Request for Proposals

Electronic Health Record System

April 2005

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I. Background

The Massachusetts eHealth Collaborative ("the Collaborative," www.maehc.org) is a newly launched, not-for-profit entity, which brings together more than three dozen Massachusetts organizations representing the Commonwealth's key health care stakeholders. The mission of the Collaborative is to improve the quality, safety, and efficiency of health care delivery in Massachusetts by promoting widespread and sustained use of electronic health records (EHRs) across the State.

The Collaborative has identified three communities to participate in a pilot project. This pilot project will provide funding and support to healthcare providers in each community for adoption of office-based electronic health records with embedded decision support. The pilot project will also provide support to hospitals implementing computerized provider order entry (CPOE) systems with the level of support determined by the individual circumstances of each participating hospital. The Collaborative will also support the development of clinical data exchange capabilities among each community's physicians, hospitals, and other healthcare service providers including laboratories and imaging centers.

The Collaborative will provide assistance to each community in the pilot project. This assistance will include guidance in vendor selection, minimum functional requirements and interoperability standards, assistance in contract negotiation (e.g. with laboratory vendors, electronic health record vendors), assistance in addressing privacy and security issues, and other forms of assistance to assure the successful implementation of interoperable health care information systems.

The goal of the pilot project is to assess the costs and benefits of community-wide EHR adoption from a number of perspectives: quality and safety of patient care; physician, nurse and support staff satisfaction; protection of privacy and confidentiality; and barriers to adoption both within and across institutions and office practices. Ultimately, the pilot communities will serve to develop operational and financing models that will foster and sustain statewide adoption and continued use and improvement of such technologies and capabilities.

This Request for Proposals (RFP) has been developed to identify ambulatory electronic health records solutions (EHRs) for the pilot communities. Vendors who have developed robust electronic health records systems for physician practices are encouraged to reply. Section II of this RFP details the requirements for proposals.

II. Proposal Instructions

Letter of Intent. The Collaborative asks that all vendors email the Letter of Intent (see Appendix A) declaring their intention. The e-mail should be sent to rfp@maehc.org by April 15, 2005, 5:00 P.M. Eastern Standard Time.

Inquiries. We encourage inquiries regarding this RFP and welcome the opportunity to answer questions from potential applicants. Please direct your questions to rfp@maehc.org

Informational Teleconferences. MAeHC will conduct two 1-hour informational teleconferences to answer questions about this RFP from interested vendors. During the teleconferences, Collaborative representatives will answer those questions submitted by email prior to the conference call initially and only if time permits will open the conversation up for additional questions. FAQs from the calls will be posted on the web site.

The first call is scheduled for April 13, 2005, 12:00 Noon EST. Questions for this call must be submitted to rfp@maehc.org by April 10, 2005, 5:00 P.M.EST. Dial-in information will be made available on the Collaborative's website www.maehc.org two days prior. If needed, a second call will take place on April 20, 2005, 12:00 Noon EST. Questions for this call must be submitted to rfp@maehc.org by April 17, 2005, 5:00 P.M. EST. Again, dial-in information will be made available on the Collaborative's website, www.maehc.org two days prior to the call.

Proposal Deadline. Interested vendors must submit an electronic copy of their proposed solution to rfp@maehc.org by **April 28, 2005, 5:00 P.M. Eastern Standard Time**. Submissions will be confirmed by reply email. Late proposals will not be evaluated.

Proposal Process. Section III of this RFP provides descriptive information on the pilot communities including the number of physicians. Sections IV through XI detail the requirements of the proposal. Please review each of these sections carefully and respond as directed. *False answers will be considered grounds for dismissal of proposal.*

Each Section includes a page length limit. The Collaborative will enforce this limit to ensure that it can complete its evaluation in a timely manner. These page length limits are based on a 8 ½ by 11 inch page with 1 inch margins and single-spaced 11 point Arial font. Vendors who wish to send additional materials as appendices are welcome to do so, but these materials will not be considered in the evaluation process.

Evaluation. The Collaborative will convene a working group to review the proposals received in response to this RFP. During this review process, additional information may be required of the vendors and some vendors may be invited to present and demonstrate their EHR products.

Vendors are discouraged from soliciting physicians or Pilot Communities until a decision is rendered from the MAeHC and at that point contact with physicians should be coordinated through the Collaborative and/or a Community representative and not to the physicians directly.

The Collaborative anticipates completing this evaluation process and identifying its preferred EHR system(s) before the end of May 2005. MAeHC expects to publish the evaluation criteria used for vendor selection. Selected vendors will be publicly acknowledged. The Collaborative will contract with the selected vendors and expects that these agreements will reflect the terms listed in Appendix C.

