Side Clinical Laboratory ■ HEALTH Lab ■ Pilot end-user organizations ■ Consumer advisory group
1 or 2	Expansion of HIE Release 1.X live pilot to include all lab data from initial DSPs and add medication data; continued historical data conversion and migration, as feasible. Incorporate patient consent processes and add/test more provider end-user and consumer functionality, as is feasible and supported by stakeholders.	■ Lifespan ■ East Side Clinical Laboratory ■ HEALTH Lab ■ Other commercial labs, as identified ■ Surescripts ■ Other medication data sharing partners, as identified ■ Pilot end-user organizations ■ Consumer advisory group
2 & 3	Transition Release 1.X to production, offering integrated lab, medication (and other data as feasible) to provider end-users in Rhode Island that have been authorized by patients to see their protected health information. Incorporate additional end-user and consumer functionality as is feasible and supported by stakeholders.	■ Lifespan ■ East Side Clinical Laboratory ■ HEALTH Lab ■ Other commercial labs, as identified ■ Surescripts ■ Other medication data sharing partners, as identified ■ KIDSNET ■ Other data sharing partners; may include administrative (health plan) data ■ End-users: Providers, provider office staff, other authorized users ■ Consumers
4	HIE Release 2 -- Operation and maintenance of production system, offering integrated lab, medication, child health and other data to authorized end-users in Rhode Island. Added capability for population-based queries to support public health and research objectives.	■ All of the above
X	Any of the above not feasible in initial implementation phases	TBD
X	Optional Services offerings	TBD

7.2 REQUIREMENTS

Vendor Response must include a description of the specific approach to be used to address the following requirements listed or referred to in this section and the HIE Requirements Table in Appendix B. Responses should be packaged according to the Vendor Response Checklist and as specified in the overall Scope of Work Narrative outlined in Vendor Form F-6.

7.2.1 GENERAL REQUIREMENTS

7.2.1.1 Project Planning and Management: DOIT Requirements

- Vendors should adhere to specific project management requirements specified by DOIT. See Section 6.6 for related DOIT links, of particular importance are procedures that Rhode Island IT Managers must use to manage large IT projects. It is recommended that these procedures and reporting requirements be incorporated by Vendors for project management, especially where iterative reports are required deliverables for this HIE project.
- The Vendor should, on an ongoing basis, deliver to HEALTH all information regarding contractor performance necessary for the agency to meet its project reporting obligations under DOIT policies. Such information may include, but is not limited to, the following reporting requirements to be satisfied under the awarded contract:

  1. Biweekly Project Status Briefings and issues management.
  2. Monthly Project Status Reports including estimated cost to completion data, change management and risk management updates.
  3. Requirements Traceability Matrix referencing the Work Breakdown Structure numbering scheme used in the Project Work Plan.
  4. Gantt charts, with critical path identification, and identifying milestones, showing progress to date, with identified start and finish dates for all tasks, and correlated one-to-one with the Work Breakdown Structure.
  5. Quality Assurance Reviews and Lessons Learned regarding causes of variances and the rationale for corrective action.

When requested by HEALTH, the project reporting information shall be provided in compatible electronic form as well as printed output (the State uses Microsoft Project® as its primary project management software package).

7.2.1.2 System Development Life Cycle Methodology

Vendors are required to specify and use a Systems Development Life Cycle (SDLC) methodology to be applied as a comprehensive planning and management tool for the RI HIE information system project. To the greatest extent possible, the chosen SDLC framework should be used in the response as the basis for the Project Work Plan (D-3) and to delineate the general sequence of project deliverables (see the full listing in Table 4). The Project Work Plan must be organized using a numbered Work Breakdown Structure that corresponds to applicable SDLC Phases, or other Vendor-specified phases of work.

7.2.1.3 State, Federal and Health Data Exchange Standards

- Vendor Response shall reflect Vendor agreement to adhere to HEALTH-specified standards and requirements in the provision of products and services related to this RFP. Standards and related requirements are described in the HIE Requirements Table and further referenced in Section 6.6. In addition to consideration of PHIN and HIPAA standards, Vendor should recommend relevant data standards as applicable to the secure exchange of health information. HEALTH will consider well-documented, justified alternatives where there is flexibility in the requirements.

7.2.1.4 Quality Control

- Vendor must demonstrate quality assurance/quality control practices to address performance to correct defects found as a result of HEALTH/user quality assurance surveillance and by the Vendor as a result of quality control procedures. Measures to correct quality problems shall be at the Vendor's own expense and without additional reimbursement by HEALTH or the State of Rhode Island. Quality control practices should be described and submitted with this response.

  Over the course of the contract, Vendors are required to produce a set of related deliverables including a Software Quality Assurance Plan and an Issues Tracking Process.

7.2.2 Implementation Requirements

- In the Implementation Plan submitted with this response, Vendor will clearly define its approach to the planning and execution of all HIE System implementation activities throughout the period of the contract.

  Related deliverables over the course of the contract include:

  A fully functioning version of each of the core applications in the HIE System which must be delivered as agreed and installed upon an agreed upon date after Vendor notification that the development environment is ready; a Detailed Gap Analysis, Prototypes and Prototype Sessions, Detailed Design Specifications, Pilot Site Rollout Business Readiness Plans, and Production Software. (See Table 4: RI HIE System Contract Deliverables for details.)

7.2.2.1 Processing Environments; Backup and Disaster Recovery

- Working with DOIT/HIE Project IT staff, the Vendor shall establish and maintain up to four (4) processing environments for the RI HIE System. These processing environments are:

  a. Production
  b. Testing/QA
  c. Development
  d. Training/QA

  Additional details of these requirements are included in the HIE Requirements Table, references PROC-1 through PROC-4.

- Vendor Response should indicate how it intends to maintain secure processing environments. Subsequent details of this requirement may be addressed in the Security Plan and the Backup and Disaster Recovery Plan, a required Vendor-provided deliverable to detail day-to-day procedures for system backups and restore operations.

7.2.2.2 Pilot Implementations

- Vendors should assume the use of live pilot implementations as an integral part of the HIE quality control, user acceptance and pre-production testing and describe the approach to pilots in the Implementation Plan to be submitted with the Vendor response. In HIE System Release 1, an initial pilot implementation of the core HIE at HEALTH and in at least five (5) distinct user locations should be factored into the Project Work Plan and Cost Proposal (Form F-8) to be submitted with Vendor's response. For subsequent iterative releases, Vendor response should specify all pilot testing and roll-out assumptions.

7.2.2.3 HIE Implementation Support: Maintenance and Operations, Modifications, Help Desk, Upgrades and Release Support

- Starting with the implementation of the first live pilot sites, and for the duration of the three-year contract, the Vendor shall be required to perform system maintenance and operations, modifications, and any Help Desk functions, Vendor application support, upgrades, and release support for the HIE System.

  In addition to a description of support services included in the Implementation Plan to be submitted with the Vendor response, details of Vendor performance for Maintenance and Operations, Modifications, Help Desk, Upgrades and Release Support should also be included in the following deliverables (See Table 4 for details):

  - Maintenance and Operations Staffing Plan and User Help Desk Services (Details may be included as part of the final Staffing Plan).
  - Change Management / Configuration Management Plan and Issues/Change/Action Item Log should include a description of methods and procedures for capturing, tracking and resolving project issues throughout the project.

  Maintenance requirements shall be addressed throughout the project. Implementation of the proposed solution may require modifications to the maintenance plan throughout the project. Therefore, the Vendor must keep relevant contract deliverables up-to-date to support maintenance and operations activities.

7.2.3 System Requirements

7.2.3.1 Functional and Supplementary Requirements

This section refers to the desired system functionality and additional non-functional (technical and other supplementary) requirements not discussed in the General Requirements section. Vendors should relate the functionality implied in the discussion of use cases to the core functional requirements for the RI HIE. During the project elaboration or detailed requirements phase of the awarded contract, bidders will be expected to develop detailed design specifications.

The details of the desired solution and related Vendor requirements are described in the HIE Requirements Table in Appendix B. The Table offers a structured format to specify the details of the requirements and Vendors must attest to the degree to which the proposed solution, Vendor capabilities and/or the details in the Vendor's Response satisfies specific requirements. Appendix A describes instructions for completing the Table including the five-level scale used

to guide requirement-specific responses. Additional narrative to support a given response should be cross-referenced to the Requirement Reference Number and be provided at the end of the Table or in an attachment to the Table. **Vendors must complete this Table and include it in the Response to this RFP.**

The HIE Requirements Table includes requirements representing the collective needs of HEALTH stakeholders to support interoperable health information exchange in Rhode Island. All requirements are desirable and felt to be of primary importance; however, implementation priorities may vary depending on what functionality (and related technical requirements) are included in the Vendor-proposed HIE System. It should be noted that detailed requirements may not be fully defined. The requirements specified in this RFP are intentionally high-level to allow for flexibility in Vendor responses on the technical and architectural approach and to encourage justifiable alternatives. Details of Vendor-recommended or alternative approaches to the requirements may be included in related parts of the response but should be cross-referenced to the applicable requirement in the HIE Requirements Table.

Vendors are directed to prepare a Response describing their recommendations for the most OPTIMAL implementation prioritization plan given specific product functionality, Vendor capabilities, specified requirements, timing and cost.

The overall Vendor Response will need to describe the proposed solution based on Vendor experience and ability in integrating with legacy/clinical (or similar) systems, keeping in mind that applicable HIPAA security and health data exchange standards must be met. Vendors should take care to refer to applicable standards for secure interoperable health information exchange noted in this RFP when providing responses to technical requirements.

Please include in the details of the Response as much information as possible such as the estimated time to deliver the solution with anticipated customization, effort in programming hours, etc. In the interest of addressing details without redundancy, the liberal use of cross-references is encouraged between the HIE Requirements Table, Vendor Completion Forms and other narrative sections of the response.

7.2.3.2 Architecture and Infrastructure

The RI HIE System Project is a long-term project based on an incremental approach to deployment and adoption. While the initial deployment will be targeted to only a few end-users and Data Sharing Partners providing laboratory data (Release 1), followed by medication data (Release 1.X), the architecture and design of the system must, from the outset, consider all of the components required to support a full range of Electronic Health Records and administrative data for all of the healthcare providers and Data Sharing Partners in Rhode Island. Responses must clearly show how the long term requirements of the RI HIE will be met by the proposed architecture. To the greatest extent feasible, architectural components should be incorporated and demonstrated as part of the HIE System Release 1/1.X implementations. Proposals should explain how the proposed architecture will be scaled to meet current and future capacity needs.

7.3 CONTRACT DELIVERABLES AND TIMELINE

7.3.1 CONTRACT DELIVERABLES

As noted above, Vendors will follow a defined Project Management methodology that includes the use of Microsoft Project® to develop and maintain a Project Work Plan, including an appropriate Work Breakdown Structure (WBS), to determine performance status for the HIE System Project. Vendors should use and maintain a WBS numbering scheme that applies to all project tasks and contract deliverables such that these numbers may be consistently used to support project management, deliverables acceptance activities, billing and payment processes.

Key deliverables and scheduling assumptions for delivery during the HIE project are listed in Table 4. Vendors should include completion of these deliverables as major work products and milestones for use in guiding the Project Work Plan and Cost Proposal. Details in the RFP narrative should be used to augment Vendor understanding of deliverable requirements.

Deliverables that are a finalized version of parts of the technical proposal have been noted with an asterisk in Table 4.

7.3.2 TIMELINE

Table 4 includes general parameters of the deliverables schedule. Vendors should make recommendations regarding a specific schedule for optimally conducting the project and delivering work products. This schedule should be explicitly stated in conjunction with the activities and tasks included in the Project Work Plan to be submitted with the Vendor Response.

Table 4. RI HIE System Contract Deliverables

***** An asterisk notes deliverables that are a finalized version of parts of the technical proposal.

DELIVERABLE TITLE AND REFERENCE #	DELIVERABLE DESCRIPTION AND SCHEDULE GUIDELINES
D1. Project Status Briefings	Project Status briefings will be performed with HEALTH/DOIT and HIE Project staff through onsite meetings in/near Providence, RI or by teleconference for the purpose of discussing the status of each deliverable including, but not limited to, any changes to the time, quantity, or quality of each deliverable. The Project Status briefing shall include accomplishments from the prior weeks and work to be accomplished for the next two weeks. Vendor must be prepared to discuss updates to the Project Work Plan/Schedule, Issues/Change/Action Items Log, and Risk Matrix. Briefings should be performed bi-weekly after the contract start date.
D2. Monthly Project Status Report	This deliverable must include a written description of activities, risks, costs, and project plan/schedule status for the prior month. Status reports shall follow the format prescribed by HEALTH/DOIT and shall clearly indicate the status of each deliverable, including but not limited to any changes to the time, quantity, or quality of each deliverable. An updated Project Schedule, Issues/Change/Action Items Log and Risk Matrix shall be included as attachments to the Status Report. Copies of other project management artifacts may be required. Monthly Project Status Reports and all attachments are due in electronic format by the tenth day of each month after the contract start date.
D3. Project Work Plan*	The draft Project Work Plan submitted with this response provided a preliminary schedule for the project. In the final Project Work Plan, Vendor will clearly delineate proposed activities and timelines for each phase of work in the HIE Project—The Project Work Plan shall clearly map to the SDLC (or alternative) phases and deliverables outlined in this RFP. When the draft Project Work Plan is formally accepted, the Vendor shall reestablish the scheduling baseline in the final Project Work Plan and project progress shall be monitored against it. Once the draft Project Work Plan is finalized and accepted by HEALTH, any updates that impact the planned end date of any SDLC phase for any specific HEALTH HIE System activity will require an approved change request. The Project Work Plan must include: tasks, milestones, and deliverables with associated Vendor and HEALTH/Project resources required and planned and actual dates and hours for each. Vendor resources referenced in the Project Work Plan shall clearly map to resources in the Staffing Plan. Tasks that require HEALTH or Project personnel participation shall be scheduled based on normal business hours and shall be

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	based upon a 35-hour week with the recognition that many of the resources will not be full time on this Project. Once the project schedule is baselined, the Project Work Plan shall always display planned vs. actual dates and percent completion for each task. The Project Work Plan shall be delivered in modifiable softcopy (MS Project 2002® [or newer version]) format. The final Project Work Plan shall be submitted according to the approved Project Schedule. Project Work Plan updates must be discussed in the bi-weekly Project Status briefings and shall be delivered in electronic format as an attachment to the monthly Project Status Report.
D4. Staffing Plan*	The proposed staffing plan submitted with the proposal provided a preliminary plan for the project. The Final Staffing Plan should build on the proposed plan submitted with Vendor Response and should clearly describe all Vendor-provided and local personnel resources required for the project including the number of local (non-Vendor) staff needed to maintain the proposed environment. The Staffing Plan should include type and number of Vendor staff needed (job titles/functions) along with necessary staff knowledge and skill sets required. At a minimum, the following functions should be considered: ▪ Project Manager ▪ Database Administrator ▪ Developer/Programmer ▪ Security Administrator ▪ Server Administrator ▪ Help Desk Staff ▪ Trainer The final Staffing Plan shall be submitted according to the approved Project Schedule. If staffing changes after review and acceptance of the final Staffing Plan, the plan must be updated.
D5. Risk Management Plan and Risk Matrix	The Risk Management Plan shall clearly describe how risks are to be identified, analyzed, mitigated, monitored, escalated and resolved during the project life cycle. A corresponding Risk Matrix tool shall be used to track and monitor specific risks that could potentially jeopardize the successful completion of the RI HIE System on time and within budget. An updated Risk Matrix shall be delivered in electronic format as an attachment to the monthly Project Status Report. The final Risk Management Plan and Risk Matrix shall be submitted according to the approved Project Schedule.

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D6. Change Management / Configuration Management Plan and Issues/Change/ Action Item Log	A Change Management Plan should provide an overall description of how issues and changes in this RI HIE project shall be handled. Included in the plan are the identification of issues and changes, tracking, and classification of changes and how changes shall be either incorporated into the project or deferred. An Issues/Change/Action Item Log for routine use in this process should be included. A Configuration Management (CM) Plan should also be included in the overall Change Management Plan. The CM Plan shall describe how software, version control, code promotion, and documentation versioning will be managed for all environments throughout the life of the contract. The plan should also define the configuration management structure, roles, and responsibilities to be used in executing these processes. The CM Plan shall also describe how COTS or GOTS software releases will be managed and coordinated with HIE customizations to the base product, if applicable. The plan shall clearly describe what items will be placed under configuration management control and how the Vendor proposes to manage those items. The plan must include how base product and released upgrades will be implemented without affecting customizations. Vendor may provide an automated process for reporting defects and for tracking the resolution of such defects, to include documentation and software programming defects. The final Change Management / Configuration Management Plan and Issues/Change/Action Item Log shall be submitted according to the approved Project Schedule. Updates to the Issues/Change/Action Item Log will be discussed in the bi-weekly Project Status briefings and should be provided in electronic format as an attachment to the monthly Project Status Report.
D7. Final Functional Requirements	Building on the use cases and requirements specified in this RFP and any additional detailed requirements recommended in the Vendor Response or and accepted by HEALTH, a final set of use cases and functional requirements must be submitted by the Vendor and approved by HEALTH prior to finalization of system design. Functional user requirements must be defined in terms of data, system performance, security, and maintainability requirements for the system. All requirements must be defined to a level of detail sufficient for systems design to proceed. All requirements must be measurable and testable and relate to HIE business needs. The final Functional Requirements shall be submitted according to the approved Project Schedule.

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D8. Technical Architecture Design*	The proposed Technical Architecture Design submitted with the proposal provided a preliminary design for the project. The final Technical Architecture Design should build on the proposed design and should be presented as a document articulating "best fit" physical and logical network design specifications. Final specifications for the following should be included: ▪ Use case assumptions ▪ Physical security requirements ▪ Network security requirements ▪ System security requirements ▪ System interfaces ▪ System Life Cycle assumptions The final Technical Architecture Design shall be submitted according to the approved Project Schedule.
D9. General System Interface Requirements	The Vendor shall address those system interfaces being developed in the HIE Release 1 and Release 1.X implementations. For each logical grouping of data to be exchanged, the General System Interface Requirements shall include, but not be limited to: • RI HIE user group that requires the dataset • Triggering event • Transaction mode • Transfer protocol to be used • Frequency for which the data transfer will occur • Volume of data to be transferred per frequency • Access rights required For each system interface, the Vendor shall clearly describe in both layman and technical terms any challenges associated with that system interface that must be resolved prior to developing detailed interface requirements. General System Interface Requirements shall be submitted according to the approved Project Schedule.
D10. Infrastructure Requirements*	The proposed Infrastructure Requirements submitted with the proposal provided a preliminary set of requirements for the project. The final Infrastructure Requirements should build on proposed infrastructure requirements submitted with the Vendor Response and should be presented as a document describing

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	hardware and software configurations for the HIE system according to stated growth and use assumptions. This deliverable may comprise a deployment diagram along with textural descriptions. The final Infrastructure Requirements shall be submitted according to the approved Project Schedule.
D11. Implementation Plan *	The proposed implementation plan submitted with the proposal provided a preliminary plan for the project. The final Implementation Plan should build on the proposed plan submitted with Vendor Response and should clearly define the Vendor's approach to the planning and execution of all HIE System implementation activities throughout the duration of the contract. Implementation activities refer to those activities that must be completed to rollout the live HIE System once it has been developed and fully tested. Vendors are encouraged to use a structured systems development framework as the basis for organizing the plan and logically linking it to the Project Work Plan. The Implementation Plan should include detailed descriptions of activities inherent in the Vendor's proposed approach to implementation. Cross-references to other existing planning deliverables are encouraged if such plans have been submitted. Implementation activities include, but are not limited to: ▪ Implementation methodology and tools. ▪ Processing environments including Vendor's commitment and plan with respect to ensuring that all environments are properly set up, maintained, protected and auditable. ▪ Project communication practices. Types of communications include bi-directional feedback on all project deliverables and interim communications in regard to project performance reporting such as project status and progress, meeting coordination, issues escalation, etc. ▪ Customization and development required. HEALTH expects the Vendor to use an incremental, prototyping development approach. ▪ Live Pilot testing, user acceptance practices and approach to transition the HIE to production including description of the expected impact to end-user normal operating capabilities during the transition phase. ▪ Approaches to facilitate HIE System adoption and use. ▪ Data management and conversion methodologies including Vendor strategy for merging person and clinical data across systems and a strategy for handling data conversion during an incremental statewide rollout. Specify any anticipated dual entry requirements, recommended duration, use of test scripts, automated tools, etc.) ▪ Change/configuration management methodology and approaches including how software, version

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	control, code promotion, and documentation versioning will be managed for all environments throughout the life of the contract. ▪ Quality control procedures ▪ Contingency plans in the event that key implementation activities are not completed in the planned timeframe. ▪ Disaster recovery and backup plan for the HIE System environment including testing protocols to be used prior to moving the system into production. Describe the proposed approach to day-to-day procedures for system backups and restore operations. The proposed solution shall assure recoverability of patient data as well as metadata, configuration and all other updatable data. ▪ Vendor turnaround times for maintenance, modifications, and help desk calls to be adhered to during the live pilots and during and after the introduction of any modifications, enhancements, and new releases. ▪ Security practices which take into account security requirements and Vendor responsibility for the maintenance of their products, services and processing environments to include continuous conformation to any new or changing Federal, DOIT, HEALTH, or other applicable security requirements. ▪ Approach to training local IT personnel and end-users. ▪ Impact of optional (or other) services recommended to assure successful implementation. Sample Service Level Agreements may be provided where applicable. Implementation Plan shall be submitted according to the approved Project Schedule. Review and updates to the Implementation Plan are expected periodically; Vendor shall deliver any updates to the Implementation Plan at an agreed upon interval after HEALTH acceptance of approved changes.
D12. Software Quality Assurance Plan	The Software Quality Assurance Plan (SQAP) is a comprehensive quality control tool to be used in conjunction with many of the other project deliverables defined in this Section of the RFP. Vendors are advised to include a brief summary of quality control practices in their Response. The Vendor may reference other documents in the body of the SQAP. The contents of each section of the plan must be specified either directly or by reference to another document. The SQAP should be informed by IEEE Standard 730-2002 and shall minimally include the following

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	sections: • Purpose • Reference Documents • Management • Documentation • Standards, Practices, Conventions, and Metrics • Reviews and Audits • Test • Problem Reporting and Corrective Action • Tools, Techniques, and Methodology • Code Control • Media Control • Supplier Control • Records Collection, Maintenance, and Retention • Training • Risk Management The Vendor Project Manager shall participate in status updates related to Quality Assurance Reviews in a manner agreed to by the Vendor and HEALTH. The Vendor shall respond in writing to any findings from these Quality Assurance Reviews and plan and execute corrective action(s) required by HEALTH. SQAP shall be submitted according to the approved Project Schedule. Review and updates to the SQAP are expected periodically when changes are made in response to audits or if corrective action is needed; Vendor shall deliver any updates to the Plan at an agreed upon interval after applicable changes.
D13. Security Plan*, Security Reports	The proposed Security Plan submitted with the proposal provided a preliminary plan for the project. The final Security Plan should build on the proposed plan submitted with the Vendor Response and should describe Vendor responsibility and approach for the maintenance of its products and services to include continuous conformation to any new or changing Federal, HEALTH/DOIT, or other applicable security requirements. Vendor will update the plan as required and review these updates with HEALTH. Vendor shall also perform or assist HEALTH with, at a minimum, an initial security assessment and annual security reviews and assessments; and submission of all reports and findings to HEALTH. Assuming the Vendor hosts the development environment, HEALTH may require the Vendor to engage an independent third party to perform the audits and report the findings to HEALTH, at no additional cost to HEALTH.

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	The final Security Plan and Security Reports shall be submitted according to the approved Project Schedule.
D14. Disaster Recovery (DR) Plan* and participation in DR tests	The proposed Disaster Recovery plan submitted with the proposal provided a preliminary plan for the project. The final Disaster Recovery (DR) Plan for the HIE System should build on the proposed plan submitted with Vendor Response. The Vendor, working with HEALTH/DOIT/Project IT staff will also be required to perform a Disaster Recovery Test before moving the HIE System into the production environment. This test will demonstrate a complete systems recovery simulating a catastrophic event where all the components of the system are lost. HEALTH and its designated stakeholders will be the sole judge as to the success of recovery operations. Vendor will make changes as required to meet HEALTH's acceptance of the recovery plan, at no cost to HEALTH. The Vendor shall include in its plan strategies to work through HEALTH IT and DOIT on additional disaster recovery tests that include recovery of hardware, software, and the environment during this contract and any subsequent contract periods. The Vendor shall perform annual Disaster Recovery Testing to test backup and recovery as defined in the final Disaster Recover Plan. The Vendor must submit a report of DR test results to HEALTH. The final Disaster Recovery (DR) Plan and DR Test Reports shall be submitted according to the approved Project Schedule. Vendor shall deliver an updated Disaster Recovery Plan based on any failures detected within ten (10) business days of the conclusion of each DR Test.
D15. Data Conversion Requirements	The Data Conversion Requirements deliverable should build on the approach submitted with Vendor Response and shall address data from legacy applications that are not in standard format where there is agreement that conversion is the best approach to data use. The general Data Conversion Requirements shall include a crosswalk of each legacy file/table to the converted HIE file/table(s) and a strategy for converting each of these legacy file/tables. For each legacy file/table to be converted, the Vendor shall clearly describe in both layman and technical terms any challenges associated with the data conversion at the file/table level that shall be resolved prior to developing detailed conversion requirements. The detailed Data Conversion Requirements shall include, but not be limited to: • The approved general Data Conversion functions for the HIE as defined in this RFP, • A crosswalk of each legacy data element to the converted HIE data element, • A crosswalk of each legacy data value to the converted HIE data value (i.e. LOINC, SNOMED codes), • Applicable data cleansing rules, • Process for de-duplication of patient records,

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	• Process for the incremental conversion of data and the coordination of HIE converted data with non-converted legacy data to be converted in subsequent stages of work, • Process and procedure for validating converted data, and • Acceptable conversion error rates as agreed to by HEALTH. For each legacy data element to be converted, the Vendor shall clearly describe in both layman and technical terms any challenges associated with the data conversion at the data element level and the resolution of those issues as agreed to by HEALTH. Data Conversion Requirements deliverable shall be submitted according to the approved Project Schedule. Iterative development of this deliverable is expected; Vendor shall deliver any updates to Data Conversion Requirements at an agreed upon interval after HEALTH review.
D16. Requirements Traceability Matrix	The Requirements Traceability Matrix shall contain every testable requirement, cross-referenced to the final detailed requirement set as mutually agreed upon. Vendor shall track each requirement through implementation. Vendor shall deliver an initial Requirements Traceability Matrix according to an agreed upon schedule and maintain updates throughout project implementation. Updates to the Matrix are a distinct deliverable and should be provided according to a mutually agreed upon schedule and specifically at the same time the Test Cases and Expected Results deliverables (see below) are due.
D17. Processing Environments	Vendor will establish up to four processing environments according to the agreed upon requirements as defined in the accepted Final Implementation Plan. (See PROC-1 for reference) Processing environments should be established according to the approved Project Schedule.
D18. Core Applications	Vendor shall deliver fully functioning versions of all core applications in their proposed solution. These applications will be used for demonstration and requirements gathering purposes including a detailed gap analysis. All elements documented in the contract as included in the core application/solution for the HIE System shall be installed at an appropriate interval after the Development Environment is available to allow applicable functions to be viewed. Vendor shall deliver Core Applications according to an agreed upon schedule.
D19. Detailed Gap Analysis	The Vendor shall perform a detailed review of those portions of the Vendor's proposed solution included in implementation of HIE Release 1 / 1.X and provide a point-by-point comparison of the Vendor's proposed

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	solution with the final Requirements set accepted by HEALTH. These sessions will allow additional HEALTH and stakeholder personnel, not involved in the procurement, to verify where modification or customization may be needed. Detailed review sessions will be held on-site at HEALTH (or a mutually agreed upon location) and are to be announced at least two weeks prior to the session(s) so that all key stakeholders have an opportunity attend. The Vendor shall demonstrate HEALTH-purchased product(s) in detail and clearly show and describe how they meet each of the required HIE System functions. For planning purposes, HEALTH anticipates several sessions may be necessary for review but this will vary based on the number of functions covered in Vendor product offerings. Any changes in scope identified during these sessions shall follow the approved change management process. This activity shall result in a Detailed Gap Analysis document listing each of the HIE System Requirements and whether HEALTH finds that the Vendor's proposed solution is acceptable as is and where customization is required. The Vendor shall indicate each function that shall be delivered, as agreed to by HEALTH. Detailed customization requirements shall be documented and tracked according to practices set forth in the approved Change/Configuration Management Plan. A Detailed Gap Analysis document shall be submitted according to the approved Project Schedule.
D20. Training Plan	A Training Plan should be developed to support Project decisions on training approach and resource management. This Vendor-developed plan should include rates provided in the original Cost Proposal or otherwise the negotiated rates, whichever applies. Components of the Plan should address the following training needs: ▪ Technical training – Plan will address training to HEALTH/DOIT and other stakeholder technical staff that covers at a minimum: ◦ System administration ◦ Security administration ◦ Knowledge transfer of customized code (code walk) in conjunction with deliverables ◦ System setup and configuration ▪ End-User training – At a minimum, Plan will include "train the trainer" sessions starting with initial pilot implementation as well as updated training as approved customized features are added. Vendor plan and

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	recommendations will include but are not limited to: ◦ Training recommendations based on incremental rollout ◦ Training schedule ◦ Maximum number to attend each training session ◦ Training options that include, in addition to "train the trainer", options for Vendor-supplied trainer/s to work with RI HIE Project-trained trainers for Pilot sites ▪ Other training needs as identified Training Plan shall be submitted according to the approved Project Schedule.
D21. Test Plan	The Vendor shall deliver draft and final Test Plan documents which clearly describe the Vendor's strategy for performing Unit Testing, System/Integration Testing, Regression Testing, and User Acceptance Testing. The Test Plan shall also address how accessibility (Section 508 and/or W3C), data conversion software, system interfaces, and electronic transactions will be tested. The Vendor shall also identify in the Test Plan all automation testing tools the Vendor plans to employ, including the specific release/version number of the product. If the Vendor plans to employ the use of automated test tools, then all test data files shall be in electronic format suitable for input to other testing tools. A Requirements (Acceptance) Traceability Matrix shall be included in or referenced as part of the plan. Test Plans shall be submitted according to the approved Project Schedule.
D22. Executed Test Cases Results Report	In preparation for each HIE System implementation phase, for every test case, actual test results shall be documented including any necessary re-testing. The Vendor shall deliver a report of Executed Test Cases and Actual Results on time per the approved Project Schedule.
D23. Detailed Design Specifications	For each HIE System implementation phase, the Vendor must deliver Detailed Design Specifications draft and final documents. The Detailed Design Specifications shall document the approved technical specifications for the HIE System, based on prototype feedback, including a physical data model and metadata for HIE. Metadata shall include, but not be limited to, documentation about the data elements (e.g., name, description, size, data type, business rules, validation rules, valid values, etc.) and information about data structures (e.g., fields, columns, keys, how it is associated, ownership, etc.) as required. Detailed Design Specifications shall be submitted according to the approved Project Schedule.

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D24. HIE System Prototypes	For HIE System development and approved customizations necessary to meet essential HIE System functions, the Vendor shall employ an iterative, prototyping technique to validate requirements and obtain design approval. Prototypes may be non-functional in early stages of development but become functional as development progresses. For each HIE System implementation phase that includes approved customizations, the Vendor shall deliver a minimum of two (2) prototype iterations for HEALTH/stakeholder review, comment and approval. The Vendor may propose additional Prototype iterations as necessary. HEALTH may require additional Prototype iterations until the Prototypes satisfy agreed upon HIE System functions. Prototype sessions are to be held on–site in/around Providence, Rhode Island and are to be scheduled two weeks prior to the session(s) so that all key stakeholders have an opportunity to attend. Assuming the Vendor provides the development environment, the Vendor shall provide necessary connectivity for the prototype sessions at no cost to HEALTH. Prototypes shall be developed according to the approved Project Schedule.
D25. System Documentation	System Documentation in the following categories should be included as deliverable submissions in editable soft copy. Additional documentation may be requested as mutually agreed upon: ▪ System Documentation including specifications and technical literature sufficient to allow a third party to maintain and operate the system, continue to develop additional functionality and upgrades to the system and provide new and ongoing user training. It must make good use of graphics and screen shots to clearly communicate functions and the user environment. ▪ Final list of hardware and software with cost estimates. ▪ Description of the type of documentation support provided for each release upgrade. ▪ Final Technical Documentation--must include: ° System administration ° Security administration ° Knowledge transfer of customized code (code walk) in conjunction with deliverables ° System setup and configuration ▪ Final End-User documentation--must include: ° User Reference Guide ° Training Materials (Training Guide, Training scripts, Training Evaluation Forms and Training Report)

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	System Documentation shall be submitted according to the approved Project Schedule. Vendor shall deliver any updates to System Documentation at an agreed upon interval after HEALTH acceptance of approved system changes.
D26. Maintenance and Operations Staffing Plan	Starting with the implementation of the first pilot sites, and for the duration of the contract, the Vendor shall be required to perform system maintenance and operations, modifications, and any Help Desk functions for Vendor application support, upgrades, and release support for the proposed HIE System. The Staffing Plan for these activities will detail the organizational structure and resource requirements of the Vendor and other participating stakeholders with roles and responsibilities defined for Tier 1, 2 and 3 support activities. Note that a final Staffing Plan for all work under this contract is required and that the Maintenance and Operations Staffing Plan deliverable may be included in the general Staffing Plan. The Vendor shall deliver a Maintenance and Operations Staffing Plan as part of the final Staffing Plan per the approved Project Schedule.
D27. Pilot Rollout	HEALTH will choose a maximum of five (5) distinct sites to participate in a Live Pilot test of Release 1 and Release 1.X implementations. The duration of the pilot tests of the required HIE System functions shall be 30-90 days with the sites phased in to eliminate Pilot site exposure to system problems. The initial pilot for HIE Release 1 must ensure the success of five user (provider) sites and three Labs before rolling out to other user and laboratory sites. During the pilot test period, the Vendor Help Desk shall be fully operational according to Vendor agreements. Any required maintenance identified as part of the pilot shall be addressed in a formal plan approved by HEALTH for implementing critical changes as needed and for implementing non-critical changes in future releases. Pilot Rollouts shall be performed according to the approved Project Schedule.
D28. Maintenance and Operations Support and User Help Desk Services	Commencing with implementation of the first pilot site, and for the duration of the contract, the Vendor is required to perform system maintenance and operations, modifications, and any Help Desk functions for Vendor application support, upgrades, and release support for the proposed RI HIE System Release 1/1.X and as agreed to in any subsequent SLAs. Performance of these services shall be documented in the monthly Project Status Report and invoiced according to contract provisions.
D29. Pilot Site Rollout	For each HIE implementation phase, the Vendor shall deliver a Business Readiness Plan deliverable for HEALTH and each entity in each pilot group prior to production rollout for each step in the deployment.

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Business Readiness Plans	These Business Readiness Plans must include at minimum: • Training status and an assessment of system understanding. • Status of local system administrator readiness. • Status of data conversion and data correction. • Status of HIE System security rollout for all users of the system. • Issues for each deployment group. • Risks for each deployment group. • Overall assessment for Business Readiness for production rollout. Pilot Site Rollout Business Readiness Plans shall be submitted according to the approved Project Schedule.
D30. Transition Plan	This formal plan documents the steps that would need to be followed throughout the life of the contract and in the event that HEALTH decides to terminate the contract or the contract end date is reached. The Vendor team shall execute the Transition Plan throughout the life of this contract to ensure a smooth knowledge transfer and system turnover to HEALTH. HEALTH or the Vendor can recommend changes to the plan. Any changes to the plan must be approved by HEALTH. Transition Plan shall be submitted according to the approved Project Schedule. Review and updates to the Transition Plan may occur periodically; an updated Transition Plan shall be provided by the Vendor for HEALTH review, modification and approval on an agreed upon schedule.
D31. Lessons Learned	Lessons Learned deliverable shall include but not be limited to, a progressive summary of causes of variances and the reasoning behind corrective actions chosen. Lessons Learned shall be submitted at least every six months during the contract term or alternatively, within ten (10) business days of the completion of each major (SDLC or alternative) phase of work (i.e., ten (10) business days after the approved Project Schedule shows the phase as 100% complete.)
D32. Production Software	Following each HIE implementation phase, the Vendor shall deliver a customized and fully tested and accepted production-ready HIE System, including modifications resulting from the pilot and production data conversion. Production Software shall be submitted according to the approved Project Schedule.

SECTION 8. OVERVIEW OF VENDOR COMPLETION FORMS

HEALTH requires that Vendors include each of the following standardized forms in the formal Response package. Form templates are found in Appendix D. Continuation pages and other relevant attachments to the Forms are permitted. It should be noted that Vendor Responses must include two distinct, yet related proposals:

1. Technical Proposal: Includes Vendor Forms F-1 – F7 and F-9 plus other attachments.
2. Cost Proposal: Includes Vendor Form F-8, sealed and labeled under separate cover.

A Vendor Response Checklist is included on the first page of Appendix D.

■ STATEMENT OF UNDERSTANDING (FORM F-1)

This form requests that the Vendor state in concise terms its understanding of the activities to be performed and the role the Vendor is expected to perform, as described in the RFP. The purpose of this form is to ascertain the degree to which each responding Vendor understands the problem and how their proposed technical solution and project approach will address it.

■ ORGANIZATIONAL DESCRIPTION (FORM F-2)

This form requests detailed information about the responding organization. Such information may include headquarters and branch office locations, parent and subsidiary organizations (and the responder's relationship), the number of years the organization has been in the business of providing the desired products and services, and other information felt to be pertinent to the procurement.

■ ORGANIZATION CHART (FORM F-3)

This form requests an organization chart showing the structure of the responding organization and specific areas of responsibility for all staff associated with the project.

■ OFFEROR SUBCONTRACTORS (FORM F-4)

This form requires that the Prime Vendor provide the full name and address of any organization with which it will subcontract for any services provided in the project and the mechanisms for assuring its effective and efficient operations. Further, responders will be asked to provide evidence of a potential subcontractor's willingness to participate in the project and enter into subcontractual arrangements with the Prime Vendor.

■ QUALIFICATIONS AND EXPERIENCE (FORM F-5)

This form includes details of prior experience, reference implementations/pilots, qualified staff, etc. to describe Vendor eligibility to provide HIE implementation and related services in four categories of qualifications for COTS/GOTS implementation, integration services, training, support and maintenance. Vendors should address the requirement that the proposed HIE product should have been successfully installed and is currently functioning in two different locations.

■ OVERALL SCOPE OF WORK NARRATIVE (FORM F-6)

This form requires the Vendor to provide a concise Executive Summary and a detailed description of how it proposes to accomplish the scope of work in regard to the HIE project objectives. Attachments to this form include the specific Vendor Response to address general and system requirements described in Section 7 of the RFP (see HIE Requirements Table) and supporting documents as listed.

Continued, next page

- **HIPAA AGREEMENT (FORM F-7)**

This form includes Business Associate Agreement language as required under HIPAA. Two signatures by accountable individuals from the Vendor organization are required.

- **COST (FINANCIAL) PROPOSAL (FORM F-8)**

This form delineates the requirements for the Cost Proposal section of the bid. Vendors are directed to submit the Cost Proposal sealed and under separate cover from the Technical Proposal.

- **OPTIONAL SERVICES (FORM F-9)**

This form requests that the Vendor describe in detail its proposed approach and capability to provide any of the optional services listed in this RFP. The State reserves the right to procure any combination of these optional services as part of this contract award as needs arise and funding permits. If an option is exercised, the State reserves the right to request additional details.

SECTION 9: APPENDICES

APPENDIX A. INSTRUCTIONS TO COMPLETE HIE REQUIREMENTS TABLE

The following instructions apply to the HIE Requirements Table located in Appendix B which should be completed and included in the Response. For each Requirement in the table, the Vendor should complete the blue shaded columns. Two types of information are requested:

■ Requirement Implementation Timing

Vendors should complete this column by assigning an implementation timing priority to each requirement to produce the most OPTIMAL implementation schedule and budget for HEALTH that is driven by a specific Vendor offering of HIE functionality and service capabilities. This rational approach to implementation prioritization is intended to maximize Vendor performance and the delivery of the requested HIE functionality while also promoting the efficient use of limited HEALTH funding and staff resources. Vendor timing recommendations should leverage existing product and service capabilities to the greatest extent possible in the initial years of the project. These recommendations should make clear what package of functionality and services the Vendor can reliably deliver according to the most cost-effective schedule. Further, funding constraints require that HEALTH be able to clearly define the project in 12-month increments.

Implementation priorities should be designated by assigning each requirement to a 12-month period according to the following time designations. Enter a Year number into the "Requirement Implementation Priority" column according to the year in which the requirement can be met. Vendors should note in the Table where partial completion of a requirement is expected and provide an estimate of percentage completion of that requirement by the end of the designated year.

IMPLEMENTATION TIMING

- Year **1** = 0 - 12 months
- Year **2** = 13 – 24 months
- Year **3** = 25 – 36 months
- Year **4** = 37 – 48 months
- Year **N** = > 48 months (specify timing by year)

■ Degree to Which Proposed Solution Meets the Requirement

Vendor should specify, by placing the appropriate letter in the Capabilities column, the degree to which the proposed HIE solution meets the requirement. Place any narrative responses in a separate row using the Requirement Reference Number as a cross-reference identifier. Space for comments and narrative details is provided at the end of the Table. Additional rows should be added as needed. The response codes to be used are as follows:

(S) **Requirement Fully Satisfied - No Customization Needed**. All Functionality is included within the applicable base product requiring no customization. If the Vendor indicates a requirement is "Fully Satisfied", at any point during the evaluation or during the contract period, HEALTH reserves the right to determine that the Vendor's interpretation of "Fully Satisfied" did not meet HEALTH's requirement and is incorrect. Any such customizations arising under these circumstances shall be performed by the Vendor at no additional cost to the State.

(P) **Requirement Partially Met – Customization Required**. Part of the required functionality is not included within the base product; however the base product CAN BE customized to meet the requirement. If the Vendor indicates a requirement is

"Partially met within the base product, but CAN be customized", provide a short narrative explaining what the base product lacks to meet this requirement. Clearly and specifically cross-reference such narratives to HEALTH's requirement.

For each system function, provide a fixed price customization cost in the Cost Proposal of the Vendor's response. Within this fixed price, clearly delineate cost by detailed requirements, design, actual customization (programming), testing, updates to documentation, and updates to training materials. Include in this firm fixed per customization price the cost of the Vendor further defining the functionality and the requisite customization, or any additional customization that is required through this process.

If the Vendor indicates a requirement is "Partially met within base product, but CAN be customized", at any point during the evaluation or during the contract period, the State reserves the right to determine that the customization was not required. Any such customizations cost will be reimbursed to the State within thirty (30) calendar days or deducted from the Vendors next monthly bill, which ever is sooner.

(D) Requirement not included within base product, but can be Developed in the proposed system. The required functionality is NOT included within the base product; however the Vendor is willing and able to build the function.

If the Vendor indicates a requirement is "Not Included within base product, but CAN be developed in the proposed solution", provide a short narrative explaining the proposed development solution for the components to be built. Explain the integration of the new component in the base product. Clearly and specifically cross-reference such narratives to requirements. Place any narratives at the end of the table.

For each system function, provide a fixed price development cost in the Cost Proposal of the Vendor's response. Within this fixed price, clearly delineate cost by detailed requirements, design, actual development (programming), testing, updates to documentation, and updates to training materials. Include in this firm fixed price the cost of the Vendor further defining the functionality and the requisite development, or any additional customization that is required through this process.

If the Vendor indicates a requirement is "Not Included within base product, but CAN be developed in the proposed solution", at any point during the evaluation or during the contract period, the State reserves the right to determine that the development was not required. Any such development cost will be reimbursed to the State within thirty (30) calendar days or deducted from the Vendors next monthly bill, which ever is sooner.

(A) Proposing an Alternative approach to what was requested. All or part of the required functionality is not included within the base product, BUT the base product has a suggested alternative workaround solution that can be used within the base product.

If the Vendor indicates it is "Proposing an alternative approach to what was requested", provide a short narrative explaining the proposed alternative solution approach explaining the Vendor's rationale for how the Vendor's approach varies from the requirements but achieves, in whole or in part, the result that the RI HIE Project requires. Explain the benefits and the shortcomings of the alternative solution approach based on the functions requested. Clearly and specifically cross-reference such narratives to the requirements. Place any narratives after the end of the table. Clearly specify in detail which items in the proposed alternate approach are part of the base product and which items require customization.

For each alternative approach requested, provide a fixed price cost if any customizations are needed for the alternative approach in the Cost Proposal of the Vendor's response. Within this fixed price, clearly delineate cost by detailed requirements, design, actual development (programming), testing, updates to documentation, and updates to training materials. Include in this firm fixed price the cost of the Vendor further defining the functionality and the requisite development, or any additional customization that is required through this process.

(N) **No solution proposed and the Reason Why**. If the Vendor indicates "No solution proposed and the Reason Why", provide a short narrative explaining what the base product lacks to meet this function and why it cannot be achieved through a base product customization or development. Include in the explanation technical as opposed to business obstacles which prohibit the development. Clearly and specifically cross-reference such narratives to the requirements. Place any narratives after the end of the table.

(N/A) **Not Applicable**. N/A indicates that the requirement is to specify an approach or describe a component to be used in the proposed solution and therefore the categories above may not directly apply. If the vendor indicates N/A, the response requires elaboration in narrative form.

Appendix B. HIE Requirements Table (Mandatory Inclusion in Response)

NOTE: VENDOR RESPONSES MUST INCLUDE COMPLETION OF BLUE SHADED COLUMNS—PROVIDE NARRATIVE RESPONSES IN THE SECTION PROVIDED AFTER THE END OF THE TABLE.

Line #	Requirement Type	Requirement Reference Number Cross-Reference ID for Narrative Responses	REQUIREMENT DESCRIPTION Requirements listed in this Table are intended for Vendor consideration in their SOW Response. Vendors should use this Table to score the degree to which the Proposed System functionality and supporting Vendor capabilities meet each requirement. Any narrative descriptions should be compiled in an attachment and cross-referenced to this Table by Requirement Reference Number.	Requirement Implementation Timing (Year) Year 1 = 0-12m Year 2 = 13-24m Year 3 = 25-36m Year 4 = 37-48m Year N = > 48m	Vendor Capability* (S)-Satisfied (P) Partially met (D) Can develop (A) Alternative (N) No solution (N/A) Not appl.
1	Supplementary: Architecture	ARCH-1	The architecture proposal must address the specific technologies and applicable capabilities and characteristics associated with the following infrastructure components and any others that are central to the proposed solution. 1. Enterprise Application Integration (EAI) or Enterprise Service Bus (ESB) components 2. Workflow or Business Process Management (BPM) components 3. Security components 4. Application baseline components (RDBMS, Web and Application Servers, Operating Systems, Web browsers) 5. Administrative, Operational and Monitoring components Describe the role of each component, its relationship to other components, functional capabilities supported by the component, open standards supported by the component and any proprietary aspects of the component. Describe the benefits of the particular technology choices relative to the genre to which it belongs.		
2	Supplementary: Architecture	ARCH-2	A Client/Server n-tier Thin Client Architecture is preferred. Bidders should describe how their solution architecture separates presentation, business logic and database components. Or, if another approach is used, describe the advantages of that approach over n-tier.		
3	Supplementary: Architecture	ARCH-3	End-user and administrator access to solution functionality via a web browser interface is preferred to minimize deployment, support and maintenance costs. If another approach is used, describe the advantages over web-based architecture.		
4	Supplementary: Architecture	ARCH-4	Provide an architectural approach that will be used to manage, monitor and maintain solution components to assure conformance to service level requirements.		
5	Supplementary: Architecture	ARCH-5	A widely adopted open framework for business logic and presentation components is preferred. Proposals should describe the implementation framework for their proposed solution and the advantages of that approach.		
6	Supplementary: Architecture	ARCH-6	The Rhode Island HIE Project Technical Solutions Group envisions a standards-based data model with the data organized by data type that can be partitioned for either centralized or decentralized deployment. Responses should describe in detail the proposed solution data model. Please describe the advantages of the proposed approach relative to existing institutional EHR/clinical information systems and other RHIO approaches.		

Line #	Requirement Type	Requirement Reference Number Cross-Reference ID for Narrative Responses	REQUIREMENT DESCRIPTION Requirements listed in this Table are intended for Vendor consideration in their SOW Response. Vendors should use this Table to score the degree to which the Proposed System functionality and supporting Vendor capabilities meet each requirement. Any narrative descriptions should be compiled in an attachment and cross-referenced to this Table by Requirement Reference Number.	Requirement Implementation Timing (Year) Year 1 = 0-12m Year 2 = 13-24m Year 3 = 25-36m Year 4 = 37-48m Year N = > 48m	Vendor Capability* (S)-Satisfied (P) Partially met (D) Can develop (A) Alternative (N) No solution (N/A) Not appl.
7	Supplementary: Architecture	ARCH-7	Provide an architectural approach to implement interfaces with data sharing partners. Include the methodology for providing integration and messaging services between systems internal and external to the HIE system. Describe connectivity, transformation, routing workflow and other integration components.		
8	Supplementary: Architecture	ARCH-8	Provide the security architecture. Address authentication, authorization, administration, auditing, infrastructure access control, network security alerting and any other subsystems at risk. Address the mechanisms by which the native security functions of solution components (databases, app servers, web servers, and integration components) are integrated within the solution to simplify administration and auditing.		
9	Supplementary: Architecture	ARCH-9	Provide architecture to support the exchange of all types of medical records information. See Data Prioritization Plan.		
10	Supplementary: Architecture	ARCH-10	Provide error / fault / event detection logging reporting and notification.		
11	Supplementary: Architecture	ARCH-11	Provide data mapping and transformation. Address the availability of predeveloped mapping and transformation modules and the tools and approach used for customizing and developing mapping and transformations.		
12	Supplementary: Architecture	ARCH-12	Provide the mechanisms used for storage and maintenance of schemas, maps and other metadata. Address deployment management and version control.		
13	Supplementary: Architecture	ARCH-13	Provide disaster recovery.		
14	Supplementary: Architecture	ARCH-14	Provide backup and recovery to assure recoverability of patient data as well as metadata, configuration and all other updatable data.		
15	Supplementary: Architecture	ARCH-15	Provide a mechanism to support measurement and reporting of performance and service level metrics including response time, throughput, reliability and usability.		
16	Supplementary: Architecture	ARCH-16	Provide on line help capabilities for end user, developer and administrative components.		
17	Supplementary: Architecture	ARCH-17	Provide an archiving mechanism to meet records retention regulations and other related requirements.		

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18	Technical: Infrastructure	INF-1	Vendors should consider leveraging existing infrastructure in RI for purposes of this project. Vendors may propose using state infrastructure or centralized components or propose an outsourced approach for HIE System Release 1/1.X. Whatever approach is proposed should include a discussion of the process and barriers in moving and operating the centralized solution components in a production environment in another hosting facility after Release 1 or any point at which a final hosting decision is made. All associated costs must be reflected in the Cost Proposal. The State of Rhode Island currently has 4 SAN controllers (3 EMC Clarions (1 @ DOA, 1@ DEM, 1@ DOC and 1EMC Symetric in the State Data Center). These systems are not currently integrated – i.e., replicating data between SANs, however the DOA and DOC Clarions are expected to have replication and failover capabilities at the time of contract award. The State also has the ability to run Linux on the current Mainframe at little additional cost. Six processors; could have virtual Linux machines. The state has a SONET between the Johnston Data Center, Capital Center, Pastore Complex and the Verizon CO. Therefore, there is significant bandwidth availability for DR and failover within the environment; however minor upgrades to switching may be required to leverage this infrastructure. The state has a more limited bandwidth connection out to the internet, through OSHEAN. Currently, data sharing partners have existing connectivity utilizing this third party carrier, OSHEAN. (See App. C)		
19	Technical: Infrastructure	INF-2	Provide carrying capacity (Network bandwidth, storage, processing capacity) of the infrastructure as required by planned/projected demand for the duration of Release 1 / 1.X production. Costs in capacity increases must relate incrementally and proportionally with capacity; Refer to the following projected Release 1 load components: Planning Scenarios: 1. 50 simultaneous, active users 2. 200 simultaneous, active users 3. 500 simultaneous, active users Workload Assumptions: a. Three initial clinical lab data sharing partners (DSPs) b. Baseline patients: 1.5 million patient records with 60% overlapping patient IDs among DSPs (patient identities must be matched, records merged and de-duplicated for presentation via the HIE) c. Baseline data: 5 million lab tests (assumes 2 years of tests will eventually be made available in the production HIE) d. Rate of information growth: i) 500 new patients enrolled per month (across all DSPs) ii) 200,000 tests/encounters/records per month (across all DSPs) e. Rate of new DSPs: Add 4 DSPs (for each 12 months of operation after first pilot period)		

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20	Technical: Infrastructure	INF-3	Vendors are required to work directly with Data Sharing Partners on connectivity solutions that are based on existing infrastructure as a method to connect statewide participants to the system. The State reserves the right to request that Vendors supply connectivity options, if required.		
21	Technical: Infrastructure	INF-4	Provide an approach to maximizing key service level and system performance attributes including scalability, availability and reliability.		
22	Technical: Infrastructure	INF-5	Provide an approach to measurement and reporting of performance and service level metrics including response time, throughput, reliability and usability.		
23	Technical: Infrastructure	INF-6	Provide an approach to optimizing key life cycle cost attributes including supportability, extensibility, adaptability, maintainability.		
24	Technical: Infrastructure	INF-7	Provide an approach to data mapping and transformation. Address the availability of pre-developed mapping and transformation modules and the tools and approach used for customizing and developing mapping and transformations.		
25	Technical: Infrastructure	INF-8	Provide a mechanisms used for the storage and maintenance of schemas, maps and other metadata. Address deployment management and version control.		
26	Technical: Infrastructure	INF-9	Provide on-line help capabilities for end-user, developer and administrative components.		
27	Technical: Infrastructure	INF-10	Provide an approach to archiving to meet records retention regulations and other related requirements.		
28	Technical: Infrastructure	INF-11	Provide an approach to phased implementation of different types of data sources according to the RI HIE Data Prioritization Plan.		
29	Technical: Infrastructure	INF-12	To provide the most cost effective solution, considering technology acquisition costs as well as operating costs, proposals should consider existing technology investment and capacity (See App. C)		
30	Technical: Infrastructure	INF-13	Specify all third party infrastructure components (commercial and open source) required to support functional, performance and service level requirements.		
31	Technical: Infrastructure	INF-14	Specify all components including any third party software and hardware required to utilize the HIE, including web browsers, network hardware and software, client computer requirements, middleware such as queuing or web service clients.		