Timeline:

RFP Released	April 4, 2005
First Informational Teleconference	April 13, 2005, 12:00 Noon, Eastern Time
Email Letter of Intent	April 15, 2005, 5:00 P.M., Eastern Time
Second Informational Teleconference (if needed)	April 20, 2005, 12:00 Noon, Eastern Time
Proposal Deadline	April 28, 2005, 5:00 P.M., Eastern Time
Notification of Selected Vendors	May 23, 2005

III. Identification of Pilot User Population

Three Massachusetts communities have been selected to participate in the MAeHC pilot project. Each community is centered around one or two acute-care hospitals and includes many different aspects of the community's health care delivery system. They were selected based on a number of criteria which included having a substantial portion of their residents' health care delivered in that community, a strong history of community collaboration and leadership as well as their potential to provide clear, valuable lessons on how EHRs can be effectively implemented to improve the quality, efficiency, interoperability, and safety of care in the diversity of health settings that characterizes Massachusetts.

Community Profiles

Community	Population (2000 Census)	Hospital System	# PCP	# Specialist	# Patients[1]
Greater Brockton	94,304	Brockton Hospital and Good Samaritan Medical Center	118	275	350,000
Greater Newburyport	65,847	Anna Jaques Hospital	38	78	95,000
Northern Berkshire	134,953[2]	North Adams Regional Medical Center	26	57	42,850

[1] Number of patients may include residents of surrounding communities in which case patients can exceed stated population numbers.
[2] Population for all of Berkshire County

The physician office practices in these communities range in size and complexity. There are a few large group practices with 11 or more physicians. These practices typically have multiple locations, an existing wide area network, a practice management professional and some IT resources. These larger groups may use a reference lab or radiology service, but they are also likely to offer their own ancillary services. There are also a number of medium sized practices with 6-10 physicians. They generally have a single location, and a local area network, but they are unlikely to have practice management or IT resources on staff. These practices use hospital and commercial reference labs and hospital-based radiology services for diagnostic testing. Lastly, there are a larger number of small offices with 1-5 physicians. These groups may use a billing service or have a PC-based billing solution. These practices use hospital and commercial reference labs and hospital-based radiology services for diagnostic testing.

Physician Office Practice Profiles

Community	Small (1-5)	Medium (6-10)	Large (11+)	Total Offices
Greater Brockton	102	13	10	125
Greater Newburyport	35	7	0	42
Northern Berkshire	20	0	2	22

IV. Corporate Background

Each vendor proposal must provide a statement of the vendor's background including years in business, staffing, financial status, and a profile of current customers. This statement should not exceed **2 pages**. In addition to this statement, please attach your corporation's most recent financial statement and complete the worksheet below.

Company Information

Company Name			
Address			
Telephone			
URL			
# of years in business			
# of years in EHR business			
# of total EHR employees	Within MA:	Outside of MA:	
# of EHR employees in sales and marketing	Within MA:	Outside of MA:	
# of EHR employees in product development	Within MA:	Outside of MA:	
# of EHR employees in implementation/ training	Within MA:	Outside of MA:	
# of EHR employees in product support	Within MA:	Outside of MA:	
# of EHR employees in administrative roles	Within MA:	Outside of MA:	
# of new EHR installations over last three years	2002:	2003:	2004:
# of new EHR users over last three years	2002:	2003:	2004:
# of total EHR installations by practice size	Small (1-4 physicians):	Medium (5-10 physicians):	Large (10+ physicians):
# of total EHR installations			
# of MA EHR installations			
# of MA EHR users			
Current financial, business or other relationships within MAeHC Pilot Communities			
Company Contacts	**Name**	**Phone**	**Email**
Business Contact:			
Technical Contact:			

Financial Information

Public: yes / no	Symbol:
Private: yes / no	Investors:
Total Annual Revenue:	
Revenue from EHR products or services:	
EHR Revenue per EHR employee:	
Revenue from other products or services:	

Cash:	
Net Income:	
Net Margin %:	
Total Assets:	
Total Liabilities:	
% of EHRRevenue spent on R&D:	

Massachusetts Installations

Type of Organization	**List 2 Organizations**	**Products Installed** (EHR, CPOE, eRX, CDS, Other)
Community Hospitals		
Tertiary Hospitals		
Community Health Centers		
Large Group Practices (10+ physicians)		
Small/Solo Practices		

Client References

Please supply a minimum of 3 client references. If possible, the client list should encompass different market segments (i.e.: one hospital, one medical group).

Client 1	Organization Name:	
	Contact Name & Title:	
	Contact Telephone:	
	Product(s) Installed:	
Client 2	Organization Name:	
	Contact Name & Title:	
	Contact Telephone:	
	Product(s) Installed:	
Client 3	Organization Name:	
	Contact Name & Title:	
	Contact Telephone:	
	Product(s) Installed:	
Client 4	Organization Name:	
	Contact Name & Title:	
	Contact Telephone:	
	Product(s) Installed:	
Client 5	Organization Name:	
	Contact Name & Title:	
	Contact Telephone:	
	Product(s) Installed:	
Client 6	Organization Name:	
	Contact Name & Title:	
	Contact Telephone:	
	Product(s) Installed:	

V. Product Information

Each proposal must include a statement describing the vendor's health care software products, new products in development with delivery dates, targeted health care markets, and software development process (e.g., how new features are prioritized and introduced into products.) This statement should not exceed **4 pages** and must include the worksheet and questions that follow:

Current Product Offering

Product Category	Product name & version	Description
EHR: Electronic Health Record		
PMS: Practice management system		
CPOE: Computerized Physician Order Entry		
eRx: Electronic Prescribing		
CDS: Clinical Decision Support		
CDE: Clinical Data Exchange		
Other:		

Products in Development

Please provide a brief description of products in development as they relate to EHR, CPOE, CDS, and CDE. Include target release dates (quarter/year) for each product.