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32	Technical: Infrastructure	INF-15	Itemize and describe all custom developed software subsystems or major components including functions, operating environments and dependencies.		
33	Technical: Infrastructure	INF-16	Provide infrastructure for Release 1 / 1.X DSPs and Data end-users. (See initial State and DSP technology profiles in Appendix C).		
34	Technical: Infrastructure	INF-17	Provide Proof of Concept (POC) for future releases by identifying, implementing and demonstrating infrastructure capabilities in Release 1 / 1.X as required for future release functionality.		
35	Technical: Infrastructure	INF-18	Provide for integration with existing DSP systems with minimal impact by providing adapters for HL7 variations and interfacing strategies already supported by those systems whenever applicable. (See HL7 Spec.)		
36	Technical: Standards	STND-1	Vendor solution must meet/conform to applicable data and communication standards to support interoperable health information exchange. Describe the proposed solution's approach to the use of standards. Enumerate key standards adopted by the solution. Vendor Response SHALL certify that the proposed solution is compliant with such standards, or where the proposed product/solution is not compliant, identify where the solution is not compliant and what the plan is to make the product/solution compliant.		
37	Technical: Standards	STND-2	Recognize open technology standards. Bidder should specifically designate standards supported as well as solution components that are not open standards compliant (are based on proprietary technology)		
38	Technical: Standards	STND-3	Incorporate current and emerging Health Data Interchange Standards including HL7, HIPAA, ICD9, CMS/MITA, CDC/PHIN, LOINC, SNOMED, FEA and Federal Consolidated Health Informatics (CHI) initiative.		
39	Technical: Standards	STND-4	Demonstrate an ongoing awareness of various initiatives in health data standardization and interchange and application in the proposed solution.		
40	Technical: Standards	STND-5	Utilize Vendor independent (Open Source) software components. Where Open Source software components are specified describe the mechanisms and level of support available.		
41	Technical: Security	SEC-1	Address HIE security requirements by HIE system function, individual user, and system administrators. Also address HIE user identification, authentication/ access control, system and data integrity, control against unauthorized activity, privacy, confidentiality, administration, audit trails (See SEC-3), and incident response and reporting.		

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42	Technical: Security	SEC-2	HIE application security will provide for an audit trail of the following activities: ▪ Access attempts to the system and system functions whether successful or not. At a minimum, the logging function will capture the user information, the date/time of the activity for the successful or failed login, each system function accessed and when logged out. ▪ Audit trails should be queriable by patient ID, user ID and other variables as applicable. Vendor response SHALL indicate the ability to conform to these requirements or propose an alternate solution.		
43	Technical: Security	SEC-3	Provide security tools for detecting, preventing, and logging unauthorized data access and other security breaches and providing alarms to HIE Security Officers		
44	Functional Requirement: Audit & Retention	AUD-1	Provide logging for audit trails and retention management to support the long statute of limitations for providers. Shared data archive policies and related data sharing capabilities must support providers' need to access historical data in the event a data sharing partner no longer participates in the HIT System or ceases business operations.		
45	Functional Requirement: Data Access	ACC-1	Control access to data based on HIPAA Privacy and Security Requirements. Responses should be specific about how HIPAA requirements will be met.		
46	Functional Requirement: Data Access	ACC-2	Provide the capability for a data user such as a healthcare provider to submit a request for specific information on a specific patient and, subject to privacy and security controls, have that information be collected from all known sources, merged, standardized or normalized if required, and returned to the requester in an integrated view.		
47	Functional Requirement: Data Access	ACC-3	Provide a delegated / decentralized security administration model whereby HIT Security Officer may certify DSPs and Data Consumer organizations and delegate the authority and ability to manage access rights to Data Users to Security Administrators in Data User organizations		
48	Functional Requirement: Data Access	ACC-4	Authorized providers and their designees (staff, nurses) MUST be able to access their patients' data in the HIE System independent of the care delivery process, e.g., before an office visit, during a visit, between visits, on a routine basis to update local records, etc.		
49	Functional Requirement: Consent	CON-1	Support patient active consent (a.k.a. "opt-in") as the primary mechanism for control of authorization, disclosure and dissemination of patient information. Include assumption that data movement and management among contracted Business Associate entities can occur without active consent; however, any disclosure of data must be subject to active consent.		

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50	Functional Requirement: Consent	CON-2	Allow providers to "document" patient consent in a legally legitimate way.		
51	Functional Requirement: Consent	CON-3	The process of gaining patient consent must be independent of the care delivery process yet is affected by issues around power of attorney, the rights of minors and other issues of consent proxies. Responses should describe how the solution addresses this important and difficult area.		
52	Functional Requirement: Consent	CON-4	Provide the option to "block" disclosure of specific types of health data based on patient request (for example mental health records, HIV information). Proposals should describe the mechanisms by which the Vendor's solution provides for selective blocking of disclosure without creating unintentional "contextual" disclosure in the process.		
53	Technical: Processing Environments	PROC-1	Working with HEALTH/DOIT/HIE Project IT staff, the Vendor SHALL establish and maintain up to four (4) processing environments for the RI HIE System. These processing environments are: a. Production – Versions of released, fully tested and user accepted code. Requires stringent change management and monitoring controls and processes. b. Testing/QA – Mirrors the production environment with hardware and software requirements. Can serve as backup to the production environment if required. Used as final testing of upgrades/updates and provides the environment for user acceptance testing. c. Development - Vendor supplied code will be accepted and tested in this environment. This environment will be the initial staging area for testing upgrade/ update components (scripts, data conversions, etc). Activities in this environment may contain an accumulation of incremental updates presented as a rollup package to be accepted in the Development environment. After final acceptance, this environment will serve as the on-going HIE development environment. This environment will replicate the servers, operating system and services provided. A virtual sever environment is an acceptable option to control cost. d. Training/QA – This environment will support Project staff and end-user training and may use sample data if advised. Training/QA should mirror the Development environment plus include the same functionality of security infrastructure components as in Production and Testing/QA to provide trainees with a user experience that closely approximates production.		
54	Technical: Processing Environments	PROC-2	Describe deployment facility options to support HIE Release 1 / 1.X pilots, which may include the state data center, Vendor provided options, or commercial facilities.		
55	Technical: Processing Environments	PROC-3	Vendor SHALL agree that HEALTH will determine the final hosting environments with the exception of Vendor supplied development site/s.		

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56	Technical: Processing Environments	PROC-4	Vendor SHALL agree that all hardware and software required to support the system will be procured by Vendor with an option for HEALTH procurement through state purchasing contracts.		
57	Functional Requirement: User experience	USER-1	Incorporate a user interface user experience look and feel, taxonomy and workflow that is consistent with EHR interfaces currently in common use.		
58	Functional Requirement: User experience	USER-2	Support a range of provider requirements for online data use and retention by end-user EHR systems. Providers that have a need to save data from the HIE System prefer to have the option to save it directly into their local EHRs to allow direct local access.		
59	Functional Requirement: Trading Partner	PTN-1	Provide an approach for certifying and managing trading partner agreements.		
60	Lab Data Exchange Business Requirement	CDE-1	Implement data sharing for Laboratory Data using common HIE infrastructure.		
61	Lab Data Exchange Business Requirement	CDE-2	Implement data sharing for Medication Data using common HIE infrastructure.		
62	Lab Data Exchange Functional Requirement	CDE-3	Provide for collection and display of Reference Ranges and other information needed to support proper interpretation of laboratory results. Proposal should demonstrate Vendor's experience and knowledge relating to this requirement.		
63	Lab Data Exchange Functional Requirement	CDE-4	Provide for notation on abnormal values and critical changes in lab values.		

Line #	Requirement Type	Requirement Reference Number Cross-Reference ID for Narrative Responses	REQUIREMENT DESCRIPTION Requirements listed in this Table are intended for Vendor consideration in their SOW Response. Vendors should use this Table to score the degree to which the Proposed System functionality and supporting Vendor capabilities meet each requirement. Any narrative descriptions should be compiled in an attachment and cross-referenced to this Table by Requirement Reference Number.	Requirement Implementation Timing (Year) Year 1 = 0-12m Year 2 = 13-24m Year 3 = 25-36m Year 4 = 37-48m Year N = > 48m	Vendor Capability* (S)-Satisfied (P) Partially met (D) Can develop (A) Alternative (N) No solution (N/A) Not appl.
64	Clinical Data Exchange Functional Requirement	CDE-5	Provide a visually simple user interface utilizing presentation and organization features that facilitate efficient viewing and interpretation of data. For example, the use of color to denote abnormal values (suggested red) or provisional results and the incorporation of clickable links to related information such as reference ranges, free text interpretations, susceptibility tables, etc.		
65	Lab Data Exchange Functional Requirement	CDE-6	Provide the following minimum data elements for lab results reporting: Lab test name, lab value, date/time drawn, ordering physician, reference ranges, free text.		
66	Clinical Data Exchange Functional Requirement	CDE-7	Support the exchange of patient identity information, structured normalized data (HL7/HIPAA), structured non-normalized data (HL7, other XML) and unstructured data (PDF, Word Docs, Spreadsheets) ; (Non normalized data is defined as data that is subject to interpretation based on context or source).		
67	Clinical Data Exchange Functional Requirement	CDE-8	Provide capabilities to de-duplicate patient identities across multiple data sources and manage/link patient identifying information for patient medical records from multiple DSPs.		
68	Technical: Vocabularies	VOC-1	Provide standardized vocabularies, and if maintained locally, describe how these vocabularies will be maintained.		
69	Technical: Vocabularies	VOC-2	Provide solution for implementing new vocabulary standards as they are developed while maintaining linkage to current data and standards in place when the data was created.		
70	Non-functional: Maintenance and Operations	MNT-1	Starting with the implementation of Release 1 in the first live pilot sites, and for the duration of the contract, the Vendor is required to perform system maintenance and operations, modifications, and any Help Desk functions for Vendor application support, upgrades, and release support for the proposed HIE. Vendor Response SHALL indicate agreement with this requirement. (Also see D-26)		
71	Non-functional: Maintenance and Operations	MNT-2	Maintain current versions of 3rd party software.		
72	Non-Functional: Contractual provisions	GNL-1	Vendor response must state compliance with the requirements of the state's contract with AHRQ. (See Appendix C) Conform to the financial and schedule constraints of the AHRQ contract.		

Line #	Requirement Type	Requirement Reference Number Cross-Reference ID for Narrative Responses	REQUIREMENT DESCRIPTION Requirements listed in this Table are intended for Vendor consideration in their SOW Response. Vendors should use this Table to score the degree to which the Proposed System functionality and supporting Vendor capabilities meet each requirement. Any narrative descriptions should be compiled in an attachment and cross-referenced to this Table by Requirement Reference Number.	Requirement Implementation Timing (Year) Year 1 = 0-12m Year 2 = 13-24m Year 3 = 25-36m Year 4 = 37-48m Year N = > 48m	Vendor Capability* (S)-Satisfied (P) Partially met (D) Can develop (A) Alternative (N) No solution (N/A) Not appl.
73	Non-Functional: Stakeholder Principles	GNL-2	Address the RI HIE IT Principles		
74	Non-Functional: Governance	GNL-3	Address the proposed governance model whereby responsibility for the operation and development of the system will transition from DOH/DOIT to RIQI.		

NOTE: VENDOR RESPONSES MUST INCLUDE COMPLETION OF BLUE SHADED COLUMNS—PROVIDE NARRATIVE RESPONSES IN THE SECTION PROVIDED AFTER THE END OF THE TABLE.

Line #	Requirement Type	Requirement Reference Number Cross-Reference ID for Narrative Responses	REQUIREMENT DESCRIPTION Requirements listed in this Table are intended for Vendor consideration in their SOW Response. Vendors should use this Table to score the degree to which the Proposed System functionality and supporting Vendor capabilities meet each requirement. Any narrative descriptions should be compiled in an attachment and cross-referenced to this Table by Requirement Reference Number.	Requirement Implementation Timing (Year) Year 1 = 0-12m Year 2 = 13-24m Year 3 = 25-36m Year 4 = 37-48m Year N = > 48m	Vendor Capability* (F)-Fully met (P) Partially met (D) Can develop (A) Alternative (N) No solution
			NOTE: THE FOLLOWING REQUIREMENTS ARE NOT IN THE IMMEDIATE SCOPE OF RELEASE 1 / 1.X FOR PERFORMANCE UNDER THIS CONTRACT; HOWEVER, VENDORS ARE REQUIRED TO RESPOND TO THESE REQUIREMENTS FOR "FUTURE RELEASES" TO ILLUSTRATE POTENTIAL HIE SYSTEM CAPABILITY		
75	Future Releases	FUT-1	Provide architectural support for data sharing for other clinical transactions, e.g., reports, imaging data and contact information (phone numbers) using common HIE infrastructure. (See Data Prioritization Plan.)		
76	Future Releases	FUT-2	Provide approach and capability for routing and transmission of administrative transactions (e.g., HIPAA code sets)		
77	Future Releases	FUT-3	Provide provisions for batch inquiry for allowable analytic purposes subject to privacy requirements.		
78	Future Releases	FUT-4	Provide approach to enable flexibility to adjust requirements and plans based on experience with previous HIE System Releases and changes in applicable art and technology.		
79	Future Releases	FUT-5	Provide security capabilities to allow provider EHR systems to be certified as trusted partners to provide federated or proxy "single-sign-on" capabilities to allow seamless integration of RI HIT with provider EHR applications		
80	Future Releases	FUT-6	Provide for ease of integration with web-based EHR systems through the use of single-sign-on capabilities and web services interfaces.		
81	Future Releases	FUT-7	Provide interfacing with EMR systems at the server level to provide for pre-fetching and batch requests through the use of assured delivery web services or store and forward reliable messaging.		
82	Future Releases	FUT-8	Provide access to data on a real time and non real time basis – (both synchronous and asynchronous modes). Depending on online retention availability and staging requirements asynchronous transactions may be required if requirements are not immediate or requests are for large amounts of batched data for analytic purposes and delivery response is limited by throttling to prevent real time response degradation. While the ability to support asynchronous access, i.e., to support large analyses as might be requested for public health or research purposes, is not a Release 1 requirement, proposals should describe the Vendors approach and solution architecture components supporting this capability.		
83	Future Releases	FUT-9	Provide single sign-on pr proxy login capability to promote efficiency, preserve familiar workflows and to support access to the HIE System from within providers' local electronic record management (EHR) platforms;		

Line #	Requirement Type	Requirement Reference Number Cross-Reference ID for Narrative Responses	REQUIREMENT DESCRIPTION Requirements listed in this Table are intended for Vendor consideration in their SOW Response. Vendors should use this Table to score the degree to which the Proposed System functionality and supporting Vendor capabilities meet each requirement. Any narrative descriptions should be compiled in an attachment and cross-referenced to this Table by Requirement Reference Number.	Requirement Implementation Timing (Year) Year 1 = 0-12m Year 2 = 13-24m Year 3 = 25-36m Year 4 = 37-48m Year N = > 48m	Vendor Capability* (F)-Fully met (P) Partially met (D) Can develop (A) Alternative (N) No solution
84	Future Releases	FUT-10	Provide approach to creating reports on EHR, administrative and patient identity data for quality assurance, policy development and other authorized purposes. Specify pre-defined reports, ad-hoc reporting capabilities and tools for modifying, maintaining and cataloging reusable reports.		
85	Future Releases	FUT-11	RI plans to add data sharing partners incrementally at a rate based on the ability to certify new partners and subject to the ability to fund new capacity. Proposals should describe the approach to incremental addition of Data Sharing Partners with associated incremental cost burdens.		
86	Future Releases	FUT-12	Support incremental / gradual increase in carrying capacity (network, storage, servers, etc.) with associated incremental cost burdens		

NARRATIVE DESCRIPTIONS

AS NEEDED, INCLUDE NARRATIVE DESCRIPTIONS BELOW OR PROVIDE IN A SEPARATE ATTACHMENT. PLEASE INCLUDE REQUIREMENT REFERENCE NUMBERS WITH EACH NARRATIVE RESPONSE. DO NOT COPY THE ORIGINAL REQUIREMENT.

Requirement Reference Number Cross-Reference ID for Narrative Responses	

NARRATIVE DESCRIPTIONS

AS NEEDED, INCLUDE NARRATIVE DESCRIPTIONS BELOW OR PROVIDE IN A SEPARATE ATTACHMENT. PLEASE INCLUDE REQUIREMENT REFERENCE NUMBERS WITH EACH NARRATIVE RESPONSE. DO NOT COPY THE ORIGINAL REQUIREMENT.

Requirement Reference Number Cross-Reference ID for Narrative Responses	

APPENDIX C. KEY REFERENCE DOCUMENTS

- RI HIE PROJECT INFORMATION TECHNOLOGY PRINCIPLES
- RI HIE PROJECT PROPOSED CLINICAL DATA CATEGORIES FOR EXCHANGE
- EXISTING TECHNICAL INFRASTRUCTURE
- HL7 SPECIFICATION FOR LAB DATA EXCHANGE
- AHRQ CONTRACT PROVISIONS AND FAR CLAUSES

RI HIE Project Information Technology Principles

Approved

BACKGROUND

This set of IT Principles were developed based on the input from Rhode Island stakeholders through a formal needs identification process intended to identify important considerations for a proposed statewide health data exchange system. These principles represent Rhode Island stakeholder values related to information technology and, specifically, the goals of the Rhode Island HIE Project (the project).

DATA MANAGEMENT PRINCIPLES

1. **Common base of data:** A common base of data must be created to facilitate sharing and minimize redundancy. This data may be physically *or* logically consolidated (there may or may not be a central database).

2. **Comprehensiveness:** The goal of the system is to create as comprehensive a patient record as possible, and to consider the complete patient record.

3. **Accuracy:** Data must be accurate and complete (there is often a tradeoff between these two).

4. **Timeliness:** Data must be available in as near real-time as possible from the point of creation.

5. **Security and confidentiality:** Data must be safe from harm and accessible only to those with a "need to know." More specific rules should delineate the boundaries around data access from all perspectives (patient, provider, payer, others).

6. **Ease of access:** Data must be easy to access for all groups of authorized users regardless of their level of technical expertise. Ease of use comes first and foremost for healthcare providers who access systems.

7. **Multiple uses:** The primary uses for Protected Health Information are clinical support and public health surveillance. The project will plan for additional uses of de-identified data, including research, planning, evaluation, and quality improvement.

8. **Purposeful collection:** Data must be collected only once, as close to the source where it originated.

9. **Documentation:** Detailed information about data must be created, maintained, and made available to assist in data quality assurance.

10. **Population-based:** The system should populate records prospectively, starting with birth record information, and retrospectively using historical information, to construct as complete a health record as possible. Accurate patient matching is crucial to this capability. Accommodation needs to be made for patients who are born outside of the State to ensure that their records are included.

SYSTEM APPLICATION PRINCIPLES

11. **Ease of use:** Applications must be easy to use for both novice and expert users, and should pose minimal adverse impact on existing business and clinical processes and activities.

12. **Consistency:** Interfaces should be similar enough to present a consistent look and feel, though different interfaces might be necessary for different types of users.

13. **Adaptability:** Applications must be easily adaptable to changing functional and technical requirements.

14. **Ensuring data quality:** Applications must help ensure valid, consistent, and secure data while presenting minimal obstacles to smooth and efficient user.

15. **Visible benefit:** Applications must present visible, tangible benefits to end users.

INFORMATION INFRASTRUCTURE PRINCIPLES

16. **Platform neutrality:** Various platform architectures might satisfy the needs of the project.

17. **Reliability:** The system must operate reliably and be resilient to natural or technical disasters.

18. **Leverage networks:** Wherever possible, existing networks should be leveraged to minimize cost and complexity.

19. **Use of the Internet:** Secure use of the Internet should be encouraged as appropriate.

20. **Standards:** Where relevant, national standards for healthcare information technology should guide technical decisions.

ORGANIZATIONAL PRINCIPLES

21. **Support of mission:** Information technology initiatives must support the specific mission and goals of the project.

22. **Cost effectiveness:** Information technology must contribute to the cost effectiveness of the processes it supports, and needs to be cost effective for each partner to participate.

23. **Data stewardship:** Data stewards serve as custodians for data in their care, and are responsible (along with all providers and users of data) for ensuring the proper documentation, collection, storage, accuracy and use of data within their purview.

24. **Governance:** The project should have clear and strong processes for governance, consistent with the project proposal and the highest standards of the participants.

25. **Scope management:** The project recognizes the need for clear identification and careful management of its scope and activities.

RI HIE Project's Clinical Data Categories for Exchange

Overview

Integral to the AHRQ contractual provisions for the RI HIE Project is the requirement for specified levels of electronic clinical data exchange over five contract years. Proposed categories of clinical data have been identified in an early AHRQ contract deliverable and data sharing priorities have been further specified by the healthcare community (See Table 1, Data Prioritization Plan.) In summary, the RI HIE Project is committed to achieve the following data sharing goals for clinical data exchange under the AHRQ contract:

Year 1 (10/05)	Demonstrate 25% exchange of core data elements (done)
Year 2 (10/06)	Demonstrate 50% exchange of core data elements
Year 3 (10/07)	Demonstrate 100% exchange of core data elements
Years 4 and 5	Demonstrate progression of health data exchange

The 25% data sharing deliverable for Year 1 has been achieved through a combination of a lab data exchange prototype developed by the DSP Lab Subgroup and other ongoing clinical data sharing activities in the state. By contract, the RI HIE Project must assure that other clinical data types are added over time. It should be noted that efforts to develop the Data Prioritization Plan further addressed some of the "value" issues not defined in the original AHRQ deliverable. A comparison of core data element categories initially proposed and current data exchange priorities specified by RI stakeholders are as follows:

Core Data Element Categories for the RI HIE as initially identified for the AHRQ Contract	**RI HIE Project Stakeholder-approved Data Prioritization Plan**
■ Clinical laboratory data ■ Medication (prescription) data ■ Drug allergies ■ Child Health data ■ Utilization (encounter) data	**Clinical Data Exchange Priorities:** 1. Lab Information (target for HIE Release 1) 2. Medication Information 3. Reports (structured & unstructured data) 4. Phone numbers/contact information **Administrative Data Exchange Priority:** **1.** Insurance Eligibility Information: Insurance coverage and benefits, etc.

As background, considerations used in HEALTH's initial efforts to identify candidate data categories and descriptions of clinical data sources in RI are described below.

Background: Considerations Used in Developing a Selection of Proposed Core Data Element Categories

Given the multitude of data elements that providers would like to ultimately be able to share to improve their ability to provide high quality and safe health care, a framework was established to determine which data element categories would be shared initially, with the intent that the list of data elements will be expanded over time. It is critical to limit the scope of the RI HIE Project to assure that the first set of data elements can be successfully shared in a timely, accurate and complete manner. Once this is accomplished, additional data element categories can be added. Initial considerations used to determine which data element categories should be included first are as follows:

- Technical feasibility
- Value to the stakeholders
- Potential for improving care outcomes

It is important to note that these areas of consideration must continue to be considered throughout the course of the project for all data elements to be shared.

Technical Feasibility

Clearly some data element categories will be easier to obtain and share than others. Some data elements could be quickly, easily and relatively inexpensively incorporated into a shared data system. Other data elements will require substantial time, money and effort to be included. Considerations such as whether a data repository already exists, the format of the data, data/messaging standards, etc. will all affect technical feasibility of data access and use. Some data elements although highly valued by the provider community as needing to be shared (and serving as an incentive to use the proposed system) are not consistently collected in any computerized data system, requiring a great deal of system development in order to be included. These data elements include items such as allergies and the presence of chronic medical conditions.

Although there may be some data elements that are technically feasible to include, there may be reasons not to include them (or if chosen, may need to be amended over time). For example, the cost of access may be inconsistent with the value of the data, the time required to incorporate the data (time required to normalize or standardize data elements, etc.) may be beyond the AHRQ timeline, or a prohibitive number of data sources for a data element resulting in a high level of coordination needed initially (which could impact time and cost).

Value to Stakeholders

Three very important messages were articulated by RI stakeholders during the initial series of stakeholder meetings and were considered in establishing a proposed set of core data element categories.

- First, there was an extremely high level of interest in this project from clinicians, technology experts and health care executives within the state. The

turnout at the stakeholders meetings was impressive, demonstrating the real interest in and the widespread belief that data sharing is an important issue in health care delivery.

- Second, the stakeholders acknowledged they face a number of limitations in their ability to take on increased burdens, including time, money, effort or attention. If this initiative puts an excessive burden on stakeholders, they will be less likely to participate.
- Third, there was diversity among stakeholders as to what would constitute success for this project, i.e., what is considered success with regard to ease of use, level of access to data, comprehensiveness and focus of the new system.

Stakeholders are motivated to make this initiative a success. However, data elements to be shared must be prioritized to support stakeholder participation, that is, elements must be of sufficient value to meet the needs that motivate stakeholders to participate. Data elements identified to be of highest value to providers included: medication histories, lab results, diagnosis or problem lists (including chronic conditions), allergies, encounters, hospital and ED discharge summaries, immunizations, and radiology reports.

Potential for Improving Care Outcomes

While a number of benefits from the interoperability and electronic exchange of health information are hoped to be realized (operational efficiencies, cost savings, reduced administrative burden, etc.), the ultimate goal of this initiative is to improve patient outcomes by reducing medical errors and improving the quality of care delivered to Rhode Islanders. One major tension that exists within this project is the need to balance the realities of feasibility with the desire to have the maximum impact on health. The core data elements that may have the most impact on care delivery (for example, accurate allergy data and past medical histories, etc.) may be the most difficult to include in the system.

Summary

Given the above considerations, the initial list of core data element categories must balance technical feasibility, value to stakeholders, and the potential to measure outcomes and make a difference. The individual data element categories being proposed do not necessarily meet all three criteria, but as an collective set of data element categories, they may approach satisfying the three criteria (i.e., some are technically feasible but may not have the highest value to the provider, some are of high value to the provider and may reduce administrative time but not have significant potential for improving care outcomes and/or some that are not easily technical feasible but are critical to improving the outcome of care, etc.)

Descriptions and Rationale for Proposed Core Data Element Categories

1. **Clinical Laboratory data**
   Clinical laboratory data (e.g., blood glucose, cholesterol, microbiology, etc.) is not centralized and will require more effort to include a wide rage of data elements. It is anticipated that a full range of clinical laboratory data will be included in this interoperable system, therefore providing a comprehensive approach to electronic access to all clinical laboratory test results. The completeness of the laboratory results for any one patient may take time since it will be necessary to phase-in participation of data sharing partners. Laboratories will be included in the project in a stepwise fashion, beginning with the initial data sharing partners (East Side Labs, Lifespan hospital laboratories and HEALTH laboratories) followed by other participating hospitals, and private laboratories as feasible. This approach will allow some clinical laboratory results to be available for a significant number of patients relatively quickly. Having such clinical laboratory data readily accessible should help clinicians make appropriate care decisions (follow up on abnormal results performed outside of the primary care provider's offices, etc.) and may make care more efficient by avoiding unnecessary duplication of laboratory testing.

2. **Medication (Prescription) Data**
   Medication data is a critical core data element category since it meets all three criteria: it should be technically feasible, is of high value to providers and should have significant impact on improving health outcomes. For these reasons, it is important to include this data as quickly as possible. Access to electronic prescription medication data would allow clinicians to know if other practitioners have put their patients on prescription medications. It may also allow providers to see which prescriptions are actually being filled. This should also improve the quality of care, by avoiding medical errors related to duplicate or overlapping prescribing. While non-prescription medications were discussed in the initial physician stakeholder meetings, including such information does not seem feasible at this time and will be noted as request for future enhancements.

3. **Drug Allergies**
   Allergy information is again a very critical data element category that will provide high value to providers and help improve health care outcomes. The ability to share this data may be technically very challenging to accomplish. In order to begin to achieve some of the value and benefits, but recognizing the complexity of capturing and standardizing allergy information, only drug allergies will be included as an initial core data element category.

4. **Child Health Data**

   Childhood Lead Screening Test Results
   Sharing this data should be relatively straightforward, quick and reasonably inexpensive since all lead screening results are already captured by the Rhode Island Department of Health (HEALTH) in KIDSNET, RI's integrated childhood information system. There is also reason to believe that having this data available will improve the quality of care provided to young children. Currently,

physicians do not have ready access (timely electronic access) to this data unless connected to KIDSNET. They do receive hard copy paper results from the state laboratory. Some patients report having blood drawn at WIC clinics and some physicians were assuming WIC clinics were screening for lead, therefore the physician did not conduct the lead screening. In fact, the WIC clinics were only screening for anemia and hence some children went unscreened for lead. If the provider had ready access to statewide lead screening results for their patient, the problem could have been detected and appropriate lead screening performed. Given that lead poisoning is a prevalent pediatric problem in Rhode Island, this should be a high priority for improving health care delivery. There should also be a reduction in duplication of services. Providers would not have to screen for lead if they had evidence that a recent lead screen had occurred elsewhere. This would spare children unnecessary phlebotomy and save money.

Newborn Bloodspot Screening

The need to diagnose certain rare metabolic, endocrine and hemoglobinopathy disorders within a very short time period after birth is critical to safety and quality of care for newborns. It has only been within the past year that providers been able to get easy, quick access to results of newborn bloodspot screening, and that is only if they are connected to KIDSNET. The information that is now available through KIDSNET includes verification that the filter paper specimen has arrived at the regional laboratory, as well as summary test results. Hard copies of actual test results are sent to the provider as well. Given the centralized nature of this data through KIDSNET, it should be relatively quick and inexpensive to include this data in this initiative. Including this information should improve care by providing a method for physicians to assure that a specimen was drawn at birth and insuring that normal tests are documented.

Newborn Hearing Assessment Results

The ability to identify hearing impairments at a very young age can dramatically alter the developmental status of a child. Only recently have providers been able to get quick and easy access to results of newborn hearing screening results, and that is only if they are connected to KIDSNET. The information that is now available through KIDSNET includes verification that the assessment occurred and what the results are. Hard copies of actual assessment results are sent to the provider, if the provider is identified during the newborn hospital stay. Given the centralized nature of this data through KIDSNET, it should be relatively quick and inexpensive to include this data in the initiative. This should improve care by insuring that normal assessments are documented, and by providing a method for physicians to assure that an assessment was conducted.

Childhood Immunizations

Given that RI has a statewide immunization registry as part of KIDSNET at the RI Department of Health, it should be very feasible to include the immunization history for all children born RI in 1997 or after (those are the children with immunization data in the registry) Currently 70% of the primary care providers taking care of children are participating in KIDSNET (submitting immunization data into the registry) and that 70% is taking care of 80% of children in the state, indicating that the majority of children born in RI will have immunization data in

the system. It will be important to expand the number of providers participating in KIDSNET to continue to expand the immunization history data to include all children in the state.

5. Utilization Data

The HIE system should allow clinicians to know where a patient is receiving care and minimally what diagnoses were made in previous hospitalizations, emergency department visits or ambulatory visits. The feasibility for this data element category is challenging as the nature of the information is less clear cut (dates, diagnoses, procedures performed, etc.) Utilization data that may be included early in the system will reflect encounters with the initial data sharing partners and may be limited to hospital or health center encounters. The ability to eventually include private physician office encounters is dramatically more complex. It will not be feasible to roll out this data in one statewide effort. After implementation with the initial data-sharing partners, it is likely that other larger providers and/or practices with electronic health records (EHRs) would be approached. It may be more efficient to partner with insurers to get basic data on utilization from multiple sources. However, it is not clear what the barriers are to this approach and, if claims data is a primary source of information, the uninsured would be excluded and they are possibly a very high need group for information sharing. Another issue includes the need for a "push" component to the system. Ideally, clinicians would be informed of hospitalization or emergency department visits immediately, rather than having to wait until the patient presents to their office.

Data Element Categories for Future Enhancements

Imaging Data

This data element category has many of the same issues as sharing clinical laboratory data. However, there are additional complexities that involve data standards for image files and results reports. Additionally, the initial data sharing partners did not include an imaging center (except through Lifespan). Although the benefit of having easy access to imaging studies performed during hospitalizations or emergency department visits should make this an important data category since it would improve the follow up of abnormal findings and possibly avoid unnecessary duplication of imaging tests, the technical feasibility considerations will result in this data element category being a high priority for future enhancements.

Allergies

This would include expanding from drug allergies to all allergies including food allergies (for which some immunizations and medications are made from derivatives of), molds, dusts, bug bites, etc.

Other Relevant Clinical Information

This may include height, weight, blood pressure, vital signs, etc.

Adult Immunizations

This may include flu shots and other vaccines such as West Nile Virus and Lyme Disease, etc. There are implications for leveraging existing immunization registry and disease surveillance capabilities in the state.

Existing Technical Infrastructure

RI Division of Information Technology (DOIT)

The State of Rhode Island currently has 4 SAN controllers (3 EMC Clarions (1 @ DOA, 1@ DEM, 1@DOC and 1EMC Symetric in State Data Center). These systems are not currently integrated – i.e., replicating data between SANs, however the DOA and DOC Clarions are expected to have replication and failover capabilities at the time of contract award. The State also has the ability to run Linux on the current Mainframe at little additional cost. Six processors; could have virtual Linux machines.

The State has a SONET between the Johnston Data Center, Capital Center, Pastore Complex and the Verizon CO. Therefore, there is significant bandwidth availability for DR and failover within the environment; however minor upgrades to switching may be required to leverage this infrastructure. The State has a more limited bandwidth connection out to the internet, through OSHEAN, a third party carrier. Currently, data sharing partners have existing connectivity utilizing OSHEAN. Specific infrastructure capabilities of OSHEAN and each initial RI HIE Project Data Sharing Partners are described in the following sections.

Data Sharing Partners

Rhode Island Health Information Exchange Project
Initial Data Sharing Partner (DSP) Infrastructure--November 2005

Ref	DATA SHARING PARTNERS	LIFESPAN ❶	EAST SIDE CLINICAL ❶	HEALTH LAB ❶	KIDSNET	SURESCRIPTS ❷	RIHCA	RI DHS
	INFRASTRUCTURE & CAPABILITIES							
1	Connection to Internet (Y/N)	Y	Y	Y	Y	Y	Y	Y
1a	Primary Connection Type	20 Mb	CTC (ISP); T-1	20 Mb I-1	20 Mb I-1	Through DSPs	3 Mb	20 Mb I-1
1b	Secondary Connection Type	5 Mb	None	10 Mb I-2	10 Mb I-2	Through DSPs		10 Mb I-2
2	Firewalled (Y/N)	Y	Y	Y	Y	Y	Y	Y
3	Proxy Server Capable (Y/N)	Y	N, can if needed	N	N	Y	N	N
4	VPN Capable (Y/N)	Y	Y	Y	Y	Y	Y	Y
4a	VPN Vendor	Cisco	Cisco 3000	Cisco	Cisco	Cisco	Cisco	Cisco
5	External IP Address Scheme (Y/N)	Y	Y	Y	Y	Y	Y	Y
5a	Ext. Address Space Available (Y/N)	Y	Y	Y	Y	Y	Y	Y
6	Internal IP Scheme (Class A, B, or C)	B	C	B	B	B/C	B	B
6a	Int. Address Space Available (Y/N)	Y	Y	Y	Y	Y	Y	Y
7	Core Network Speed	1Gb	1Gb	1Gb	1Gb	I-1	1Gb	Fast Ethernet
8	Interface/Gateway Enabled (Y/N)	Y	N	Y		Y	N	N
8a	Interface/Gateway Vendor	Quovadx		Cerner		Surescripts		
9	Data Center Space for Router (Y/N)	Y	Y	N		N	Y	N
9a	Rack Mount or Appliance (R/A)	R	R				R	
10	Core Data System	Lifelinks	Anterim Lab - MUMPS	Cerner Lab	Homegrown	Surescripts	Custom: Using Microsoft IIS/ Foxpro/ SQL	
11	Core Data Vendor	Siemens	EastSideLab - Managed	Cerner Lab			Custom	

❶ Indicates initial DSPs for lab data exchange in HIE Release 1.

❷ Indicates initial DSP to support medication exchange in HIE Release 1.X.

OSHEAN

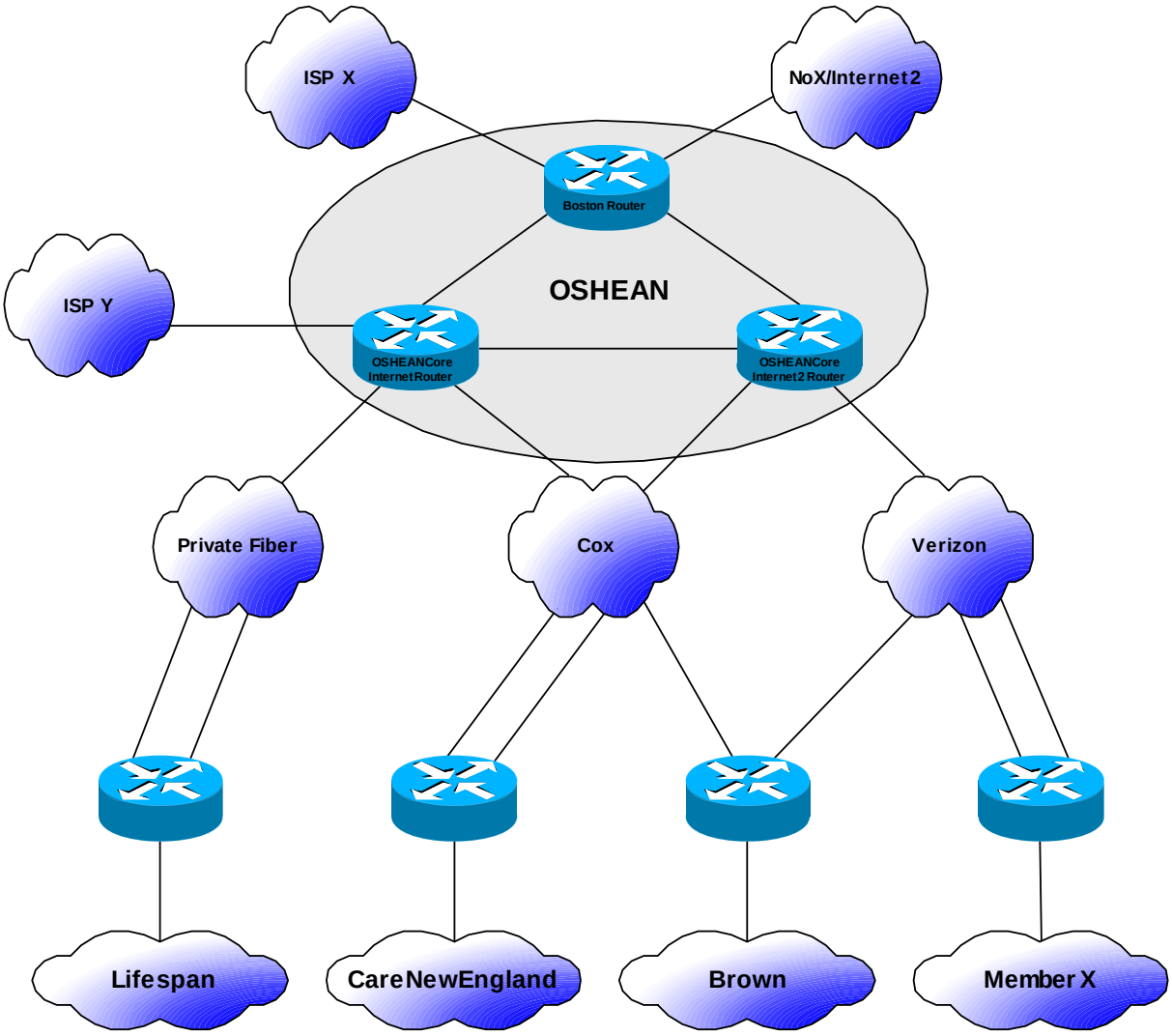
The Ocean State Higher Education Economic Development and Administrative Network, OSHEAN Inc., is a consortium of non-profit organizations comprising institutions of higher education, RINET (a non-profit corporation that serves the K-12 community), local, state and federal government agencies, and other non-profit organizations such as medical institutions, libraries, and museums involved in research and education efforts. The OSHEAN consortium is devoted to creating a stable, economical high-speed network for the use of its members and is committed to providing services that enhance the productive use of this network. Collaborative in nature, OSHEAN offers members the opportunity to connect Intra-OSHEAN network traffic over private commercial facilities thereby fostering advanced communications amongst member institutions.

The OSHEAN Network Operation Center (NOC) monitors and troubleshoots member Wide Area Network equipment and access carrier circuits. OSHEAN provides active "polling" of network edge router(s) every 3 minutes for alarms, 24x7, active member notification within one hour of an alarm, Solar Winds reporting, and service outage protection.

OSHEAN grants all eligible members access to the nations most advanced networks, collaboration with regional resources, and the ability to expand the opportunities for Rhode Island students and citizens. Via Internet2, OSHEAN partners with industry and government to develop and deploy advanced network applications and technologies, fostering opportunities between OSHEAN members and the global research and education community. OSHEAN is also a member of the Northern Crossroads (NOX) regional aggregation point which provides all OSHEAN members with direct high-speed access to the most prestigious research and education colleges and universities in New England. In 2004, OSHEAN was a founding member of the Northeast Research and Education Network, which serves to connect the research and education communities in New England and New York via dark fiber.

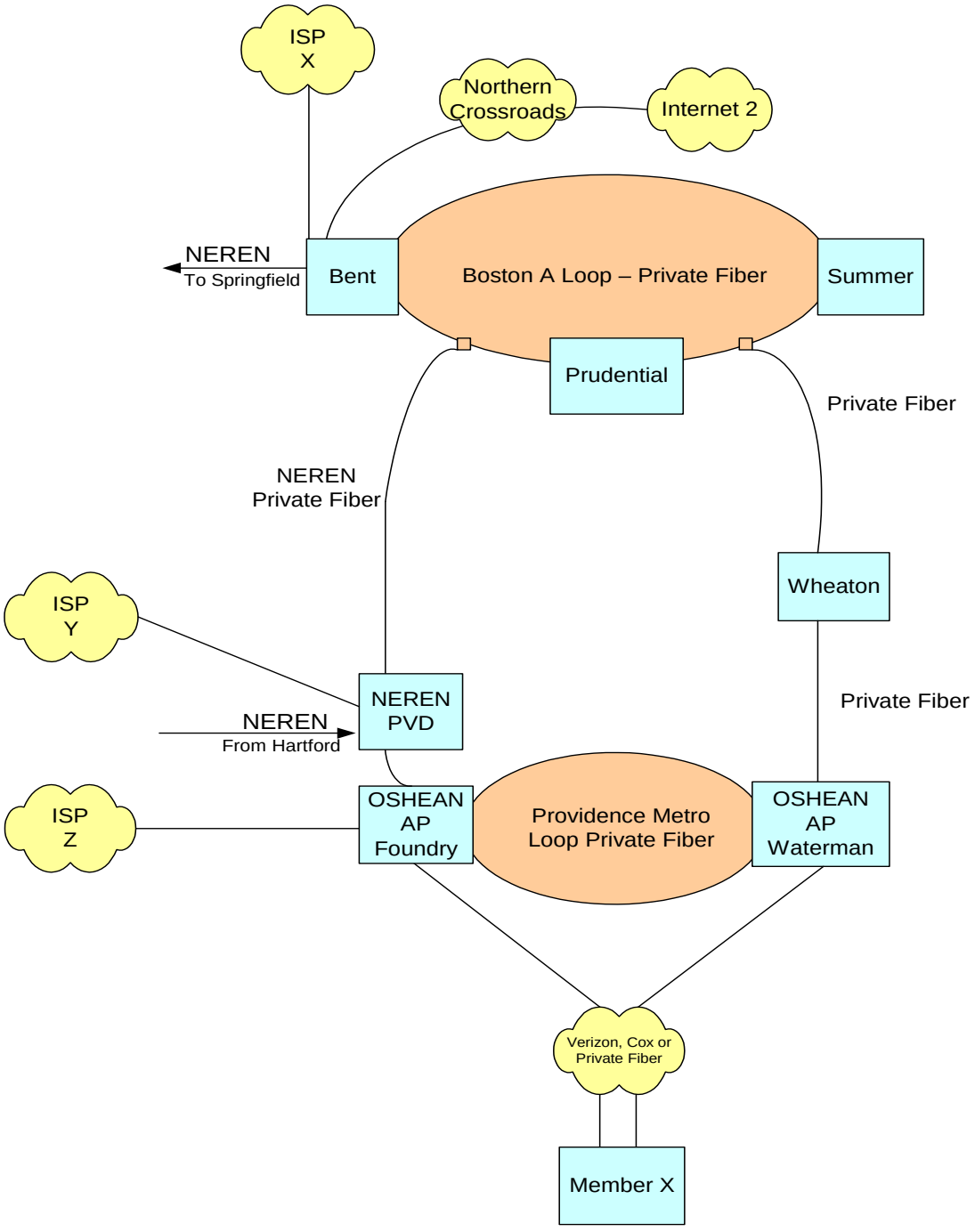
For additional information on OSHEAN please visit www.oshean.org, or email info@oshean.org.

OSHEAN Network Connection Model



OSHEAN members are granted multiple connection opportunities as utilization of services from Cox Communications, Verizon, or private fiber carriers afford a diverse redundant network infrastructure for access to fellow members and Internet2.

OSHEAN Core Diagram



The diagram above highlights the resources available to OSHEAN members.

HL7 Specification for RI HIE Release 1 for Lab Data Exchange

The HL7 Lab Order follows the standard version 2.3 of HL7. Although it follows the standard version, please review the specification noted below for specifics about each of the data elements.

The following are the keys for the various fields found in the table. NOTE: If you need further information about the data types, please refer to http://www.hl7.org for details.

Lab Order Data Type Field Keys

CE = Coded element
CM = Composite
CX = Extended composite with check digit
DLN = Driver license number
HD = Hierarchic designator
ID = ID field
IS = Coded value for user defined table
PT = Processing type
ST = String
TS = Time stamp
TX = Text data
XAD = Extended address
XCN = Extended composite ID number or name
XTN = Extended telecommunications
XPN = Extended person name

Lab Order Requirement Field Keys

C = Conditional
O = Optional
R = Required
RE = Required (could be empty)
X = Not supported

Lab Order Full HL7 Record Specification

The following is the full specification for all message segments as they relate to the HL7 Lab Order.

Lab Order MSH Message Segment

MSH Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	**1**	**ST**	**R**	**Field Separator**	**Use standard separators**	**|**
2	**4**	**ST**	**R**	**Encoding Character**	**Use example values**	**^ ~ \ &**
3	**40**	**HD**	**R**	**Sending Application**	**Use example value**	**Lab**
4	**20**	**HD**	**R**	**Sending Facility**	**Name of sending lab facility**	**East Side Lab**
5	40	HD	O	Receiving Application	Not currently used	
6	30	HD	O	Receiving Facility	Not currently used	

MSH Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
7	**26**	**TS**	**R**	**Date/Time of Message**	**Use YYYYMMDDHHMMSS**	**20070501121323**
8	40	ST	O	Security	Not currently used	
9	**7**	**CM**	**R**	**Message Type**	**Message type and event Receiving system should be able to take both discrete and textual type results**	**ORU^R01**
10	**20**	**ST**	**R**	**Message Control ID**	**Value sent back on ACK Unique value generated by sending system**	**123456789**
11	3	PT	O	Processing ID	Not currently used	
12	**8**	**ID**	**R**	**Version ID**	**Currently 2.3**	**2.3**
13	15	NM	O	Sequence Number	Not currently used	
14	180	ST	O	Continuation Pointer	Not currently used	
15	2	ID	O	Accept Ack Type	Not currently used	
16	2	ID	O	Application Ack Type	Not currently used	
17	2	ID	O	Country Code	Not currently used	
18	6	ID	O	Character Set	Not currently used	
19	60	CE	O	Principal Language	Not currently used	

Lab Order PID Message Segment

PID Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	4	SI	O	Set ID - Patient ID	Sequence number of PID segment if multiple exist	1
2	**20**	**CX**	**C**	**Patient ID (External)**	**The HIE Master Patient ID - EMPI (if available)**	
3	**20**	**CX**	**R**	**Patient ID (Internal)**	**Sending system MRN or Patient identifier**	
4	**16**	**CX**	**C**	**Alternate Patient ID**	**Not currently used**	
5	**48**	**XPN**	**R**	**Patient Name**	**Lastname^Firstname^Midddle Initial^Suffix**	**JONES^GERALD^T^JR**
6	48	XPN	O	Mother's Maiden Name	Optional	
7	**26**	**TS**	**R**	**Date/Time of Birth**	**YYYYMMDD, time optional**	**19700307**
8	**1**	**IS**	**R**	**Sex**	**M or F or U or O**	**M**
9	48	XPN	O	Patient Alias	Optional	

PID Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
10	1	IS	O	Race	Optional: Use standard HL7 table value	
11	106	XA	O	Patient Address	Optional: Street1^Street2^City^State^Zip^Country	10 MAIN STREET^ ^PROVIDENCE^RI ^02906^USA
12	4	IS	O	Country Code	Currently not used	
13	20	XTN	O	Phone Number (home)	Optional	
14	20	XTN	O	Phone Number (work)	Optional	
15	60	CE	O	Primary Language	Optional: Use standard HL7 table value	
16	1	IS	O	Marital Status	Optional: Use standard HL7 table value	
17	3	IS	O	Religion	Optional: Use standard HL7 table value	
18	20	CX	O	Patient Account Number	Optional: Patient facility internal ID	H12345678
19	11	ST	O	Patient Social Security Number	Not currently used	
20	25	DLN	O	Driver's License Number	Not currently used	
21	20	CX	O	Mother's Identifier	Not currently used	
22	3	IS	O	Ethic Group	Not currently used	
23	60	ST	O	Birth Place	Not currently used	
24	2	ID	O	Multiple Birth Indicator	Not currently used	
25	2	NM	O	Birth Order	Not currently used	
26	4	IS	O	Citizenship	Not currently used	
27	60	CE	O	Veteran's Military Status	Not currently used	
28	80	CE	O	Nationality	Not currently used	
29	26	TS	O	Patient Death Date and Time	Not currently used	
30	1	ID	O	Patient Death Indicator	Not currently used	

Lab Order PV1 Message Segment
Segment is optional

PV1 Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	4	SI	O	Set ID-PV1		
2	1	IS	O	Patient Class	Optional: Use standard HL7 table value	
3	80	PL	O	Assigned Patient Location	Not currently used	
4	2	IS	O	Admission Type	Not currently used	
5	20	CX	O	PreAdmit Number	Not currently used	
6	80	PL	O	Prior Patient Location	Not currently used	
7	60	XCN	O	Attending Doctor	Optional: Currently use UPIN	
8	60	XCN	O	Referring Doctor	Optional: Currently use UPIN	
9	60	XCN	O	Consulting Doctor	Optional: Currently use UPIN	
10	3	IS	O	Hospital Service	Not currently used	
11	80	PL	O	Temporary Location	Not currently used	
12	2	IS	O	PreAdmit Test Indicator	Not currently used	
13	2	IS	O	Readmission Indicator	Not currently used	
14	3	IS	O	Admit Source	Not currently used	
15	2	IS	O	Ambulatory Status	Not currently used	
16	2	IS	O	VIP Indicator	Not currently used	
17	60	XCN	O	Admitting Doctor	Optional: Currently use UPIN	
18	2	IS	O	Patient Type	Not currently used	
19	20	CX	O	Visit Number	Not currently used	
20	50	FC	O	Financial Class	Not currently used	
21	2	IS	O	Charge Price Indicator	Not currently used	
22	2	IS	O	Courtesy Code	Not currently used	
23	2	IS	O	Credit Rating	Not currently used	
24	2	IS	O	Contract Code	Not currently used	
25	8	DT	O	Contract Effective Date	Not currently used	
26	12	NM	O	Contract Amount	Not currently used	
27	3	NM	O	Contract Period	Not currently used	
28	2	IS	O	Interest Code	Not currently used	
29	1	IS	O	Transfer to Bad Dept Code	Not currently used	
30	8	DT	O	Transfer to Bad Dept Date	Not currently used	
31	10	IS	O	Bad Debt Agency Code	Not currently used	
32	12	NM	O	Bad Debt Transfer Amount	Not currently used	
33	12	NM	O	Bad Debt Recovery Amount	Not currently used	

PV1 Message Segment						
Seq	Length	Data Type	Requirement	Element Name	Notes	Example Value
34	1	IS	O	Delete Account Indicator	Not currently used	
35	8	DT	O	Delete Account Date	Not currently used	
36	3	IS	O	Discharge Dispostion	Not currently used	
37	25	CM	O	Discharged to Location	Not currently used	
38	2	IS	O	Diet Type	Not currently used	
39	2	IS	O	Servicing Facility	Not currently used	
40	1	IS	O	Bed Status	Not currently used	
41	2	IS	O	Account Status	Not currently used	
42	80	PL	O	Pending Location	Not currently used	
43	80	PL	O	Prior Temporary Location	Not currently used	
44	26	TS	O	Admit Date/Time	Not currently used	
45	26	TS	O	Discharge Date/Time	Not currently used	
46	12	NM	O	Current Patient Balance	Not currently used	
47	12	NM	O	Total Charges	Not currently used	
48	12	NM	O	Total Adjustments	Not currently used	
49	12	NM	O	Total Payments	Not currently used	
50	12	CX	O	Alternate Visit ID	Not currently used	
51	1	IS	O	Visit Indicator	Not currently used	
52	60	XCN	O	Other Healthcare Provider	Not currently used	

Lab Order ORC Message Segment
Segment is optional

ORC Message Segment						
Seq	Length	Data Type	Requirement	Element Name	Notes	Example Value
1	2	ID	O	Order Control	Optional	
2	22	EI	O	Placer Order Number	Optional	
3	22	EI	O	Filler Order Number	Optional	
4	22	EI	O	Placer Group Number	Optional	
5	2	ID	O	Order Status	Optional	
6	1	ID	O	Response Flag	Optional	
7	200	TQ	O	Quantity/Timing	Optional	
8	200	CM	O	Parent	Optional	
9	26	TS	O	Date/Time of Transaction	Optional	
10	120	XCN	O	Entered By	Optional	
11	120	XCN	O	Verified By	Optional	
12	120	XCN	O	Ordering Provider	Optional: Currently use UPIN	
13	80	PL	O	Enterer's Location	Optional	

ORC Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
14	40	XTN	O	Call Back Phone Number	Optional	
15	26	TS	O	Order Effective Date/Time	Optional	
16	200	CE	O	Order Control Code Reason	Optional	
17	60	CE	O	Entering Organization	Optional	
18	60	CE	O	Entering Device	Optional	
19	120	XCN	O	Action By	Optional	

Lab Order OBR Message Segment

OBR Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	4	SI	O	Set ID-OBR	Optional	
2	75	EI	O	Placer Order Number	Order number that comes from the sending system	
3	**75**	**EI**	**R**	**Filler Order Number**	**The unique ID from the sender lab system. Usually the lab accession number**	**K9876543**
4	**200**	**CE**	**R**	**Universal Service ID**	**LOINC Test Number^Test Name^LN^Local Lab Code^Local Lab Test Name**	
5	2	ID	O	Priority	Not currently used	
6	26	TS	O	Requested Date/Time	Date/time test requested in format YYYYMMDDDHHMMSS	
7	**26**	**TS**	**R**	**Observation Date/Time**	**Date/time of the result in format YYYYMMDDHHMMSS**	
8	26	TS	O	Observation End Date/Time	Not currently used	
9	20	CQ	O	Collection Volume	Not currently used	
10	60	XCX	O	Collection Identifier	Not currently used	
11	1	ID	O	Specimen Action Code	Not currently used	
12	60	CE	O	Danger Code	Not currently used	
13	300	ST	O	Relevant Clinical Info	Not currently used	
14	**26**	**TS**	**R**	**Specimen Received Date/Time**	**Date/time specimen was received in format YYYYMMDDHHMMSS**	
15	300	CM	RE	Specimen Source	Source of the specimen, if applicable and available	
16	**80**	**XCN**	**R**	**Ordering Provider**	**Currently use UPIN**	

OBR Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
17	40	XTN	O	Order Callback Phone Number	Not currently used	
18	60	ST	O	Placer Field 1	Not currently used	
19	60	ST	O	Placer Field 2	Not currently used	
20	500	ST	O	Filler Field 1+	Not currently used	
21	60	ST	O	Filler Field 2+	Not currently used	
22	**26**	**TS**	**R**	**Results Report Status Change Date/Time**	**The most recent date/time of change/update to the result**	
23	40	CM	O	Charge to Practice	Not currently used	
24	10	ID	O	Diagnostic Service	Not currently used	
25	**1**	**ID**	**R**	**Result Status**	**Report Status: P for Preliminary, F for Final or C for Corrected**	
26	400	CM	O	Parent Result	Not currently used	
27	200	TQ	O	Quantity/Timing	Not currently used	
28	150	XCN	O	Result Copies To	Not currently used	
29	150	CM	C	Parent	Not currently used	
30	20	ID	O	Transporation Mode	Not currently used	
31	300	CE	O	Reason For Study	Not currently used	
32	200	CM	O	Principal Result Interpreter	Not currently used	
33	200	CM	O	Assistant Result Interpreter	Not currently used	
34	200	CM	O	Technician	Not currently used	
35	200	CM	O	Transcriptionist	Not currently used	
36	26	TS	O	Scheduled Date/Time	Not currently used	
37	4	NM	O	Number of Sample Containers	Not currently used	
38	60	CE	O	Transport Logistics of Collected Sample	Not currently used	
39	200	CE	O	Collector's Comments	Not currently used	
40	60	CE	O	Transport Arrangement Responsibility	Not currently used	
41	30	ID	O	Transport Arranged	Not currently used	
42	1	ID	O	Escort Required	Not currently used	
43	200	CE	O	Planned Patient Transport Comment	Not currently used	

Lab Order OBX Message Segment

OBX Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	**10**	**SI**	**R**	**Set ID-Observation**	**The result sequence number**	
2	**2**	**ID**	**R**	**Value Type**	**Table Value: NM = Numeric, TX= Text See CHF table 125 in HL7 specification for more values**	
3	**590**	**CE**	**R**	**Observation Identifier**	**LOINC code^LOINC Description^Local Lab ID Number**	
4	20	ST	O	Observation Sub ID	Optional	
5	**65536**		**R**	**Observation Value**	**The result**	
6	**60**	**CE**	**RE**	**Units**	**Units of the result**	
7	**60**	**ST**	**RE**	**Reference Range**	**The reference range for the result**	
8	**10**	**ID**	**R**	**Abnormal Flags**	**Table Value: H = High, L = Low, C = Critical See CHF table 78 in HL7 specification for more values**	
9	5	NM	O	Probability	Not currently used	
10	5	ID	O	Nature of Abnormal Test	Not currently used	
11	**2**	**ID**	**R**	**Observation Result Status**	**Report Status for this result: P for Preliminary, F for Final or C for Corrected**	
12	26	TS	O	Date Last Obs Normal Values	Not currently used	
13	20	ST	O	User defined access checks	Not currently used	
14	26	TS	O	Date/Time of the observation	Not currently used	
15	**200**	**CE**	**R**	**Producer's ID**	**Name of the Lab that produced the result: Lab Name^Lab Address^Lab City^Lab State^Lab Zip^First and Lastname of Lab Medical Director**	**East Side Clinical Laboratory^154 Waterman Street^Providence^RI^02906^William Griffiths**

OBX Message Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
16	**80**	**XCN**	**RE**	**Responsible Observer**	**The ID of the person performing the test if available**	**JTF**
17	60	CE	O	Observation Method	Not currently used	
18	22	EI	O	Equipment Instance Identifier	Not currently used	
19	**26**	**TS**	**RE**	**Date/Time of Analysis**	**YYYYMMDDHHMMSS**	

Lab Order NTE Segment

NTE Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	**4**	**SI**	**R**	**Set ID-NTE**	**Sequence number**	
2	8	ID	O	Source of Comment	Not currently used	
3	**65536**	**FT**	**RE**	**Comment**	**Note or comment for the result**	
4	250	CE	O	Comment Type	Not currently used	

Lab Order MSA Segment

MSA Segment						
Seq	**Length**	**Data Type**	**Requirement**	**Element Name**	**Notes**	**Example Value**
1	**2**	**ID**	**R**	**Acknowledgement Code**	**AA=Ack, AE=Ack with Error, AR=Nak**	**AA**
2	**20**	**ST**	**R**	**Message Control ID**		
3	80	ST	O	Text Message	Not currently used	
4	15	NM	O	Expected Sequence Number	Not currently used	
5	1	ID	O	Delayed Ack Type	Not currently used	
6	100	CE	O	Error Condition	Not currently used	

Last revised 12/02/2005

AHRQ Contract Provisions and FAR Clauses

CLAUSES INCORPORATED BY REFERENCE (FEBRUARY 1998)

This contract incorporates the following clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.arnet.gov/far/

I. FEDERAL ACQUISITION REGULATION (FAR) (48 CFR CHAPTER 1) CLAUSES

FAR Clause No.	Title and Date
52.203-3	Gratuities (APR 1984)
52.203-5	Covenant Against Contingent Fee (APR 1984)
52.203-6	Restrictions on Subcontractor Sales to the Government (JUL 1995)
52.203-7	Anti-Kickback Procedures (JUL 1995)
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity (JAN 1997)
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity (JAN 1997)
52.203-12	Limitation on Payments to Influence Certain Federal Transactions (JUN 2003)
52.204-4	Printing or Copying Double-Sided on Recycled Paper (AUG 2000)
52.204-7	Central Contractor Registration. (OCT 2003)
52.209-6	Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment (JUL 1995)
52.215-2	Audit and Records - Negotiation (JUN 1999) Alternate II (APR 1998)
52.215-8	Order of Precedence-Uniform Contract Format (OCT 1997)
52.215-10	Price Reduction for Defective Cost or Pricing Data (OCT 1997) (applicable to contract actions over $550,000)
52.215-12	Subcontractor Cost or Pricing Data (OCT 1997) (applicable to contract actions over $550,000)
52.215-15	Pension Adjustments and Asset Reversions (JAN 2004)

52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions (OCT 1997)
52.215-19	Notification of Ownership Changes (OCT 1997)
52.216-7	Allowable Cost and Payment (DEC 2002)
52.216-11	Cost Contract – No Fee (APR 1984)
52.217-2	Cancellation Under Multiyear Contracts (OCT 1997)
52.217-8	Option to Extend Services (NOV 1999)
52.219-8	Utilization of Small Business Concerns (MAY 2004)
52.219-9	Small Business Subcontracting Plan (JAN 2002) (Applicable to contracts over $500,000)
52.219-16	Liquidated Damages - Subcontracting Plan (JAN 1999)
52.219-25	Small Disadvantaged Business Participation Programs—Disadvantaged Status and reporting (OCT 1999)
52.222-2	Payment for Overtime Premiums (JUL 1990). The amount in paragraph (a) is "zero" unless different amount is separately stated elsewhere in contract.
52.222-3	Convict Labor (JUNE 2003)
52.222-26	Equal Opportunity (APR 2002)
52.222-35	Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans. (DEC 2001)
52.222-36	Affirmative Action for Workers With Disabilities (JUNE 1998)
52.222-37	Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans. (DEC 2001)
52.223-6	Drug Free Workplace (MAY 2001)
52.223-14	Toxic Chemical Release Reporting (AUG 2003)
52.224-1	Privacy Act Notification (APRIL 1984)
52.224-2	Privacy Act (APRIL 1984)
52.225-1	Buy American Act - Supplies (JUNE 2003)
52.225-13	Restrictions on Certain Foreign Purchases (DEC 2003)

52.227-1	Authorization and Consent (JULY 1995)
52.227-2	Notice and Assistance Regarding Patent and Copy-Right Infringement (AUG 1996)
52.227-3	Patent Indemnity (APRIL 1984)
52.227-14	Rights in Data - General (JUNE 1987)
52.228-7	Insurance-Liability to Third Persons (MAR 1996)
52.232-9	Limitation on Withholding of Payments (APRIL 1984)
52.232-17	Interest (JUNE 1996)
52.232-20	Limitation of Cost (APR 1984)
52.232-23	Assignment of Claims (JAN 1986)
52.232-25	Prompt Payment (OCT 2003)
52.232-33	Payment by Electronic Funds Transfer Central Contractor Registration (OCT 2003)
52.233-1	Disputes (JULY 2002)
52.233-3	Protest After Award (AUG 1996) Alternate I (JUNE 1985)
52.237-10	Identification of Uncompensated Overtime (OCT 1997)
52.239-1	Privacy or Security Safeguards (AUG 1996)
52.242-1	Notice of Intent to Disallow Costs (APRIL 1984)
52.242-3	Penalties for Unallowable Costs (MAY 2001)
52.242-4	Certification of Final Indirect Costs (Jan 1997)
52.242-13	Bankruptcy (JULY 1995)
52.243-2	Changes - Cost Reimbursement (AUG 1987) - Alternate II (APRIL 1984)
52.244-2	Subcontracts (AUGUST 1998)
52.244-5	Competition in Subcontracting (DEC 1996)
52.245-5	Government Property (Cost Reimbursement, Time-and-Material, or Labor-Hour Contract (JUNE 2003)
52.246-5	Inspection of Services-Cost Reimbursement (APRIL 1984)

52.246-23	Limitation of Liability-(FEB 1997)
52.248-1	Value Engineering (FEB 2000)
52.249-6	Termination for Convenience of the Government (Educational and Other Nonprofit Institutions (SEP 1996)
52.249-14	Excusable Delays (APRIL 1984)
52.251-1	Government Supply Sources (APRIL 1984)
52.253-1	Computer Generated Forms (JAN 1991)

II. DEPARTMENT OF HEALTH AND HUMAN SERVICES ACQUISITION REGULATION (HHSAR) (48 CFR CHAPTER 3) CLAUSES

HHSAR Clause No.	Title and Date
352.202-1	Definitions (JAN 2001)
352.242-71	Final Decisions on Audit Findings (APRIL 1984)
352.228-7	Insurance - Liability to Third Persons (DEC 1991)
352.232-9	Withholding of Contract Payments (APRIL 1984)
352.233-70	Litigation and Claims (APR 1984)
352.224-70	Confidentiality of Information (APRIL 1984)
352.270-1	Accessibility of Meetings, Conferences, and Seminars to Persons With Disabilities (JAN 2001)
352.270-6	Publication and Publicity (JUL 1991)
352.270-7	Paperwork Reduction Act (JAN 2001)

KEY PERSONNEL (APRIL 1984) (HHSAR 352.270-5)

The personnel specified in this contract are considered to be essential to the work being performed hereunder. Prior to diverting any of the specified individuals to other programs, the Contractor shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the program. No diversion shall be made by the Contractor without the written consent of the Contracting Officer; provided, that the Contracting Officer may ratify in writing such diversion and such ratification shall constitute the consent of the Contracting Officer required by this clause. The contract may be amended from time to time during the course of the contract to either add or delete personnel, as appropriate.

(End of clause)

SECTION G4

G.4 INFORMATION ON VOUCHERS

(1) The Contractor agrees to include the following minimum information on vouchers:

(a) Contractor's name and invoice date;

(b) Contract Number;

(c) Description and price of services actually rendered;

(d) Other substantiating documentation or information as required by the contract;

(e) Name (where practicable), title, phone number, and complete mailing address or responsible official to whom payment is to be sent; and

(f) The Internal Revenue Service Taxpayer Identification Number.

(2) The Contractor shall furnish the following minimum information in support of costs submitted:

(a) Direct Labor - include all persons, listing the person's name, title, number of hours or days worked, the total cost per person and a total amount of this category;

(b) Fringe Costs - show rate, base and total amount as well as verification/allowability or rate changes (when applicable);

(c) Overhead or Indirect Costs - show rate, base and total amount as well as verification/allowability or rate changes (when applicable);

(d) Consultants - include the name, number of days or hours worked, a total amount per consultant and a total amount for this category;

(e) Travel - include for each airplane or train trip taken the name of the traveler, date of travel, destination, the transportation costs including ground transportation, shown separately, and per diem costs. Other travel costs shall also be listed. A total amount for this category shall be provided;

(f) Subcontractors - include for each subcontractor, the same data that is being provided for the prime contractor. A total number for this category shall be provided.

(g) Data Processing - include all non-labor costs, i.e., computer time, equipment purchase, lease or rental, data tapes, etc. A total amount for this category shall be provided.

(h) Other - include a listing of all other direct charges to the contract, i.e., office supplies, telephone, equipment rental, duplication, etc.

(i) Equipment Cost - itemize and identify separately from material costs including reference to approval in all cases;

(j) G&A - show rate, base and total as well as verification/allowability of rate changes (when applicable); and

(k) Fee – N/A

(l) In-kind contributions - shall be included in the invoice as work is performed, but will not be reimbursed under this contract.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 RESTRICTIONS ON PUBLICATION AND DISSEMINATION OF MATERIAL DERIVED FROM WORK PERFORMED UNDER THIS CONTRACT

Section 903(c) of the Public Health Service Act (PHS Act), 42 U.S.C. 299a-1, states in part that "No information, if the establishment or person supplying the information or described in it is identifiable, obtained in the course of activities undertaken or supported under this title, may be used for any purpose other than the purpose for which it was supplied unless such establishment or person has consented...to its use for such other purpose. Such information may not be published or released in other form if the person who supplied the information or who is described in it is identifiable unless such person has consented...to its publication or release in other form."

To ensure compliance with these requirements and to fulfill the mandate of 923(b)(1) of the PHS Act, 42 U.S.C. 299c-2(b)(1), to assure that statistics developed with AHRQ support are of high quality, comprehensive, timely, and adequately analyzed, except as otherwise provided in this contract, the Agency for Healthcare Research and Quality (AHRQ) must, prior to dissemination by the contractor, review all reports, presentations, or other disclosures that contain information, statistics, analytical material, or any other material, which is based on or derived from work performed under this contract. Accordingly:

(a) Except as provided in H.1(c), (e), and H.2(d), the contractor will not publish, have published, or otherwise disseminate any material resulting or derived from the work performed for AHRQ-funded research, except in accordance with the terms or conditions required by the Project Officer or until AHRQ has published the results of the research.

(b) AHRQ will, within three months of the receipt of any proposed publication, presentation, or any other disclosure of materials derived from information collected or produced for a particular task order, use best effort to review the proposed report, presentation, or other text to assure that (1) identifiable information is being used for the purpose for which it was supplied; (2) the privacy of individuals supplying the information or described in it is not violated; and (3) the quality of statistical work meets the statutory standards cited above.

(c) Except as provided in H.1(e), in the event no written conditions or approval are received from the Project Officer by the end of the three month period following submission of a request (that is accompanied by the proposed text) to publish a

report or to make a presentation or other disclosure of material derived from work performed for AHRQ-funded research, the contractor may publish, present, or otherwise disclose this material subject to the restrictions of Section 903(c). However, the contractor must print prominently on the report or any portion of it which is released, or state prior to any oral or other disclosure of material derived from work performed under this contract, the following disclaimer:

"THIS REPORT ***(or other appropriate description of publication)*** HAS NOT BEEN APPROVED BY THE AGENCY FOR HEALTHCARE RESEARCH AND QUALITY"

(d) Whether or not written approval of the Project Officer is received, the contractor must:

- print the following statement prominently on written reports or other forms of recorded data derived from work performed under this contract which is to be released; or

- preceding any presentation or other oral disclosure of such material make the following statement:

  "IDENTIFIABLE INFORMATION ON WHICH THIS REPORT, PRESENTATION, OR OTHER FORM OF DISCLOSURE IS BASED, IS CONFIDENTIAL AND PROTECTED BY FEDERAL LAW, SECTION 903(c) OF THE PUBLIC HEALTH SERVICE ACT, 42 U.S.C. 299a-1(c). ANY IDENTIFIABLE INFORMATION THAT IS KNOWINGLY DISCLOSED IS DISCLOSED SOLELY FOR THE PURPOSE FOR WHICH IT HAS BEEN SUPPLIED. NO IDENTIFIABLE INFORMATION ABOUT ANY INDIVIDUAL SUPPLYING THE INFORMATION OR DESCRIBED IN IT WILL BE KNOWINGLY DISCLOSED EXCEPT WITH THE PRIOR CONSENT OF THAT INDIVIDUAL."

(e) In cases where the Contracting Officer has given written notice that the Government intends to retain all rights in any particular data produced under this contract, the contractor shall have no right without prior written permission of the Contracting Officer to publish any of those data or analyses based on those data, depending on the scope of the Contracting Officer's notice.

(f) Whenever data or analyses are to be developed by a subcontractor under this contract, the contractor must include the terms of H.1(a), (b), (c), (d) and (e) in the subcontract, without substantive alteration, and with a prohibition on the subcontractor engaging in further assignment of its obligations to the contractor. No clause may be included to diminish the Government's restriction on publication and dissemination of work or material derived from work performed under this contract.

H.2 DEBARMENT

Violation of the special provisions of this contract entitled **RESTRICTIONS ON PUBLICATION AND DISSEMINATION OF MATERIAL DERIVED FROM WORK PERFORMED UNDER THIS CONTRACT, and RIGHTS IN DATA - SPECIAL WORKS** will be viewed as a serious violation of the terms of this contract as the requirements in

this provision reflect AHRQ statutory obligations and responsibilities. Such violations, as well as other violations, of the contract terms which are deemed serious, could result in the initiation of debarment proceedings in accordance with the Federal Acquisition Regulations and the Department of Health and Human Services implementing regulations.

H.3 SUBCONTRACTS

The contractor must include in any subcontracts executed or used to provide the support specified in this contract the terms of requirements H.1, H.2 and H.3. These requirements are to be included without substantive alteration, and no clause may be included to diminish these requirements.

Award of any subcontract is subject to the written approval of the Contracting Officer upon review of the supporting documentation as required by FAR Clause 52.215-12, Subcontractor Cost or Pricing Data, of the General Clauses incorporated into this contract. A copy of the signed subcontract shall be provided to the Contracting Officer.

APPENDIX D. VENDOR COMPLETION FORMS AND RESPONSE CHECKLIST

TECHNICAL PROPOSAL* (SEALED, UNDER SEPARATE COVER)

- ❑ **RIVIP BIDDER CERTIFICATION COVER FORM**
  (download from www.purchasing.ri.gov/RIVIP/Home.asp)
- ❑ **W-9 TAXPAYER IDENTIFICATION NUMBER AND CERTIFICATION FORM**
  (download from www.purchasing.ri.gov/RIVIP/publicdocuments/fw9.pdf)
- ❑ **FORM F-1: STATEMENT OF UNDERSTANDING**
- ❑ **FORM F-2: ORGANIZATIONAL DESCRIPTION**
- ❑ **FORM F-3: ORGANIZATION CHART**
- ❑ **FORM F-4: OFFEROR SUBCONTRACTORS**
- ❑ **FORM F-5: QUALIFICATIONS AND EXPERIENCE**
- ❑ **FORM F-6: OVERALL SCOPE OF WORK NARRATIVE(PLUS ATTACHMENTS)**
  - ❑ **SUPPORTING DOCUMENTATION**
    Should include supporting documentation listed in Part E.
  - ❑ **COMPLETED HIE REQUIREMENTS TABLE (APPENDIX B)**
- ❑ **FORM F-7: HIPAA AGREEMENT***
- ❑ **FORM F-9: OPTIONAL SERVICES**

COST PROPOSAL* (SEALED, UNDER SEPARATE COVER)

- ❑ **RIVIP BIDDER CERTIFICATION COVER FORM**
  (download from www.purchasing.ri.gov/RIVIP/Home.asp)
- ❑ **FORM F-8: COST (FINANCIAL) PROPOSAL**

* NOTE: One signature is required on each Vendor Completion Form and the Signature Page by Offeror's accountable senior executive or senior project manager for this HIE project except for Form F-7: HIPAA Agreement where both signatures are required.

VENDOR FORM F-1: STATEMENT OF UNDERSTANDING

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

1. State in concise terms the Offeror's understanding of the information system implementation, development, support and training activities to be performed by the HIE System Vendor and the role the Vendor is expected to perform, as described in the RFP.

---

* * * * * * * * * * * * *

VENDOR FORM F-2: ORGANIZATIONAL DESCRIPTION

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

1. Describe the offeror's organization, headquarters and branch office locations, parent and subsidiary organizations:

_____

2. Describe the relationship between the offeror's organization and any parent or subsidiary:

   2a. Name of Parent Organization:

   _____

   2b. Relationship to Offeror:

   _____

3. Describe offeror status as a minority business enterprise (MBE), certified by the Rhode Island Department of Administration. If the offeror is not MBE-certified and intends to subcontract with MBE-certified entities, please describe in Vendor Form F-4. Otherwise, describe measures to be taken to meet the State's goal of ten percent participation by MBE's in all state procurements.

   _____

4. Provide a description of the types of projects and the number of years the organization has been in the business of designing, installing and integrating health information exchange applications.

   4a. Types of Projects:

   _____

   4b. Total Number of Years Providing Relevant HIE System Services:

   _____

VENDOR FORM F-3: ORGANIZATION CHART

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

Provide an organization chart showing the structure of the offeror's organization as it pertains to this project and specific areas of responsibility for all staff associated with this project. Include key Vendor personnel with their job titles and roles on the project. This form may be cross-referenced to the Staffing Plan required for submission with the Response.

VENDOR FORM F-4: OFFEROR SUBCONTRACTORS

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

The offeror must indicate **(X)** whether or not they intend to use subcontractors: YES____ NO____

If "YES" is indicated, the offeror must provide the following information. Complete the numbered elements of this form <u>for each subcontractor</u>.

1. Provide the full name and address of any organization with which the offeror will subcontract for any services provided in the Rhode Island HIE System project and the mechanisms for assuring its effective and efficient operations.

Subcontractor: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Work to be Performed: _____

Mechanism for Assuring Effective and Efficient Subcontractor Operations: _____

2. List responsible officers of subcontractor, including those individuals authorized to negotiate for the subcontractor:

---

3. List any financial interest the offeror has in the proposed subcontractor:

---

4. Provide evidence of a potential subcontractor's willingness to participate in the Rhode Island HIE System project and enter into subcontractual arrangements with offeror:

---

5. Describe subcontractor's background and experience and the nature of offeror's previous engagements working with the subcontractor:

VENDOR FORM F-5: QUALIFICATIONS, EXPERIENCE AND FINANCIAL VIABILITY

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

1a. Describe in detail the offeror's prior experience / projects in applicable COTS/GOTS applications and HIE system implementation, integration, training and support and the offeror's ability to perform the Rhode Island HIE System project. (The experience described should substantiate the offeror's qualifications and capabilities to perform the project's scope of work.) Describe the project(s), the project goals and the project duration, summarize the project results, and describe the resources expended on the project. Vendors should address the preference that referenceable HIE products/system should have been successfully installed and currently functioning in two (2) different locations.

1b. Each HIE experience / project referenced above must be identified with the name of the customer indicated, and the name, address and telephone number of the responsible official of the customer, company or agency who may be contacted by the State:

Project Name: _____

Customer: _____

Responsible Official: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

2. Describe any technologies, special techniques, skills or abilities that the organization considers necessary to accomplish the HIE project requirements:

---

3. List, by name, and summarize the work experience and other relevant background of up to five (5) key individuals who will be assigned to work under the contract resulting from this RFP. Refer to concise resumes for all proposed project staff as an attachment to the Staffing Plan to be delivered with Form V-6 Supporting Documentation. Also provide the names, addresses and phone numbers of a primary customer reference that may be contacted by the State to verify the work experience of the key individuals cited.

Key Individual: _____

Relevant Work Summary: _____

Customer Reference Name: _____

Reference Street Address: _____

Reference City, State, ZIP: _____

Reference Phone: _____

Key Individual: _____

Relevant Work Summary: _____

Customer Reference Name: _____

Reference Street Address: _____

Reference City, State, ZIP: _____

Reference Phone: _____

Key Individual: _____

Relevant Work Summary: _____

Customer Reference Name: _____

Reference Street Address: _____

Reference City, State, ZIP: _____

Reference Phone: _____

Key Individual: _____

Relevant Work Summary: _____

Customer Reference Name: _____

Reference Street Address: _____

Reference City, _____

State, ZIP: _____

Reference Phone: _____

Key Individual: _____

Relevant Work Summary: _____

Customer Reference Name: _____

Reference Street Address: _____

Reference City, State, ZIP: _____

Reference Phone: _____

Key Individual: _____

Relevant Work Summary: _____

Customer Reference Name: _____

Reference Street Address: _____

Reference City, State, ZIP: _____

Reference Phone: _____

4. Provide information as an attachment sufficient to demonstrate financial responsibility, which may include the most recent 2 years financial statements, tax returns, certificate(s) of insurance, or other financial references.

VENDOR FORM F-6: OVERALL SCOPE OF WORK NARRATIVE

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

A. EXECUTIVE SUMMARY: Summarize the offeror's technical response to this RFP. Include adequate non-technical explanations of the proposed technical and architectural approaches:

B. HIE PROCUREMENT OBJECTIVES: Briefly describe how the offeror foresees accomplishing the scope of work in HIE Project Years 1-3 with regard to the following six (6) specific objectives (liberal use of cross-references to relevant parts of the response is encouraged):

1. Design, test and deploy an initial implementation (Release 1) of the HIE infrastructure to support laboratory data transfer from three initial data sharing partners into the HIE for authorized access and use by physician end-users in five clinical settings. Note that the HIE System Release 1 implementation described in this RFP is intended: (a) as a prototypical proof of concept of the overall architecture; (b) to produce initial live pilots of the core HIE system which will be expanded to support other types of clinical data exchange; and (c) to define conformance to overall architectural requirements for exchanging all types of health data (both structured and unstructured) in addition to solving the immediate problem of exchanging lab data. The pilot system MUST be designed with the intent to leverage the foundational code, functionality (especially patient identification/identity indexing, messaging, web services and interfaces) and to the greatest extent feasible, the technical infrastructure toward the continued incremental build-out of the Rhode Island Health Information Exchange. Exchange of prescription medication information should be considered the next priority data type for implementation in Release 1.X.

---

2. Specify a "best fit" technical architecture and infrastructure that will meet all of the needs for health data interchange based on current and foreseeable business, functional and supplementary (technical and non-functional) requirements. The ideal solution will include strong user authentication and state-of-the-art master person index (MPI) functionality; will be message-based, web-services enabled and designed to require minimal customization/configuration by data sharing partners or end-users; and will provide maximum functionality, support for patient consent processes, intuitive user interfaces, and acceptable system performance for all HIE end-users statewide. The HIE solution that satisfies these requirements must reflect and leverage the requirements and capabilities of current data sharing partners and be responsive to the unique needs and composition of future data sharing partners, end-users and consumers in Rhode Island.

---

3. Provide a technical and financial (cost) plan for a total period of ten years that reflects incremental growth in data types (structured and unstructured), data sharing partners and end-users as would be practical using and extending the initial infrastructure supporting Release 1 according to the architectural plan. NOTE: All cost information must be confined to the Cost Proposal.

---

4. Assure appropriate levels of project management and technical support to enable smooth implementation using a phased, prioritized approach that maximizes overall cost-effectiveness. This includes, but is not limited to, a commitment to the use of sound project management and systems development practices and the competent provision of technical implementation and system integration services, maintenance and support services, training services and documentation for both HIE system administrators and system end-users.

---

5. Plan for implementation activities in years 2 and 3 of the contract to include HIE rollout to other data sharing partners (with new types of data) and end-users, beyond the initial lab pilot. These partners include, but are not limited to, Surescripts (and other medication data providers), additional hospitals, clinics, physician offices, laboratories, diagnostic centers and health plans. The goal is have the capability to exchange RI lab and medication data (as described in this RFP) by the end of contract year 2.

---

6. Assure that all HIE implementation and integration activities appropriately reflect implications for health information infrastructure relative to the National Health Information Network (NHIN) goals for an HIE system and the standards and requirements set forth by the Centers for Disease Control and Prevention (CDC) for the Public Heath Information Network (PHIN).

C. HIE GENERAL REQUIREMENTS: Summarize how the offeror will address the general requirements enumerated in Section 7.2 for HIE Project Years 1-3. Vendor may cross-refer to another section of the response.

1. Project Planning and Management.

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2. State, Federal and Health Data Exchange Standards.

---

3. Quality Control.

D. HIE REQUIREMENTS TABLE: Attach the completed HIE Requirements Table in Appendix B and any narrative details provided. Assure that all instructions are followed as described in Appendix A.

E. SUPPORTING DOCUMENTATION: Include all details required to be submitted with the Vendor Response. Vendor may cross-refer to another section of their response. Supporting documentation includes:

1. *Project Work Plan*: A high level project plan identifying all required project deliverables, resources, scheduling, and dependencies. The Project Work Plan should include all work, hours and deliverables anticipated in the solution, clearly identifying which components are proposed to be provided by Vendor and which components are proposed to be provided by the State or other sources. Further, Vendor will clearly delineate proposed activities and timelines in each applicable Systems Development Life Cycle (SDLC) phase of work in the HIE Project. (Vendor may specify a preferred development framework.) The Project Work Plan shall clearly map to the Vendor-specified SDLC phases and the deliverables outlined in this RFP (see Table 4). Vendor resources referenced in this Project Work Plan shall clearly map to resources in the Staffing Plan (see below). Tasks that require HEALTH, State or non-Vendor personnel participation shall be scheduled based on normal business hours and shall be based upon a 35-hour week with the recognition that many of the non-Vendor resources will not be full time on this project. Vendors should adhere to the specific Planning requirements as required by the State of Rhode Island Division of Information Technology (DOIT).
2. *Project Staffing Plan*: *Project Staffing Plan*: Clearly describe all personnel resources required for the project. The Staffing Plan should include the type and number of Vendor staff needed (job titles/functions) along with necessary staff knowledge and skill sets required.. At a minimum, the following functions should be considered:
   - Project Manager
   - Database Administrator
   - Developer/Programmer
   - Security Administrator
   - Server Administrator
   - Help Desk Staff
   - Trainer

   The Staffing Plan should also identify the necessary complement (number, roles and responsibilities) of local (State and stakeholders) staff resources needed to work with the Vendor (i.e., staff that should be assigned some level of responsibility) on this project. The Plan should indicate the skill sets needed by local staff as well as an estimate of the amount of their time that should be dedicated to this project.

   Include an organizational chart showing how the Vendor proposes to manage and organize their staff on the project (cross-reference to/from Form F-3 as needed). Name Vendor personnel to be assigned to the HIE Project and their roles; provide a concise resume (including relevant experience) for each named team member. If staffing will change during different project phases, include a separate organization chart or use special notations to indicate variations in staff support during each applicable project phase. If the staffing mix of local resources needs to change during the different project phases, please identify.

3. *Proposed Technical Architecture Design*: A description and graphical representation of “best fit” physical and logical network design specifications for the RI HIE System. This description should include technical architecture, application architecture, deployment architecture, interface definitions (APIs), support of technical standards, and any other information which will help the

State gain a detailed understanding of the proposed solution. Use case, functionality, and system life cycle assumptions should be incorporated.

4. *Recommended Infrastructure Requirements*: A document describing hardware and software configurations for system infrastructure to support Release 1/1.X Use Case functionality in a limited live pilot according to stated implementation priorities (Table 3) and the incremental build-out of the future state HIE based on three planning scenarios over three years of system growth that incorporate the workload, growth and user assumptions listed below.

   Planning Scenarios:

   1. 50 simultaneous, active users
   2. 200 simultaneous, active users
   3. 500 simultaneous, active users

   Workload Assumptions:

   a. Three initial clinical lab data sharing partners (DSPs)
   b. Baseline patients: 1.5 million patient records with 60% overlapping patient IDs among DSPs (patient identities must be matched, records merged and de-duplicated for presentation via the HIE)
   c. Baseline data: 5 million lab tests (assumes 2 years of tests will eventually be made available in the production HIE)
   d. Rate of information growth:
      i) 500 new patients enrolled per month (across all DSPs)
      ii) 200,000 tests/encounters/records per month (across all DSPs)
   e. Rate of new DSPs: Add 4 DSPs (for each 12 months of operation after first pilot period)

5. *Implementation Plan*: Implementation activities refer to those activities that must be completed to rollout the HIE System Release 1/1.X in a live, production environment once it has been developed and fully pilot tested according to HIE Project-defined implementation priorities (Table 3). In the Plan, clearly define Vendor's approach to the planning and execution of all HIE System implementation activities throughout Years 1-3 of the contract. Vendors are encouraged to use a structured systems development framework as the basis for organizing the plan and logically linking it to the Project Work Plan. At a minimum, the Implementation Plan should include detailed descriptions of the following elements inherent in the Vendor's proposed approach to implementation:

   - Implementation methodology and tools.
   - Processing environments (See requirements in PROC-1) including Vendor's commitment and plan with respect to ensuring that all environments are properly set up, maintained, secured and auditable.
   - Project communication practices. Types of communications include bi-directional feedback on all project deliverables and interim communications in regard to project performance reporting such as project status and progress, meeting coordination, issues escalation, etc.
   - Customization and development required. HEALTH expects the Vendor to use an incremental, prototyping development approach.
   - Live Pilot testing, user acceptance practices and approach to transition the HIE to production including description of the expected impact to end-user normal operating capabilities during the transition phase.
   - Approaches to facilitate HIE System adoption and use. HEALTH recognizes the importance of statewide adoption and use of the HIE System to Rhode Island's ability to achieve critical objectives for health information exchange and improvements in population health. Include a description of the Vendor-recommended approach to

systems adoption and use based on organizational, structural, financial, cultural, human resource, training and other considerations.

- Data management and conversion methodologies including Vendor strategy for merging person and clinical data across systems and a strategy for handling data conversion during an incremental statewide rollout. Specify any anticipated dual entry requirements, recommended duration, use of test scripts, automated tools, etc.
- Change/configuration management methodology and approaches including how software, version control, code promotion, and documentation versioning will be managed for all environments throughout the life of the contract.
- Quality control procedures
- Contingency plans in the event that key implementation activities are not completed in the planned timeframe.
- Disaster recovery and backup plan for the HIE System environment including testing protocols to be used prior to moving the system into production. Describe the proposed approach to day-to-day procedures for system backups and restore operations. The proposed solution shall assure recoverability of patient data as well as metadata, configuration and all other updatable data.
- Vendor turnaround times for maintenance, modifications, and help desk calls to be adhered to during the live pilots and during and after the introduction of any modifications, enhancements, and new releases.
- Security plan which takes into account security requirements as specified in the HIE System Requirements Table (See SEC-1 through SEC-3) and Vendor responsibility for the maintenance of their products, services and processing environments to include continuous conformation to any new or changing Federal, DOIT, HEALTH, or other applicable security requirements.
- Approach to training local IT personnel and end-users.
- Impact of optional (or other) services recommended to assure successful implementation. Sample Service Level Agreements may be provided where applicable.

6. *Approach to Risk Management*: Vendor should describe how risks are to be identified, analyzed, mitigated, monitored, escalated and resolved during the project life cycle.
7. *General Documentation*: Vendor should supply descriptive documentation as applicable for COTS products and/or integration services and any other documentation which may be helpful to the State in gaining an understanding of Vendor's offering.

VENDOR FORM F-7: HIPAA AGREEMENT

I. Definitions:

(a) A Business Associate shall mean the CONTRACTOR.

(b) A Covered Program shall mean the STATE.

(c) Other terms used, but not otherwise defined, in this agreement shall have the same meaning as those terms in the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA) and its implementing regulations, including those at 45 CFR Parts 160 (General Administrative Requirements) and 164 (Security and Privacy).

II. Obligations and Activities of the Business Associate:

(a) The Business Associate agrees to not use or further disclose Protected Health Information other than as permitted or required by this Agreement or as required by law.

(b) The Business Associate agrees to use the appropriate safeguards to prevent use or disclosure of the Protected Health Information other than as provided for by this Agreement and to implement administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity and availability of any electronic Protected Health Information that it creates receives, maintains or transmits on behalf of the Covered Entity pursuant to this Agreement.

(c) The Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of Protected Health Information by the Business Associate in violation of the requirements of this Agreement.

(d) The Business Associate agrees to report to the Covered Program, any use or disclosure of the Protected Health Information not provided for by this Agreement, as soon as reasonably practicable of which it becomes aware. The Business Associate also agrees to report to the Covered Entity any security incident of which it becomes aware.

(e) The Business Associate agrees to ensure that any agent, including a subcontractor, to whom it provides Protected Health Information received from, or created or received by the Business Associate on behalf of the Covered Program agrees to the same restrictions and conditions that apply through this Agreement to the Business Associate with respect to such information.

(f) The Business Associate agrees to provide access, at the request of the Covered Program, and in the time and manner designated by the Covered Program, to Protected Health Information in a Designated Record Set, to the Covered Program or, as directed by the Covered Program, to an Individual in order to meet the requirements under 45 CFR 164.524, if the business associate has protected health information in a designated record set.

(g) The Business Associate agrees to make any amendment(s) to Protected Health Information in a designated record set that the Covered Program directs or agrees to pursuant to 45 CFR 164.526 at the request of the Covered Program or an Individual, and in the time and manner designated by Covered Program, if the business associate has protected health information in a designated record set.

(h) The Business Associate agrees to make internal practices, books, and records relating to the use and disclosure of Protected Health Information received from, or created or received by the Business Associate on behalf of, the Covered Program available to the Covered Program, or to the Secretary of the Department of Health and Human Services, in a time and manner designated by the Covered Program or the Secretary, for purposes of the Secretary determining the Covered Program's compliance with the Privacy Rule.

(i) The Business Associate agrees to document such disclosures of Protected Health Information and information related to such disclosures as would be required for Covered Program to respond to a request by an Individual for an accounting of disclosures of Protected Health Information in accordance with 45 CFR 164.528.

(j) The Business Associate agrees to provide to the Covered Program or an Individual, in a time and manner designated by Covered Program, information collected in accordance with this Agreement, to permit Covered Program to respond to a request by an Individual for an accounting of disclosures of Protected Health Information in accordance with 45 CFR 164.528.

III. Permitted Uses and Disclosures by Business Associate

(a) General Use and Disclosure Provisions:
Except as otherwise limited in this Agreement, the Business Associate may use or disclose Protected Health Information to perform functions, activities, or services for, or on behalf of, the Covered Program as specified in the Agreement to which this is an addendum, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Program.

(b) Specific Use and Disclosure Provisions:

(1) Except as otherwise limited in this Agreement, the Business Associate may disclose Protected Health Information for the proper management and administration of the Business Associate, provided that disclosures are required by law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as required by law or for the purpose for which it was disclosed to the person, and the person notifies the Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

(2) Except as otherwise limited in this Agreement, the Business Associate may use Protected Health Information for the proper management and administration of the business associate or to carry out its legal responsibilities and to provide Data Aggregation services to Covered Program as permitted by 45 CFR 164.504(e)(2)(i)(B). Data Aggregation includes the combining of protected information created or received by a Business Associate through its activities under this contract with other information gained from other sources.

(3) The Business Associate may use Protected Health Information to report violations of law to appropriate federal and State authorities, consistent with 45 CFR 164.502(j)(1).

IV. Obligations of Covered Program

Provisions for the Covered Program to Inform the Business Associate of Privacy Practices and Restrictions

(a) The Covered Program shall notify the Business Associate of any limitation(s) in its notice of privacy practices of the Covered Entity in accordance with 45 CFR 164.520, to the extent that such limitation may affect the Business Associate's use or disclosure of Protected Health Information.

(b) The Covered Program shall notify the Business Associate of any changes in, or revocation of, permission by the Individual to use or disclose Protected Health Information, to the extent that such changes may affect the Business Associate's use or disclosure of Protected Health Information.

(c) The Covered Program shall notify the Business Associate of any restriction to the use or disclosure of Protected Health Information that the Covered Program has agreed to in accordance with 45 CFR 164.522, to the extent that such restriction may affect the Business Associate's use or disclosure of Protected Health Information.

V. Permissible Requests by Covered Program

The Covered Program shall not request the Business Associate to use or disclose Protected Health Information in any manner that would not be permissible under the Privacy Rule if done by Covered Program, except if the Business Associate will use or disclose protected health information for, and the contract includes provisions for, data aggregation or management and administrative activities of Business Associate.

VI. Term and Termination

(a) *Term.* The Term of this Agreement shall be effective during the dates noted on page one of this agreement, after which time all of the Protected Health Information provided by Covered Program to Business Associate, or created or received by Business Associate on behalf of Covered Program, shall be destroyed or returned to Covered Program, or, if it is infeasible to return or destroy Protected Health Information, protections are extended to such information, in accordance with the termination provisions in the Agreement.

(b) *Termination for Cause.* Upon the Covered Program's knowledge of a material breach by Business Associate, Covered Program may provide an opportunity for the Business Associate to cure the breach and end the violation or may terminate this Agreement and the master Agreement if the Business Associate does not cure the breach

and end the violation within the time specified by Covered Program, or the Covered Program may immediately terminate this Agreement and the master Agreement if the Business Associate has breached a material term of this Agreement and cure is not possible.

(c) *Effect of Termination.*

(1) Except as provided in paragraph (c)(2) below, upon termination of this Agreement, for any reason, the Business Associate shall return or destroy all Protected Health Information received from the Covered Program, or created or received by the Business Associate on behalf of the Covered Program. This provision shall apply to Protected Health Information that is in the possession of subcontractors or agents of the Business Associate. The Business Associate shall retain no copies of the Protected Health Information.

(2) In the event that the Business Associate determines that returning or destroying the Protected Health Information is not possible, the Business Associate shall provide to the Covered Program notification of the conditions that make return or destruction not possible. Upon mutual agreement of the Parties that return or destruction of Protected Health Information is not possible, the Business Associate shall extend the protections of this Agreement to such Protected Health Information and limit further uses and disclosures of such Protected Health Information to those purposes that make the return or destruction not possible, for so long as Business Associate maintains such Protected Health Information.

VII. Violations

(a) It is further agreed that any violation of this agreement may cause irreparable harm to the State, therefore the State may seek any other remedy, including an injunction or specific performance for such harm, without bond, security or necessity of demonstrating actual damages.

(b) The Business Associate shall indemnify and hold the State harmless against all claims and costs resulting from acts/omissions of the Business Associate in connection with the Business Associate's obligations under this Agreement.

VIII. Miscellaneous

(a) *Regulatory References*. A reference in this Agreement to a section in the HIPAA Privacy Rule means the section as in effect or as amended, and for which compliance is required.

(b) *Amendment*. The Parties agree to take such action as is necessary to amend this Agreement from time to time as is necessary for Covered Program to comply with the requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act, Public Law 104-191.

(c) *Survival.* The respective rights and obligations of the Business Associate under Section VI of this Agreement shall survive the termination of this Agreement.

(d) *Interpretation.* Any ambiguity in this Agreement shall be resolved in favor of a meaning that permits the Covered Program to comply with the HIPAA Privacy Rule.

(e) If anything in this agreement conflicts with a provision of any other agreement on this matter, this Agreement is controlling.

(f) HIV/AIDS. If HIV/AIDS information is to be disclosed under this Agreement, the Business Associate acknowledges that it has been informed of the confidentiality requirements of INSERT RHODE ISLAND LEGAL REFERENCE.

Name (Offeror, Senior Executive)	Name (Offeror, Senior HIE Project Manager)
Signature	Signature
Date	Date

VENDOR FORM F-8: COST PROPOSAL

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

ALL COPIES OF COST PROPOSALS SHALL BE SUBMITTED IN A SEPARATE SEALED ENVELOPE OR CONTAINER SEPARATE FROM THE TECHNICAL PROPOSAL. THE OUTSIDE SHALL BE IDENTIFIED CLEARLY AS "COST PROPOSAL" WITH THE RFP NUMBER AND CLOSING DATE.

Cost Proposals should include the series of schedules listed below to derive a **total fixed price for the overall proposed solution for three sequential contract years AND the total fixed price for a one year extension (year 4).** Cost Proposals must be prepared in the most thorough manner to provide essential and reliable cost details for each of three years of the proposed contracted work and one year of extended and/or optional services. Therefore, Cost Proposals must provide details for a total of four years. Computations and totals shall be provided as required to understand the full proposal price. In addition, estimates and justification for a total cost of ownership/operation (TCO) of the proposed system should be specified for years 5 – 10 of the proposed system's life cycle. The methodology and assumptions used for TCO analysis should be clearly stated.

The following guidelines should be followed in preparing Cost Proposals:

A. **Relate Costs to Project Work Plan**. Cost Proposals must incorporate details from the Project Work Plan in terms of the proposed work effort (hours) and proposed timeline to produce the required contract deliverables. All related costs required to produce contract deliverables should be accounted for and included in the total cost.

B. **Prices.** Prices for all hardware, software, license and maintenance fees and other services and related personnel costs and expenses should be provided in detail, for each of four possible project years. All annual costs, by cost category, should be summed for each of four years and a total projected project cost figure should be provided for the proposed contract period Years 1-3 and for Year 4 assuming an option to extend.

C. **Labor Costs.** Vendor should specify hourly rates for labor categories in the Labor Rate Schedule provided. Labor Costs should be calculated based on the Vendor's Labor Rate Schedule and the budgeted work effort as reflected in the Project Work Plan accompanying this response. Labor costs should be calculated for Release 1/1.X Work Effort for contract years 1-3 and a Year 4 option to extend. Optional Services Work Effort costs should be developed separately (See #6 below).

D. **Customization**. Include fixed price customization cost in the Cost Proposal of the response. Within this fixed price, provide costs by detailed requirements, design, actual customization (programming), testing, updates to documentation, and updates to training materials. Include in this firm fixed per customization price the cost of the Vendor further defining the functionality and the requisite customization, or any additional customization that is required through this process.

E. **Discounts.** In an effort to receive the highest quality solution at the lowest possible price the State requests all available discounts on all materials and services offered by Vendors responding to this

RFP. Vendors are encouraged to offer discounts below contract and/or open market rates; whichever is applicable. When discounts are offered, proposals must clearly identify both the contract or open market price and the discount price for each hardware item or labor rate being discounted. The State reserves the right to purchase hardware and software using existing State contracts if doing so benefits the State.

F. **Travel.** It is anticipated that travel will be necessary. These travel costs include origination, destination, number of trips, number of persons and a breakdown of lodging/ meals/ transportation and related costs. If the Vendor anticipates additional travel costs, those costs shall be included (with justification) in the Cost Proposal. Actual expenses are limited by Government Travel Regulations and must be pre-approved by HEALTH.

G. **Other Direct Costs (ODCs).** The contractor shall provide a breakdown of any ODCs in the Cost Proposal. The breakdown shall include narrative explanation of an identification of any "open market items" or the contracting vehicle used to purchase the ODC items.

H. **Optional Services.** Provide labor and material (to the extent feasible) rates for all optional services offeror proposes, in addition to mandatory services. At a minimum, labor rates for all optional services proposed should be included as a specific category in the Labor Rate Schedule. Additional costs and cost assumptions for all optional services must be included to the greatest extent possible. Additional considerations for costing Optional Services include:

- Lab data conversion: Fixed cost for converting data for all applicable legacy systems. Time and material costs should be broken out into years of work with estimated time required and hourly rates.
- Support for additional data exchange: State all cost assumptions for hardware/software, customization, data conversion, testing, deployment, etc.
- Training: Rates for this optional service should include hourly labor costs by category and cost breakdown for travel and lodging for two training categories; technical training and end-user training.
- Hosting: Reflect the total annual cost of supporting HIE operations, including disaster recovery and backup, after Year 3 of the contract period. State all growth assumptions and related costs.

I. **Narrative.** Cost assumptions, travel/trip assumptions, formulas, customization notes, ODC items and other pricing details should be explained in a narrative addendum to the cost schedules.

The following documentation should be included. Where provided, Vendors should use the illustrated format. Editable Excel® templates are provided for convenience. To edit, double-click on the schedules, complete all entries and click in the document margin to place the updated worksheet back in the document. Please assure that all intended cells are viewable.

- ❑ Detailed Annual Budget for each year; Years 1 – 4 (Use Detailed Annual Budget template)
- ❑ Bill of Materials Years 1 – 3 (Use Bill of Materials template)
- ❑ Bill of Materials Year 4 (Use Bill of Materials template)
- ❑ Summary Budget for Years 1 – 3 (Use Summary Budget template)
- ❑ Labor Rate Schedule – one schedule with notations indicating rate adjustments over time and rates to support Optional Services, if applicable (Use Labor Rate Schedule template)
- ❑ Deliverables Cost Schedule for all required Deliverables produced during the three-year contract period (Use Deliverables Cost Schedule template—note two pages)
- ❑ Budget Narrative. Documentation of assumptions, cost justification, calculations/formulas, customization breakdown, etc., for all major cost categories including Optional Services to accompany each detailed annual budget form for each year. (NO TEMPLATE PROVIDED—Use Vendor preferred format)
- ❑ Total Estimated Cost of HIE Operations: Years 5 – 10
(NO TEMPLATE PROVIDED—Use Vendor preferred format)

RI HIE RFP Number: XXXXXX

Rhode Island Health Information Exchange Proposal **NOTE: Complete yellow shaded cells**

DETAILED ANNUAL BUDGET **CONTRACT YEAR:**

OFFEROR:

Offeror is responsible for assuring the accuracy of all calculations.

Cost Category	Cost	Discount if applicable	Units	Cost SUBTOTAL	Discount SUBTOTAL
DIRECT LABOR	Contract Rate	Discount Rate	Labor Hours		
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
Position				$ -	$ -
LABOR SUBTOTAL			-	**$ -**	**$ -**
OTHER DIRECT COSTS*					
Proposed Customization					
Travel					
Printed material (documentation)					
Other ODC					
Other ODC					
Other ODC					
Other ODC					
Other ODC					
ODC SUBTOTAL				**$ -**	**$ -**
TECHNOLOGY^					
Hardware					
Software					
Licenses & Warranty					
Other Technology					
Other Technology					
Other Technology					
Other Technology					
Other Technology					
TECHNOLOGY SUBTOTAL				**$ -**	**$ -**
INDIRECT COSTS*					
Indirect cost					
Indirect cost					
Indirect cost					
Indirect cost					
Indirect cost					
INDIRECT SUBTOTAL				**$ -**	**$ -**
TOTAL DISCOUNTS					**$ -**
TOTAL ANNUAL BUDGET				**$ -**	

* Requires narrative description of assumptions and calculations

^ Source document is Technology Bill of Materials for the corresponding contract year

Rhode Island Health Information Exchange Proposal

NOTE: Complete yellow shaded cells

BILL OF MATERIALS **CONTRACT YEAR:**

OFFEROR:

Offeror is responsible for assuring the accuracy of all calculations.

Description	Retail Price	Offeror Price	Quantity	Offeror Price SUBTOTAL	Discount SUBTOTAL
HARDWARE					
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
equipment name/part number				$ -	$ -
HARDWARE SUBTOTAL			-	**$ -**	**$ -**
SOFTWARE					
software name/version				$ -	$ -
software name/version				$ -	$ -
software name/version				$ -	$ -
software name/version				$ -	$ -
software name/version				$ -	$ -
software name/version				$ -	$ -
software name/version				$ -	$ -
software name/version				$ -	$ -
SOFTWARE SUBTOTAL				**$ -**	**$ -**
LICENSES & WARRANTY					
list					
list					
list					
list					
list					
list					
LICENSES/WARRANTY SUBTOTAL				**$ -**	**$ -**
OTHER TECHNOLOGY COSTS					
Other					
Other					
Other					
Other					
Other					
OTHER SUBTOTAL				**$ -**	**$ -**
TOTAL DISCOUNTS					**$ -**
TOTAL ANNUAL TECHNOLOGY BILL OF MATERIALS				**$ -**	

* Requires narrative description of assumptions and calculations

^ Source document is Technology Bill of Materials for the corresponding contract year

Rhode Island Health Information Exchange Proposal

NOTE: Complete yellow shaded cells

SUMMARY BUDGET **CONTRACT YEAR:**

OFFEROR:

Offeror is responsible for assuring the accuracy of all calculations.

Cost Category	YEAR 1	YEAR 2	YEAR 3	Category SUBTOTAL	Discount SUBTOTAL
DIRECT LABOR				$ -	
OTHER DIRECT COSTS*				$ -	
TECHNOLOGY^				$ -	
INDIRECT COSTS*				$ -	
TOTAL ANNUAL BUDGETS	$ -	$ -	$ -		
TOTAL DISCOUNTS					$ -
GRAND TOTAL				$ -	

* Requires narrative description of assumptions and calculations

^ Source document is Technology Bill of Materials for the corresponding contract year

RI HIE RFP Number: XXXXXX

Rhode Island Health Information Exchange Proposal

NOTE: Complete yellow shaded cells

Labor Rate Schedule **CONTRACT YEAR:**

OFFEROR:

Offeror is responsible for assuring the accuracy of all calculations.

Direct Labor Category**	Base Contract Rate	Annual Adjustment Rate (%)^	Year 1 Rate	Year 2 Rate	Year 3 Rate	Year 4 Rate (Optional)	Year 5 Rate (Optional)	Year 6 Rate (Optional)	Year 7 Rate (Optional)
Position									
Position									
Position									
Position									
Position									
Position									
Position									
Position									
Position									
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Position									
Position									

** This Schedule should reflect the contract rates for all labor categories including those for Optional Services.

^ Note any changes in rate assumptions and explain in Narrative section of Cost Proposal

Rhode Island Health Information Exchange Proposal

NOTE: Complete yellow shaded cells

DELIVERABLES COST SCHEDULE

OFFEROR:

Offeror is responsible for assuring the accuracy of all calculations.

CONTRACT DELIVERABLES	YEAR 1 COST	YEAR 2 COST	YEAR 3 COST	DELIVERABLE COST
D1. Project Status Briefings				$ -
D2. Monthly Project Status Report				$ -
D3. Project Work Plan				$ -
D4. Staffing Plan				$ -
D5. Risk Management Plan and Risk Matrix				$ -
D6. Change Management / CM Plan and Issues/Change/Action Item Log				$ -
D7. Final Functional Requirements				$ -
D8. Technical Architecture Design				$ -
D9. General System Interface Requirements				$ -
D10. Infrastructure Requirements				$ -
D11. Implementation Plan				$ -
D12. Software Quality Assurance Plan				$ -
D13. Security Plan, Security Reports				$ -
D14. Final Disaster Recovery (DR) Plan and participation in DR tests				$ -
D15. Data Conversion Requirements				$ -
D16. Requirements Traceability Matrix				$ -

NOTE: This Schedule is split for display purposes. After editing, please assure all cells on both pages include the intended calculations.

Continued, Next Page

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CONTRACT DELIVERABLES	YEAR 1 COST	YEAR 2 COST	YEAR 3 COST	DELIVERABLE COST
D17. Processing Environments				$ -
D18. Core Applications				$ -
D19. Detailed Gap Analysis				$ -
D20. Training Plan				$ -
D21. Test Plan				$ -
D22. Executed Test Cases Results Report				$ -
D23. Detailed Design Specifications				$ -
D24. HIE System Prototypes				$ -
D25. System Documentation				$ -
D26. Maintenance and Operations Staffing Plan				$ -
D27. Pilot Rollout				$ -
D28. Maintenance and Operations Support and User Help Desk Services				$ -
D29. Pilot Site Rollout Business Readiness Plans				$ -
D30. Transition Plan				$ -
D31. Lessons Learned				$ -
D32. Production Software				$ -
GRAND TOTAL CONTRACT COST				$ -

VENDOR FORM F-9: OPTIONAL SERVICES

Offeror: _____

Street Address: _____

City, State, ZIP: _____

Phone: _____

Signature: _____

Date: _____

Offerors must add additional pages as necessary to complete the information requested.

* * * * * * * * * * * * *

1. Describe in detail the offeror's proposed approach and capability to provide any of the optional services listed below. The State reserves the right to procure any combination of these optional services as part of this contract award as needs arise and funding permits. If an option is exercised, the State reserves the right to request additional details for proposals. ALL LABOR RATES FOR OPTIONAL SERVICES MUST BE INCLUDED IN THE COST PROPOSAL LABOR RATE SCHEDULE and MUST NOT APPEAR IN THIS FORM.

   Optional services include:

OS1. Design, test and implement additional priority data categories for exchange through the HIE. These include, but may not be limited to:

OS1.1	Reports (emergency department and hospital discharge summaries; pathology, cytology, outpatient procedure, radiology reports, etc.)
OS1.2	Additional patient phone contact information
OS1.3	Administrative (health plan) data, specifically, insurance eligibility information (Insurance coverage and benefits, etc)
OS1.4	Child health data (link to KIDSNET integrated database)
OS1.5	Medication allergies
OS1.6	Imaging data

OS2. Provide ongoing HIE System / application technical support and maintenance.

OS3. Provide operations support and hosting services for the HIE.

OS4. Provide HIE System disaster recovery and backup services.

OS5. Provide HIE System Administrator and end-user training. Both technical and end-user components should be included in a description of the Vendor's training approach.

OS6. Provide additional integration services to support interoperability of the RI HIE System with other information exchange infrastructures, e.g., state Medicaid systems/databases, other RHIOs, etc.

APPENDIX E.

IT SUPPLEMENTAL TERMS AND CONDITIONS

Appendix E

Information Technology (IT) Supplemental Terms and Conditions

The State and Vendor reserve the right to negotiate mutually agreeable final terms and conditions as part of the Vendor selection process.

1. DEFINITIONS: The following terms shall be given the meaning shown, unless context requires otherwise or a unique meaning is otherwise specified.

a) **"Acceptance Tests"** means those tests performed during the Performance Period which are intended to determine compliance of Equipment and Software with the specifications and all other Attachments incorporated herein by reference and to determine the reliability of the Equipment.

b) **"Application Program"** means a computer program which is intended to be executed for the purpose of performing useful work for the user of the information being processed. Application programs are developed or otherwise acquired by the user of the Hardware/Software system, but they may be supplied by the Contractor.

c) "**Attachment**" means a mechanical, electrical, or electronic interconnection to the Contractor-supplied Machine or System of Equipment, manufactured by other than the original Equipment manufacturer, that is not connected by the Contractor.

d) **"Business entity"** means any individual, business, partnership, joint venture, corporation, S-corporation, limited liability corporation, limited liability partnership, sole proprietorship, joint stock company, consortium, or other private legal entity recognized by statute.

e) **"Buyer"** means the State's authorized contracting official.

f) **"Commercial Software"** means Software developed or regularly used that: (i) has been sold, leased, or licensed to the general public; (ii) has been offered for sale, lease, or license to the general public; (iii) has not been offered, sold, leased, or licensed to the public but will be available for commercial sale, lease, or license in time to satisfy the delivery requirements of this Contract; or (iv) satisfies a criterion expressed in (i), (ii), or (iii) above and would require only minor modifications to meet the requirements of this Contract.

g) **"Contract"** means this Contract or agreement (including any purchase order), by whatever name known or in whatever format used.

h) **"Custom Software"** ***means Software that does not meet the definition of Commercial Software*****.**

i) **"Contractor"** means the Business Entity with whom the State enters into this Contract. Contractor shall be synonymous with "supplier," "Vendor" or other similar term.

j) **"Data Processing Subsystem"** means a complement of Contractor-furnished individual Machines, including the necessary controlling elements (or the functional equivalent) and Operating Software, if any, which are acquired to operate as an integrated group, and which are interconnected entirely by Contractor-supplied power and/or signal cables; e.g., direct access controller and drives, a cluster of terminals with their controller, etc.

k) **"Data Processing System (System)"** means the total complement of Contractor-furnished Machines, including one or more central processors (or instruction processors) and Operating Software, which are acquired to operate as an integrated group.

l) **"Deliverables"** means Goods, Software, Information Technology, telecommunications technology, documentation, software code, tangible outcomes, and other items (e.g. reports) to be delivered pursuant to this Contract, including any such items furnished incident to the provision of services.

m) **"Designated CPU(s)"** means for each product, if applicable, the central processing unit of the computers or the server unit, including any associated peripheral units. If no specific "Designated CPU(s)" are specified on the Contract, the term shall mean any and all CPUs located at the site specified therein.

n) **"Documentation"** means nonproprietary manuals and other printed materials necessary or useful to the State in its use or maintenance of the Equipment or Software provided hereunder. Manuals and other printed materials customized for the State hereunder constitute Documentation only to the extent that such materials are described in or required by the Statement of Work.

o) **"Equipment"** is an all-inclusive term which refers either to individual Machines or to a complete Data Processing System or subsystem, including its Hardware and Operating Software (if any).

p) **"Equipment Failure"** is a malfunction in the Equipment, excluding all external factors, which prevents the accomplishment of the Equipment's intended function(s). If microcode or Operating Software residing in the Equipment is necessary for the proper operation of the Equipment, a failure of such microcode or Operating Software which prevents the accomplishment of the Equipment's intended functions shall be deemed to be an Equipment Failure.

q) **"Facility Readiness Date"** means the date specified in the Statement of Work by which the State must have the site prepared and available for Equipment delivery and installation.

r) **"Goods"** means all types of tangible personal property, including but not limited to materials, supplies, and Equipment (including computer and telecommunications Equipment).

s) **"Hardware"** usually refers to computer Equipment and is contrasted with Software. See also Equipment.

t) **"Installation Date"** means the date specified in the Statement of Work by which the Contractor must have the ordered Equipment ready (certified) for use by the State.

u) **"Information Technology"** includes, but is not limited to, all electronic technology systems and services, automated information handling, System design and analysis, conversion of data, computer programming, information storage and retrieval, telecommunications which include voice, video, and data communications, requisite System controls, simulation, electronic commerce, and all related interactions between people and Machines.

v) **"Machine"** means an individual unit of a Data Processing System or subsystem, separately identified by a type and/or model number, comprised of but not limited to mechanical, electro-mechanical, and electronic parts, microcode, and special features installed thereon and including any necessary Software, e.g., central processing unit, memory module, tape unit, card reader, etc.

w) **"Machine Alteration"** means any change to a Contractor -- supplied Machine which is not made by the Contractor, and which results in the Machine deviating from its physical, mechanical, electrical, or electronic (including microcode) design, whether or not additional devices or parts are employed in making such change.

x) **"Maintenance Diagnostic Routines"** means the diagnostic programs customarily used by the Contractor to test Equipment for proper functioning and reliability.

y) **"Manufacturing Materials"** means parts, tools, dies, jigs, fixtures, plans, drawings, and information produced or acquired, or rights acquired, specifically to fulfill obligations set forth herein.

z) **"Mean Time Between Failure (MTBF)"** means the average expected or observed time between consecutive failures in a System or component.

aa) **"Mean Time to Repair (MTTR)"** means the average expected or observed time required to repair a System or component and return it to normal operation.

bb) **"Operating Software"** means those routines, whether or not identified as Program Products, that reside in the Equipment and are required for the Equipment to perform its intended function(s), and which interface the operator, other Contractor-supplied programs, and user programs to the Equipment.

cc) **"Operational Use Time"** means for performance measurement purposes, that time during which Equipment is in actual operation by the State. For maintenance Operational Use Time purposes, that time during which Equipment is in actual operation and is not synonymous with power on time.

dd) **"Performance Testing Period"** means a period of time during which the State, by appropriate tests and production runs, evaluates the performance of newly installed Equipment and Software prior to its acceptance by the State.

ee) **"Period of Maintenance Coverage"** means the period of time, as selected by the State, during which maintenance services are provided by the Contractor for a fixed monthly charge, as opposed to an hourly charge for services rendered. The Period of Maintenance Coverage consists of the Principal Period of Maintenance and any additional hours of coverage per day, and/or increased coverage for weekends and holidays.

ff) **"Preventive Maintenance"** means that maintenance, performed on a scheduled basis by the Contractor, which is designed to keep the Equipment in proper operating condition.

gg) **"Principal Period of Maintenance"** means any nine consecutive hours per day (usually between the hours of 7:00 a.m. and 6:00 p.m.) as selected by the State, including an official meal period not to exceed one hour, Monday through Friday, excluding holidays observed at the installation.

hh) **"Programming Aids"** means Contractor-supplied programs and routines executable on the Contractor's Equipment which assists a programmer in the development of applications including language processors, sorts, communications modules, data base management systems, and utility routines, (tape-to-disk routines, disk-to-print routines, etc.).

ii) **"Program Product"** means programs, routines, subroutines, and related items which are proprietary to the Contractor and which are licensed to the State for its use, usually on the basis of separately stated charges and appropriate contractual provisions.

jj) **"Remedial Maintenance"** means that maintenance performed by the Contractor which results from Equipment (including Operating Software) failure, and which is performed as required, i.e., on an unscheduled basis.

kk) **"Site License"** means for each product, the term "Site License" shall mean the license established upon acquisition of the applicable number of copies of such product and payment of the applicable license fees as set forth in the Statement of Work.

ll) **"Software"** means an all-inclusive term which refers to any computer programs, routines, or subroutines supplied by the Contractor, including Operating Software, Programming Aids, Application Programs, and Program Products.

mm) **"Software Failure"** means a malfunction in the Contractor -- supplied Software, other than Operating Software, which prevents the accomplishment of work, even though the Equipment (including its Operating Software) may still be capable of operating properly. For Operating Software failure, see definition of Equipment Failure.

nn) **"State"** means the government of the State of Rhode Island, its employees and authorized representatives, including without limitation any department, agency, or other unit of the government of the State of Rhode Island.

oo) **"System"** means the complete collection of Hardware, Software and services as described in this Contract, integrated and functioning together, and performing in accordance with this Contract.

pp) **"U.S. Intellectual Property Rights"** means intellectual property rights enforceable in the United States of America, including without limitation rights in trade secrets, copyrights, and U.S. patents.

2. SEVERABILITY:

The Contractor and the State agree that if any provision of this Contract is found to be illegal or unenforceable, such term or provision shall be deemed stricken and the remainder of the Contract shall remain in full force and effect. Either party having knowledge of such term or provision shall promptly inform the other of the presumed non-applicability of such provision.

3. INDEPENDENT CONTRACTOR:

Contractor and the agents and employees of Contractor, in the performance of this Contract, shall act in an independent capacity and not as officers or employees or agents of the State.

4. APPLICABLE LAW:

This Contract shall be governed by and shall be interpreted in accordance with the laws of the State of Rhode Island; venue of any action brought with regard to this Contract shall be in Providence County, Providence, Rhode Island. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Contract.

5. COMPLIANCE WITH STATUTES AND REGULATIONS:

a) Contractor warrants and certifies that in the performance of this Contract, it will comply with all applicable statutes, rules, regulations and orders of the United States and the State of Rhode Island and agrees to indemnify the State against any loss, cost, damage or liability by reason of the Contractor's violation of this provision.

b) If this Contract is in excess of $500,000, it is subject to the requirements of the World Trade Organization (WTO) Government Procurement Agreement (GPA).

6. CONTRACTOR'S POWER AND AUTHORITY:

The Contractor warrants that it has full power and authority to grant the rights herein granted and will hold the State harmless from and against any loss, cost, liability, and expense (including reasonable attorney fees) arising out of any breach of this warranty. Further, Contractor avers that it will not enter into any arrangement with any third party, which might abridge any rights of the State under this Contract.

7. ASSIGNMENT:

This Contract shall not be assignable by the Contractor in whole or in part without the written consent of the State. For the purpose of this paragraph, State will not unreasonably prohibit Contractor from freely assigning its right to payment, provided that Contractor remains responsible for its obligations hereunder.

8. WAIVER OF RIGHTS:

Any action or inaction by the State or the failure of the State on any occasion, to enforce any right or provision of the Contract, shall not be construed to be a waiver by the State of its rights hereunder and shall not prevent the State from enforcing such provision or right on any future occasion. The rights and remedies of the State herein are cumulative and are in addition to any other rights or remedies that the State may have at law or in equity.

9. ORDER OF PRECEDENCE:

In the event of any inconsistency between the articles, attachments, specifications or provisions which constitute this Contract, the following order of precedence shall apply:

a) Contract form, i.e., Purchase Order, Agreement, etc., and any amendments thereto;

b) Statement of work, including any specifications incorporated by reference herein;

c) These General Provisions – Information Technology Supplemental Terms & Conditions;

d) All other attachments incorporated in the contract by reference.

10. PACKING AND SHIPMENT:

a) All Goods are to be packed in suitable containers for protection in shipment and storage, and in accordance with applicable specifications. Each container of a multiple container shipment shall be identified to:

   i) show the number of the container and the total number of containers in the shipment; and

   ii) the number of the container in which the packing sheet has been enclosed.

b) All shipments by Contractor or its subcontractors must include packing sheets identifying: the State's Contract number; item number; quantity and unit of measure; part number and description of the Goods shipped; and appropriate evidence of inspection, if required. Goods for different Contracts shall be listed on separate packing sheets.

c) Shipments must be made as specified in this Contract, as it may be amended, or otherwise directed in writing by the State's Transportation Management Unit within the Department of General Services, Procurement Division.

11. TRANSPORTATION COSTS AND OTHER FEES OR EXPENSES:

No charge for delivery, drayage, express, parcel post, packing, cartage, insurance, license fees, permits, cost of bonds, or for any other purpose will be paid by the State unless expressly included and itemized in the Contract.

a) Contractor must strictly follow Contract requirements regarding Free on Board (F.O.B.), freight terms and routing instructions. The State may permit use of an alternate carrier at no additional cost to the State with advance written authorization of the Buyer.

b) If "prepay and add" is selected, supporting freight bills are required when over $50, unless an exact freight charge is approved by the Transportation Management Unit within the Department of General Services Procurement Division and a waiver is granted.

c) On "F.O.B. Shipping Point" transactions, should any shipments under the Contract be received by the State in a damaged condition and any related freight loss and damage claims filed against the carrier or carriers be wholly or partially declined by the carrier or carriers with the inference that damage was the result of the act of the shipper such as inadequate packaging or loading or some inherent defect in the Equipment and/or material, Contractor, on request of the State, shall at Contractor's own expense assist the State in establishing carrier liability by supplying evidence that the Equipment and/or material was properly constructed, manufactured, packaged, and secured to withstand normal transportation conditions.

d) The State will not reimburse the Contractor for any Travel or other expenses with the exception of those relevant expenses included in the final, fixed price for this Contract.

12. DELIVERY:

Contractor shall strictly adhere to the delivery and completion schedules specified in this Contract. Time, if stated as a number of days, shall mean business days unless otherwise specified. The quantities specified herein are the only quantities required. If Contractor delivers in excess of the quantities specified herein, the State shall not be required to make any payment for the excess Deliverables, and may return them to Contractor at Contractor's expense or utilize any other rights available to the State at law or in equity.

13. SUBSTITUTIONS:

Substitution of Deliverables may not be tendered without advance written consent of the Buyer. Contractor shall not use any specification in lieu of those contained in the Contract without written consent of the Buyer.

14. INSPECTION, ACCEPTANCE AND REJECTION:

Unless otherwise specified in the Statement of Work:

a) Contractor and its subcontractors will provide and maintain a quality assurance system acceptable to the State covering Deliverables and services under this Contract and will tender to the State only those Deliverables that have been inspected and found to conform to this Contract's requirements. Contractor will keep records evidencing inspections and their result, and will make these records available to the State during Contract performance and for three years after final payment. Contractor shall permit the State to review procedures, practices, processes, and related documents to determine the acceptability of Contractor's quality assurance System or other similar business practices related to performance of the Contract.

b) All Deliverables may be subject to inspection and test by the State or its authorized representatives.

c) Contractor and its subcontractors shall provide all reasonable facilities for the safety and convenience of inspectors at no additional cost to the State. Contractor shall furnish to inspectors all information and data as may be reasonably required to perform their inspection.

d) All Deliverables may be subject to final inspection, test and acceptance by the State at destination, notwithstanding any payment or inspection at source.

15. SAMPLES:

a) Samples of items may be required by the State for inspection and specification testing and must be furnished free of expense to the State. The samples furnished must be identical in all respects to the products bid and/or specified in the Contract.

b) Samples, if not destroyed by tests, may, upon request made at the time the sample is furnished, be returned at Contractor's expense.

16. WARRANTY:

a) Unless otherwise specified in the Statement of Work, the warranties in this subsection a) begin upon acceptance of the Deliverable or service in question and end one (1) year thereafter. Contractor warrants that (i) Deliverables and services furnished hereunder will substantially conform to the requirements of this Contract (including without limitation all descriptions, specifications, and drawings identified in the Statement of Work), and (ii) the Deliverables will be free from material defects in materials and workmanship. Where the parties have agreed to design specifications (such as a Detailed Design Document) and incorporated the same or equivalent in the Statement of Work directly or by reference, Contractor will warrant that its Deliverables provide all material functionality required thereby. In addition to the other warranties set forth herein, where the Contract calls for delivery of Commercial Software, Contractor warrants that such Software will perform in accordance with its license and accompanying Documentation. The State's approval of designs or specifications furnished by Contractor shall not relieve the Contractor of its obligations under this warranty.

b) Contractor warrants that Deliverables furnished hereunder (i) will be free, at the time of delivery, of harmful code (i.e. computer viruses, worms, trap doors, time bombs, disabling code, or any similar malicious mechanism designed to interfere with the intended operation of, or cause damage to, computers, data, or Software); and (ii) will not infringe or violate any U.S. Intellectual Property Right. Without limiting the generality of the foregoing, if the State believes that harmful code may be present in any Commercial Software delivered hereunder, Contractor will, upon the State's request, provide a master copy of the Software for comparison and correction.

c) Unless otherwise specified in the Statement of Work: (i) Contractor does not warrant that any Software provided hereunder is error-free or that it will run without immaterial interruption. (ii) Contractor does not warrant and will have no responsibility for a claim to the extent that it arises directly from (A) a modification made by the State, unless such modification is approved or directed by Contractor, (B) use of Software in combination with or on products other than as specified by Contractor, or (C) misuse by the State. (iii) Where Contractor resells Hardware or Software it purchased from a third party, and such third party offers additional or more advantageous warranties than those set forth

herein, Contractor will pass through any such warranties to the State and will reasonably cooperate in enforcing them. Such warranty pass-through will be supplemental to, and not relieve Contractor from, Contractor's warranty obligations set forth above.

d) All warranties, including special warranties specified elsewhere herein, shall inure to the State, its successors, assigns, customer agencies, and governmental users of the Deliverables or services.

e) Except as may be specifically provided in the Statement of Work or elsewhere in this Contract, for any breach of the warranties provided in this Section, the State's exclusive remedy and Contractor's sole obligation will be limited to: (i) re-performance, repair, or replacement of the nonconforming Deliverable (including without limitation an infringing Deliverable) or service; or (ii) should the State in its sole discretion consent, refund of all amounts paid by the State for the nonconforming Deliverable or service and payment to the State of any additional amounts necessary to equal the State's Cost to Cover.

"Cost to Cover" means the cost, properly mitigated, of procuring Deliverables or services of equivalent capability, function, and performance. The payment obligation in subsection (e)(ii) above will not exceed the limits on Contractor's liability set forth in the Section entitled "Limitation of Liability."

17. SAFETY AND ACCIDENT PREVENTION:

In performing work under this Contract on State premises, Contractor shall conform to any specific safety requirements contained in the Contract or as required by law or regulation. Contractor shall take any additional precautions as the State may reasonably require for safety and accident prevention purposes. Any violation of such rules and requirements, unless promptly corrected, shall be grounds for termination of this Contract in accordance with the default provisions hereof.

18. INSURANCE:

When performing work on property in the care, custody or control of the State, Contractor shall maintain all commercial general liability insurance, workers' compensation insurance and any other insurance the State deems appropriate under the Contract. Contractor shall furnish an insurance certificate evidencing required insurance coverage acceptable to the State. Upon request by the Buyer, the Contractor may be required to have the State shown as an "additional insured" on selected policies. In addition, the Contractor must maintain and Errors and Omissions policy with limits of no less than One Million Dollars ($1,000,000).

19. TERMINATION FOR NON-APPROPRIATION OR AVAILABILITY OF FUNDS:

a) If the term of this Contract extends into fiscal years subsequent to that in which it is approved, such continuation of the Contract is contingent on the appropriation or availability of funds for such purpose. If funds to effect such continued payment are not appropriated or available, Contractor agrees to take back any affected Deliverables furnished under this Contract, terminate any services supplied to the State under this Contract, and relieve the State of any further obligation therefore.

b) STATE AGREES THAT IF PARAGRAPH a) ABOVE IS INVOKED, DELIVERABLES SHALL BE RETURNED TO THE CONTRACTOR IN SUBSTANTIALLY THE SAME CONDITION IN WHICH DELIVERED TO THE STATE, SUBJECT TO NORMAL WEAR AND TEAR. STATE FURTHER AGREES TO PAY FOR PACKING, CRATING, TRANSPORTATION TO CONTRACTOR'S NEAREST FACILITY AND FOR

REIMBURSEMENT TO THE CONTRACTOR FOR EXPENSES INCURRED FOR THEIR ASSISTANCE IN SUCH PACKING AND CRATING.

20. TERMINATION FOR THE CONVENIENCE OF THE STATE:

a) The State may terminate performance of work under this Contract for its convenience in whole or, from time to time, by notice of Termination specifying the extent of termination and the effective date thereof.

b) After receipt of a Notice of Termination, and except as directed by the State, the Contractor shall immediately proceed with the following obligations, as applicable, regardless of any delay in determining or adjusting any amounts due under this clause. The Contractor shall:

   i) Stop work as specified in the Notice of Termination;

   ii) Place no further subcontracts for materials, services, or facilities, except as necessary to complete the continuing portion of the Contract;

   iii) Terminate all subcontracts to the extent they relate to the work terminated;

   iv) Settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; and

   v) Agree to plan transition activities with the State and estimate costs to execute the transition plan.

c) Unless otherwise set forth in the Statement of Work, if the Contractor and the State fail to agree on the amount to be paid because of the termination for convenience, the State will pay the Contractor the following amounts; provided that in no event will total payments exceed the amount payable to the Contractor if the Contract had been fully performed:

   i) The Contract price for Deliverables or services accepted by the State and not previously paid for, adjusted for any savings on freight and other charges; and

   ii) The total of:

      A) The reasonable costs incurred in the performance of the work terminated, including initial costs and preparatory expenses allocable thereto, but excluding any cost attributable to Deliverables or services paid or to be paid;

      B) The reasonable cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the Contract; and

      C) Reasonable storage, transportation, demobilization, unamortized overhead and capital costs, and other costs reasonably incurred by the Contractor in winding down and terminating its work.

d) The Contractor will use generally accepted accounting principles, or accounting principles otherwise agreed to in writing by the parties, and sound business practices in determining all costs claimed, agreed to, or determined under this clause.

21. TERMINATION FOR DEFAULT:

a) The State may, subject to the clause titled “Force Majeure” and to sub-section d) below, by written notice of default to the Contractor, terminate this Contract in whole or in part if the Contractor fails to:

i) Deliver the Deliverables or perform the services to acceptable quality standards as determined by the state within the time specified in the Contract or any amendment thereto;

ii) Make progress, so that the lack of progress endangers performance of this Contract; or

iii) Perform any of the other provisions of this Contract.

iv) Breach of state policies or procedures

b) The State's right to terminate this Contract under sub-section a) above, may be exercised if the failure constitutes a material breach of this Contract and if the Contractor does not cure such failure within the time frame stated in the State's cure notice, which in no event will be less than fifteen (15) days, unless the Statement of Work calls for a shorter period.

c) If the State terminates this Contract in whole or in part pursuant to this Section, it may acquire, under terms and in the manner the Buyer considers appropriate, Deliverables or services similar to those terminated, and the Contractor will be liable to the State for any excess costs for those Deliverables and services, including without limitation costs third party Vendors charge for Manufacturing Materials (but subject to the clause entitled "Limitation of Liability"). However, the Contractor shall continue the work not terminated.

d) If the Contract is terminated for default, the State may require the Contractor to transfer title, or in the case of licensed Software, license, and deliver to the State, as directed by the Buyer, any:

i) completed Deliverables,

ii) partially completed Deliverables, and,

iii) subject to provisions of sub-section e) below, Manufacturing Materials related to the terminated portion of this Contract. Nothing in this sub-section d) will be construed to grant the State rights to Deliverables that it would not have received had this Contract been fully performed. Upon direction of the Buyer, the Contractor shall also protect and preserve property in its possession in which the State has an interest.

e) If, after termination, it is determined by a final ruling in accordance with the Disputes Clause that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the State.

f) The rights and remedies of the State in this clause are in addition to any other rights and remedies provided by law or under this Contract, and are subject to the clause titled "Limitation of Liability."

22. FORCE MAJEURE:

Except for defaults of subcontractors at any tier, the Contractor shall not be liable for any excess costs if the failure to perform the Contract arises from causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include, but are not limited to:

a) Acts of God or of the public enemy, and

b) Acts of the Federal or State government in either its sovereign or contractual capacity. If the failure to perform is caused by the default of a subcontractor at any tier, and if the cause of the default is beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either, the Contractor shall not be liable for any excess

costs for failure to perform, unless the subcontracted Deliverables or services were obtainable from other sources in sufficient time for the Contractor to meet the required delivery schedule.

23. RIGHTS AND REMEDIES OF STATE FOR DEFAULT:

a) In the event any Deliverables furnished or services provided by the Contractor in the performance of the Contract should fail to conform to the requirements herein, or to the sample submitted by the Contractor, the State may reject the same, and it shall become the duty of the Contractor to reclaim and remove the item promptly or to correct the performance of services, without expense to the State, and immediately replace all such rejected items with others conforming to the Contract.

b) In addition to any other rights and remedies the State may have, the State may require Contractor, at Contractor's expense, to ship Deliverables via air freight or expedited routing to avoid or minimize actual or potential delay if the delay is the fault of the Contractor.

c) In the event of the termination of the Contract, either in whole or in part, by reason of default or breach by the Contractor, any loss or damage sustained by the State in procuring any items which the Contractor agreed to supply shall be borne and paid for by the Contractor.

d) The State reserves the right to offset the reasonable cost of all damages caused to the State against any outstanding invoices or amounts owed to Contractor or to make a claim against the Contractor therefore.

24. LIMITATION OF LIABILITY:

a) The limitation of liability shall not apply (i) to liability under the General Provisions, entitled "Patent, Copyright, and Trade Secret Protection" or to any other liability (including without limitation indemnification obligations) for infringement of third party intellectual property rights; (ii) to claims covered by any specific provision herein calling for liquidated damages; (iii) to claims arising under provisions herein calling for indemnification for third party claims against the State for bodily injury to persons or damage to real or tangible personal property caused by Contractor's negligence or willful misconduct; or (iv) to costs or attorney's fees that the State becomes entitled to recover as a prevailing party in any action.

b) The State's liability for damages for any cause whatsoever, and regardless of the form of action, whether in contract or in tort, shall be limited to the Purchase Price, as that term is defined in subsection a) above. Nothing herein shall be construed to waive or limit the State's sovereign immunity or any other immunity from suit provided by law.

25. CONTRACTOR'S LIABILITY FOR INJURY TO PERSONS OR DAMAGE TO PROPERTY:

a) The Contractor shall be liable for damages arising out of injury to the person and/or damage to the property of the State, employees of the State, persons designated by the State for training, or any other person(s) other than agents or employees of the Contractor, designated by the State for any purpose, prior to, during, or subsequent to delivery, installation, acceptance, and use of the Deliverables either at the Contractor's site or at the State's place of business, provided that the injury or damage was caused by the fault or negligence of the Contractor.

b) Contractor shall not be liable for damages arising out of or caused by an alteration or an Attachment not made or installed by the Contractor, or for damage to alterations or Attachments that may result from the normal operation and maintenance of the Deliverables provided by the Contractor during the Contract.

26. INDEMNIFICATION:

Contractor agrees to indemnify, defend and save harmless the State, its officers, agents and employees from any and all third party claims, costs (including without limitation reasonable attorneys' fees), and losses due to the injury or death of any individual, or the loss or damage to any real or tangible personal property, resulting from the willful misconduct or negligent acts or omissions of Contractor or any of its agents, subcontractors, employees, suppliers, laborers, or any other person, firm, or corporation furnishing or supplying work, services, materials, or supplies in connection with the performance of this Contract. Such defense and payment will be conditional upon the following:

a) The State will notify Contractor of any such claim in writing and tender the defense thereof within a reasonable time; and

b) Contractor will have sole control of the defense of any action on such claim and all negotiations for its settlement or compromise; provided that (i) when substantial principles of government or public law are involved, when litigation might create precedent affecting future State operations or liability, or when involvement of the State is otherwise mandated by law, the State may participate in such action at its own expense with respect to attorneys' fees and costs (but not liability); (ii) the State will have the right to approve or disapprove any settlement or compromise, which approval will not unreasonably be withheld or delayed; and (iii) the State will reasonably cooperate in the defense and in any related settlement negotiations.

27. INVOICES:

Unless otherwise specified, invoices shall be sent electronically with signed hard copies to follow to the address set forth in the final contract. Invoices shall be submitted monthly and shall include the Contract number and release order number (if applicable). Vendor will use a template provided BY HEALTH which includes all AHRQ required details, as stipulated in the final contract language.

28. TAXES:

Unless otherwise required by law, the State of Rhode Island is exempt from Federal excise taxes. The State will only pay for any State or local sales or use taxes on the services rendered or Goods supplied to the State pursuant to this Contract.

29. NEWLY MANUFACTURED GOODS:

All Goods furnished under this Contract shall be newly manufactured Goods; used or reconditioned Goods are prohibited, unless otherwise specified.

30. CONTRACT MODIFICATION:

No amendment or variation of the terms of this Contract shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or agreement not incorporated in the Contract is binding on any of the parties.

31. CONFIDENTIALITY OF DATA:

All financial, statistical, personal, technical and other data and information relating to the State's operation which are designated confidential by the State and made available to the

Contractor in order to carry out this Contract, or which become available to the Contractor in carrying out this Contract, shall be protected by the Contractor from unauthorized use and disclosure through the observance of the same or more effective procedural requirements as are applicable to the State. The identification of all such confidential data and information as well as the State's procedural requirements for protection of such data and information from unauthorized use and disclosure shall be provided by the State in writing to the Contractor. If the methods and procedures employed by the Contractor for the protection of the Contractor's data and information are deemed by the State to be adequate for the protection of the State's confidential information, such methods and procedures may be used, with the written consent of the State, to carry out the intent of this paragraph. The Contractor shall not be required under the provisions of this paragraph to keep confidential any data or information which is or becomes publicly available, is already rightfully in the Contractor's possession, is independently developed by the Contractor outside the scope of this Contract, or is rightfully obtained from third parties.

32. NEWS RELEASES:

Unless otherwise exempted, news releases pertaining to this Contract shall not be made without prior written approval of the Office of the CIO and the Rhode Island Department of Health.

33. DOCUMENTATION:

a) The Contractor agrees to provide to the State, at no charge, a number of all nonproprietary manuals and other printed materials, as described within the Statement of Work, and updated versions thereof, which are necessary or useful to the State in its use of the Equipment or Software provided hereunder. Documentation must be sufficient to use, operate, support and integrate the system, satisfactory to the State. The Contractor agrees to provide additional Documentation at prices not in excess of charges made by the Contractor to its other customers for similar Documentation.

b) If the Contractor is unable to perform maintenance or the State desires to perform its own maintenance on Equipment purchased under this Contract then upon written notice by the State the Contractor will provide at Contractor’s then current rates and fees adequate and reasonable assistance including relevant Documentation to allow the State to maintain the Equipment based on Contractor’s methodology. The Contractor agrees that the State may reproduce such Documentation for its own use in maintaining the Equipment.

c) If the Contractor is unable to perform maintenance, the Contractor agrees to license any other Contractor that the State may have hired to maintain the Equipment to use the above noted Documentation. The State agrees to include the Contractor’s copyright notice on any such Documentation reproduced, in accordance with copyright instructions to be provided by the Contractor.

34. RIGHTS IN WORK PRODUCT:

All work will be “work for hire” with all rights to intellectual property inuring to the State. The Contractor agrees to make no claims to the intellectual property created in connection with this Contract.

a) State agrees that all material appropriately marked or identified in writing as proprietary, and furnished hereunder are provided for State’s exclusive use for the purposes of this Contract only. All such proprietary data shall remain the property of the Contractor. State agrees to take all reasonable steps to insure that such proprietary data are not disclosed to others, without prior written consent of the Contractor, subject to the Rhode Island Access to Public Records Act.

b) The State will insure, prior to disposing of any media, that any licensed materials contained thereon have been erased or otherwise destroyed.
c) The State agrees that it will take appropriate action by instruction, agreement or otherwise with its employees or other persons permitted access to licensed software and other proprietary data to satisfy its obligations under this Contract with respect to use, copying, modification, protection and security of proprietary software and other proprietary data.

35. PATENT, COPYRIGHT AND TRADE SECRET INDEMNITY:

a) Contractor will indemnify, defend, and save harmless the State, its officers, agents, and employees, from any and all third party claims, costs (including without limitation reasonable attorneys' fees), and losses for infringement or violation of any U.S. Intellectual Property Right by any product or service provided hereunder. With respect to claims arising from computer Hardware or Software manufactured by a third party and sold by Contractor as a reseller, Contractor will pass through to the State such indemnity rights as it receives from such third party ("Third Party Obligation") and will cooperate in enforcing them; provided that if the third party manufacturer fails to honor the Third Party Obligation, Contractor will provide the State with indemnity protection equal to that called for by the Third Party Obligation, but in no event greater than that called for in the first sentence of this Section 39a). The provisions of the preceding sentence apply only to third party computer Hardware or Software sold as a distinct unit and accepted by the State. *Unless* a Third Party Obligation provides otherwise, the defense and payment obligations set forth in this Section 39a) will be conditional upon the following:
   i) The State will notify Contractor of any such claim in writing and tender the defense thereof within a reasonable time; and
   ii) Contractor will have sole control of the defense of any action on such claim and all negotiations for its settlement or compromise; provided that (i) when substantial principles of government or public law are involved, when litigation might create precedent affecting future State operations or liability, or when involvement of the State is otherwise mandated by law, the State may participate in such action at its own expense with respect to attorneys' fees and costs (but not liability); (ii) the State will have the right to approve or disapprove any settlement or compromise, which approval will not unreasonably be withheld or delayed; and
   iii) The State will reasonably cooperate in the defense and in any related settlement negotiations.

b) Contractor may be required to furnish a bond to the State against any and all loss, damage, costs, expenses, claims and liability for patent, copyright and trade secret infringement.

c) Should the Deliverables or Software, or the operation thereof, become, or in the Contractor's opinion are likely to become, the subject of a claim of infringement or violation of a U.S. Intellectual Property Right, the State shall permit the Contractor at its option and expense either to procure for the State the right to continue using the Deliverables or Software, or to replace or modify the same so that they become non-infringing. If none of these options can reasonably be taken, or if the use of such Deliverables or Software by the State shall be prevented by injunction, the Contractor agrees to take back such Deliverables or Software and make every reasonable effort to assist the State in procuring substitute Deliverables or Software. If, in the sole opinion of the State, the return of such infringing Deliverables or Software makes the retention of other Deliverables or Software acquired from the Contractor under this Contract impractical, the State shall then have the option of terminating such Contracts, or applicable portions thereof, without penalty or termination charge. The Contractor agrees to take back such Deliverables or Software and

refund any sums the State has paid Contractor less any reasonable amount for use or damage.

d) The Contractor shall have no liability to the State under any provision of this clause with respect to any claim of patent, copyright or trade secret infringement which is based upon:
   i) The combination or utilization of Deliverables furnished hereunder with Equipment or devices not made or furnished by the Contractor; or,
   ii) The operation of Equipment furnished by the Contractor under the control of any Operating Software other than, or in addition to, the current version of Contractor-supplied Operating Software; or
   iii) The modification by the State of the Equipment furnished hereunder or of the Software; or
   iv) The combination or utilization of Software furnished hereunder with non-contractor supplied Software.

e) Contractor certifies that it has appropriate systems and controls in place to ensure that State funds will not be used in the performance of this Contract for the acquisition, operation or maintenance of computer Software in violation of copyright laws.

36. EXAMINATION AND AUDIT:

Contractor agrees that the State, or its designated representative shall have the right to review and copy any records and supporting Documentation pertaining to performance of this Contract. Contractor agrees to maintain such records for possible audit for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees or others who might reasonably have information related to such records. Further, Contractor agrees to include a similar right of the State to audit records and interview staff in any subcontract related to performance of this Contract.

37. STOP WORK:

a) The State may, at any time, by written Stop Work Order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this Contract for a period up to 90 days after the Stop Work Order is delivered to the Contractor, and for any further period to which the parties may agree. The Stop Work Order shall be specifically identified as such and shall indicate it is issued under this clause. Upon receipt of the Stop Work Order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the Stop Work Order during the period of work stoppage. Within a period of 90 days after a Stop Work Order is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the State shall either:
   (i) Cancel the Stop Work Order; or
   (ii) Terminate the work covered by the Stop Work Order as provided for in the termination for default or the termination for convenience clause of this Contract.

b) If a Stop Work Order issued under this clause is canceled or the period of the Stop Work Order or any extension thereof expires, the Contractor shall resume work. The State shall make an equitable adjustment in the delivery schedule, the Contract price, or both, and the Contract shall be modified, in writing, accordingly, if:
   i) The Stop Work Order results in an increase in the time required for, or in the Contractor's cost properly allocable to the performance of any part of this Contract; and
   ii) The Contractor asserts its right to an equitable adjustment within 30 days after the end of the period of work stoppage; provided, that if the State decides the facts

justify the action, the State may receive and act upon a proposal submitted at any time before final payment under this Contract.

c) If a Stop Work Order is not canceled and the work covered by the Stop Work Order is terminated in accordance with the provision entitled Termination for the Convenience of the State, the State shall allow reasonable costs resulting from the Stop Work Order in arriving at the termination settlement.

d) The State shall not be liable to the Contractor for loss of profits because of a Stop Work Order issued under this clause.

38. COVENANT AGAINST GRATUITIES:

The Contractor warrants that no gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the Contractor, or any agent or representative of the Contractor, to any officer or employee of the State with a view toward securing the Contract or securing favorable treatment with respect to any determinations concerning the performance of the Contract. For breach or violation of this warranty, the State shall have the right to terminate the Contract, either in whole or in part, and any loss or damage sustained by the State in procuring on the open market any items which Contractor agreed to supply shall be borne and paid for by the Contractor. The rights and remedies of the State provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or in equity.

39. FOUR-DIGIT DATE COMPLIANCE:

Contractor warrants that it will provide only Four-Digit Date Compliant (as defined below) Deliverables and/or services to the State. “Four Digit Date Compliant” Deliverables and services can accurately process, calculate, compare, and sequence date data, including without limitation date data arising out of or relating to leap years and changes in centuries. This warranty and representation is subject to the warranty terms and conditions of this Contract and does not limit the generality of warranty obligations set forth elsewhere herein.

40. AMERICANS WITH DISABILITIES ACT: Contractor assures the State that Contractor complies with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq).

41. GOVERNANCE:

Contractor acknowledges that this engagement is though the Rhode Island Department of Health (HEALTH), in collaboration with the Office of the State Chief Information Officer (CIO),

42. ADDITIONAL INFORMATION

The State has the right to require the Contractor to provide additional and periodic information at any time to demonstrate the continued financial responsibility of the Contractor.

43. NAMED INDIVIDUALS ONLY

All work will be performed only by the specific employees named by the Contractor in the Purchase Order Release. The Contractor will not use any other employee, independent contractor, company or subcontractor without the prior written consent of HEALTH in collaboration with the state CIO and the Division of Purchasing. Any breach of this condition will be cause for default, with the state reserving the right to cancel the Purchase Order. Any waiver of this condition allowing for substitution must be done in writing.

44. BACKGROUND CHECKS

The State reserves the right, in its absolute discretion, to conduct criminal and civil background checks prior to or during the term of this Contract.

45. DRUG TESTS

The State reserves the right, in its absolute discretion, to conduct drug test(s) on individuals prior to or during the term of this Contract.

46. INDIVIDUAL DELIVERABLES:

The State reserves the right, in its absolute discretion, to accept or reject individual deliverables, with an obligation to pay only for those deliverables accepted. The State may agree, in its absolute discretion, to pay a prorated amount of the deliverable price based on a percentage completion of the deliverables.

47. CHANGE IN PRICE OF DELIVERABLES:

Any change in the price for any deliverable must receive the prior written approval of the HEALTH Project Director in collaboration with the state CIO, or her designee and the Division of Purchasing.

48. CHANGES IN PERSONNEL:

Contractor will be responsible, and will reimburse the State, for all costs associated with unplanned turnover including, but not limited to briefing and training any new consultants hired by the Contractor after the issuance of the Purchase Order. Unless the parties agree otherwise, the Contractor will pay one (1) week cost reimbursement for each month of completed work under the Contract.

49. MODIFICATIONS TO TERMS, CONDITIONS, POLICIES ETC:

The Terms, Conditions, Policies and Procedures may be changed during the period of this Contract, provided fifteen (15) days prior written notice is provided to the Contractor. Posting on the Information Technology Divisions website shall constitute permissible notice under this section.

50. WAIVER OF NON-COMPETITION AND RELATED AGREEEMENTS.

The Contractor agrees that the State may hire any employee, consultant or independent contractor of the Contractor after the employee, consultant or independent contractor has performed services for the State for period of eighteen (18) months (of 100 hours or more / month) or greater without the payment of any referral fee or other compensation to the Contractor. The Contractor agrees not to enforce any non-competition or related agreements to which the employee, consultant or independent contractor is a party and waives any and all claims against the State. If the employee, consultant or independent contractor performed services for the State for a period of less than eighteen (18) months then a referral fee or alternate form of compensation will be negotiated in good faith, not to exceed fifteen percent (15%) of the first year state salary of the employee.

APPENDIX F.

GLOSSARY OF TERMS

Glossary of Terms

a. **24x7x365**: A statement of availability of systems, communications, and/or supporting resources every hour (24) of each day (7 days weekly) throughout every year for periods specified herein. Where reasonable downtime is accepted, it will be stated herein. Otherwise, 24x7x365 implies NO loss of availability of systems, communications, and/or supporting resources.

b. **AIDS**: Acquired Immune Deficiency Syndrome

c. **API**: Application Programming Interface. Historically, "application programming interface". Practically, an API is any interface that enables one program to use facilities provided by another, whether by calling that program, or by being called by it. At a higher level still, an API is a set of functionality delivered by a programming system, and as such the mix of APIs in a particular system tells you what that system can do.

d. **ATM**: Acceptance Traceability Matrix: A broad scope matrix of anticipated user acceptance testing deliverables per defined function.

e. **BAFO**: Best and final offer.

f. **BT**: Bioterrorism.

g. **CDC**: Centers for Disease Control and Prevention

h. **CDC PHIN**: CDC's Public Health Information Network

i. **CIO**: Chief Information Officer

j. **Contract Award**: The effective date as stated in the Notice of Award

k. **COTS**: Commercial Off-The-Shelf product

l. **COTS with Customization**: A Commercial Off-The-Shelf product which is modified per the request(s) of a customer. The owner (Vendor) of the COTS product modifies the base code and maintains the modifications in all future releases.

m. **CSO**: Chief Security Officer

n. **Customization**: Adapting an existing product so it can meet additional or new requirements. Customization requires coded modifications to the behavior of a system while configuration is administratively defined within the application using off the shelf tools and interfaces. Configurations are supported through upgrade paths, customizations often are not. Vendors should be identifying those items that would require customization vs. configuration. It should be noted that anything which would be built as an external service, but invoked by a COTS using out of the box interfaces, would be considered configurations provided the interfaces are stable between releases.

o. **Data Conversion**: The migration of data from an existing application to a new application. May include but is not limited to data uploads from the legacy database, data editing, data cleanup, encoded data translation type processes, data formatting into files for loading into the new database, verification of the integrity and completeness of the converted data, running legacy data through the new system as a transaction using robotic tools, and data loading into the new database.

p. **Deliverable**: Any measurable, tangible, verifiable outcome, result, or item that shall be produced to complete a project or part of a project.

q. **DOA**: Rhode Island Department of Administration.

r. **Division of Purchases**: The Division of Purchases, a division of DOA, is responsible for the purchase of all goods and services required by the State, with some exceptions. The

Division of Purchases requires competitive bidding wherever practical. See http://www.purchasing.state.ri.us/.

s. **DSP**: Data sharing partners in the HIE System.

t. **Evaluation Team**: Team of State of Rhode Island employees tasked with the review and evaluation of Vendor responses to public solicitations. Evaluation Team responsibilities include, but are not limited to: proposal evaluations, participation in pre-bid Vendor meetings and demonstrations, and review of Vendor-proposed solutions. Additional business and technical personnel working for the State of Rhode Island or other stakeholders will provide support for these activities as requested by the Evaluation Team. Selection of finalists will be performed by Rhode Island State Agency employees, considering the input from Evaluation Team advisors.

u. **Functions**: System features for which the Vendor provides clearly defined solutions and affiliated fixed bid prices and costs.

v. **Goods**: Includes intangibles such as computer software; provided, however that this definition does not modify the definition of “goods” in the context of UCC definition of goods.

w. **GOTS**: Government Off-the-Shelf product.

x. **HIE System**. The statewide Health Information Exchange System in Rhode Island.

y. **HIPAA**: Health Insurance Portability and Accountability Act.

z. **HIV**: Human Immunodeficiency Virus.

aa. **Implementation**: Typically, the rollout of a large and/or complex computer application is put into service over the course of multiple implementation phases, with each subsequent implementation phase building on to that functionality which is already in production use.

bb. **HEALTH**: Rhode Island Department of Health.

cc. **LOINC**: Laboratory Observation Identifiers, Names and Codes.

dd. **MPI**: Master Person Index.

ee. **Open Standards.** Publicly available specifications for achieving a specific task. By allowing anyone to obtain and implement the standard, they can increase compatibility between various hardware and software components, since anyone with the necessary technical know-how and resources can build products that work together with those of the other vendors that base their designs on the standard (although patent holders may impose "reasonable and non-discriminatory" royalty fees and other licensing terms on implementers of the standard.)

ff. **Phase**: A collection of logically related project activities, usually culminating in the completion of a milestone or deliverable. In some specific instances, “phase” may apply to activity distinctions in phase-based cycles such as in the Software Development Life Cycle.

gg. **Pilot**: A preliminary “live” release of a software application(s) or system made to a limited number of users to ensure the application(s) function as required prior to general implementation at all sites.

hh. **PHIN**: Public Health Information Network

ii. **Prime Vendor**: In a multi-Vendor contract, the Prime Vendor is the company that assumes complete responsibility for overall performance of a contract. The Prime Vendor roles and responsibilities include, but are not limited to, single point accountability and responsibility for all contract activities, regardless of which Vendor on the contract performs those activities. The Prime Vendor is also responsible for

presenting one invoice to the State that is inclusive of all Vendors' deliverables. The State makes payments to the Prime Vendor only. The respondent to this RFP will be considered the Prime Vendor and will assume total responsibility for meeting all terms and conditions of the contract, including standards of service, quality of materials and workmanship, and costs and schedules.

jj. **Project Management**: The application of knowledge, skills, tools, and techniques to project activities, including project planning, tracking, and oversight to ensure project and contractual requirements are met.

kk. **Prototype**: Development of a test machine, circuit or program which is designed for demonstration purposes. It also enables the testing of the new product's design before the product is put into production. Problems or deficiencies in the product's design can be discovered and corrected. When the prototype is sufficiently refined and meets the functionality, robustness and other design goals, the product is ready for production.

ll. **Quality Assurance**: A review activity conducted by individuals that are separate from a project team that provides management with objective information on the process being used by the project team and the deliverables being produced.

mm. **Quality Control**: The process used by the Vendor to ensure the quality, integrity, and performance of all deliverables prior to their delivery to the State.

nn. **Release**: The creation and availability of a new version of a computer system or software product. For this procurement, "release" refers to a version of the system with defined functionality for use in a "live" environment, either pilot or production.

oo. **Reasonable, Necessary, or Proper**: as used herein shall be interpreted solely by the State of Rhode Island.

pp. **Regression Testing**. The selective retesting of a software system that has been modified to ensure that any bugs have been fixed and that no other previously working functions have failed as a result of the reparations and that newly added features have not created problems with previous versions of the software. Also referred to as *verification testing*, regression testing is initiated after a programmer has attempted to fix a recognized problem or has added source code to a program that may have inadvertently introduced errors. It is a quality control measure to ensure that the newly modified code still complies with its specified requirements and that unmodified code has not been affected by the maintenance activity.

qq. **Requirements**: System functions and operating parameters that are related to the organization's goals and business opportunities.

rr. **RI HIE Project Steering Committee**. Committee comprised of HEALTH and community representatives that oversee all facets of the planning and development of a statewide HIE. Committee is responsible for making recommendations for specific project activities, identifying and resolving issues and providing guidance in mitigating risks.

ss. **RFP**: Request for Proposal.

tt. **RTM**: Requirements Traceability Matrix.

uu. **SAN**: Storage Area Network.

vv. **SDLC**: System Development Life Cycle

ww. **Section 508**: In 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to people with disabilities. Inaccessible technology interferes with an individual's ability to obtain and use information quickly and easily. Section 508 was enacted to eliminate barriers in

information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508 (29 U.S.C. 794d), agencies shall give disabled employees and members of the public access to information that is comparable to the access available to others. Section 508 requires the Architectural and Transportation Barriers Compliance Board (Access Board) to publish standards setting forth a definition of electronic and information technology and the technical and functional performance criteria necessary for accessibility for such technology.

xx. **Security:** Security includes many applicable principles and terms. Basic definitions include:

Information Security: The protection of information systems against unauthorized access to or modification of information, whether in storage, processing or transit, and against the denial of service to authorized users or the provision of service to unauthorized users, including those measures necessary to detect, document, and counter such threats., and

Computer Security: Computer security is the effort to create a secure computing platform, designed so that agents (users or programs) cannot perform actions that they are not allowed to perform, but can perform the actions that they are allowed to. This involves specifying and implementing a security policy. The actions in question can be reduced to operations of access, modification and deletion. Computer security can be seen as a subfield of security engineering, which looks at broader security issues in addition to computer security.

yy. **SLA(s)**: Service Level Agreement(s). Formal, written agreement(s) between two or more parties for any hardware, software, operating system software, disaster backup and recovery processes, performance and system support monitoring, error recovery, disk storage management, system software and hardware upgrades, capacity planning, preventive system maintenance, help desk, communications network, problem management, and status reporting and daily system support.

zz. **SNOMED**: Systematized Nomenclature of Human Medicine – a multi-axial nomenclature for indexing medical records.

aaa. **SQAP**: Software Quality Assurance Plan. For the purposes of this RFP, the SQAP should be guided by IEEE Standard 730-2002.

bbb. **State**: The state of Rhode Island and its government agencies.

ccc. **Subcontractor**: A Vendor working in partnership with the Prime Vendor and participating in the contract deliverables. The Prime Vendor is responsible for the actions and quality of workmanship of the subcontractor(s). Any dispute arising between the Prime Vendor and its subcontractor or between subcontractors shall be resolved by the Prime Vendor without involvement of any kind on the part of the State of Rhode Island and without impact on the delivery of the contracted goods and services.

ddd. **TCO**: Total Cost of Ownership / Total Cost of Operation. TCO analysis includes calculations on extended costs for any system purchase - these are called *fully burdened costs*. For the business purchase of an information system, the fully burdened cost may include costs of purchase, repairs, maintenance, upgrades, service and support, networking, security, user training, and software licensing. TCO is also referred to as IT asset Life Cycle Costing (LCC).

eee. **Test Plan**: A document that provides a detailed approach and schedule for verifying that the implemented functionality of a system/software application meets the defined

requirements. Test Plans are required for all HIE System Releases. Each test identified in the plan shall map to a requirement in the HIE Requirements Table (Appendix B) to ensure complete requirements satisfaction. One test may include satisfaction of several RFP requirements. A Requirements (Acceptance) Traceability Matrix shall be included as part of the plan.

fff. **Transition**: 1. The state of moving from one environment to another. 2. The transfer of knowledge from one person or team to another. 3. The incremental elimination of components of a system used during a phased implementation that are not required after full implementation.

ggg. **TSG**. The RI HIE Project's Technical Solutions Group.

hhh. **UAT**: User Acceptance Testing. User Acceptance Testing is one of the final stages of a software project and is performed before a new system is implemented into production. Users of the system are actively involved in this phase of testing.

iii. **Vendor, Bidder, Contractor, or Offeror**: Prime company, firm, corporation, partnership, individual, etc., submitting a response to this solicitation.

jjj. **Vendor Team**: The staff provided by the Vendor to meet the obligations of the contract. This team may consist of personnel from the Prime Vendor and any of the sub Vendors. The Prime Vendor is responsible for the performance of all members of the Vendor team.

kkk. **WCAG**: Web Content Accessibility Guidelines. (See W3C.)

lll. **W3C**: World Wide Web Consortium: The World Wide Web Consortium (W3C) develops interoperable technologies (specifications, guidelines, software, and tools) to lead the Web to its full potential. W3C is a forum for information, commerce, communication, and collective understanding. The W3C has many initiatives including the Web Accessibility Initiative (WAI). WAI, in coordination with organizations around the world, pursues accessibility of the Web through five primary areas of work: technology, guidelines, tools, education and outreach, and research and development. The WAI published the first Web Content Accessibility Guidelines (WCAG 1.0) in 1999. These are the current established guidelines and the ones referred to in this RFP. Although Web Content Accessibility Guidelines version 2.0 is available as a working draft, it in no way supersedes WCAG 1.0