Product Name	Brief Description	Target Release

Product Development

1. Describe your process for collecting input for EHR product improvement?

2. Describe the end-user tools available in your EHR product that providers can use to customize the software (e.g., create new alerts, reminders).

3. Describe your product release process (release schedule, communication, training, etc).

4. Describe the current planned enhancements to your EHR product. What is your EHR product development strategy for the next 6 months? 1 year? 18 months?

5. What percentage of your total annual revenue do you anticipate spending on EHR product research and development in 2005? 2006?

6. Describe your understanding of CCHIT (The Certification Commission for Healthcare Information Technology) and how your organization will participate in the national certification process.

7. How does your EHR's technical architecture enable integration of 3rd party software?

8. Describe any current 3rd party connectivity/integration with your EHR (e.g., formulary and prescribing services, practice management systems, decision support providers, laboratory systems, CPOE, Scheduling systems)

9. Describe any future plans for strategic partnerships that involve your EHR product.

VI. Software Requirements

Each vendor proposal must provide a description of the proposed EHR solution. This description should not exceed **2 pages**.

In addition to this description, please complete the EHR Functional Checklist found in Appendix B of this RFP. This Checklist is adapted from the HL7 EHR Draft Standard for Trial Use (Copyright © July 2004). For each item on the Checklist (excluding the category headings which are shaded either gray or blue), please provide one of the following acceptable responses:

5 = **Completely** meets requirement today.

4 = **Partially meets** requirement today.

3 = **Will completely meet** requirement in future (specify date in comments).

2 = **Will partially meet** requirement in future (specify required change and date in comments).

1 = Can meet requirement through a **customization** (specify price in comments).

0 = **Not planning to offer.**

VII. Technical Requirements

Each vendor proposal must provide a description of the technology used to develop and deploy your EHR solution in an office practice. This description must detail

- The underlying hardware and networking infrastructure to support the EHR solution
- The application software architecture and, for each element of the application (e.g., database, user interface, etc.), the technologies and versions used in the product's construction.
- External transactional services architecture (e.g., RxHub)
- Application Service Provider based solutions
- Any other technologies required for a successful installation

This description should not exceed **2 pages**. An additional page may be added if a diagram of the network topology or software architecture is included. In addition, the vendor must complete the worksheet below.

Hardware and Operating System Platform

	Briefly describe
Server (e.g., Intel, RISC)	
Operating Systems (e.g., Windows, UNIX)	
Networking (e.g., TCP/IP)	
Wireless Network Support?	
Bandwidth Requirement	
Internet Connectivity Requirement	
ASP Option? If yes, please describe.	

Software Application

	Briefly describe
Database (e.g., Oracle, SQL)	
Application Software (e.g., VB, Cache)	
Client Software (e.g., VB, HTML, Java)	

Client Devices Supported

Client Devices	YES - Briefly describe including version	NO
PC / Windows		
Mac		
Unix		
Linux		
Palm Pilot		
Blackberry		
Pocket PC		
Tablet PC		
Other		

VIII. Integration and Interface Requirements

The Collaborative's success will require the movement of patient data within and among the health care providers in each participating pilot community. This data movement will require shared standards for clinical and quality data exchange. While some of these exchange capabilities will be required immediately, others will be demanded as the Commonwealth's healthcare information infrastructure develops.

It is anticipated that the Commonwealth's clinical data exchange will develop around a regional master patient index that stores a list of each site of care that contains a patient's clinical information. This centralized index will greatly simplify the process of locating and retrieving clinical data about a given patient and will serve as a record locator service. In this model, data will be transported over the Internet using standard secure socket layer protocols and will use SOAP/XML envelopes as part of the transport of clinical data wherever possible.

Each vendor proposal must provide a **2-page** description of the proposed solution's ability to integrate with and interface to other systems. This description must detail:

- Standard integration approach including the number of existing client installations using this standard
- A list of current practice management system interfaces along with a description of the points of integration (e.g., scheduling). Please list specific products and vendors.
- Plans for integration enhancements including specific versions and timeframes
- Ability and/or plans to offer a service-oriented data exchange architecture including the number of existing client installations using these services

In addition, please complete the two checklists that follow. The only acceptable responses for the checklists are:

5 = **completely** meets requirement today.
4 = **partially meets** requirement today.
3 = **Will completely meet** requirement in future (specify date in comments).
2 = **Will partially meet** requirement in future (specify required change and date in comments).
1 = Can meet requirement through a **customization** (specify price in comments).
0 = **Not planning to offer.**

Integration Checklist			
Provider needs		**Vendor response**	
Functional needs		**Response (0 thru 5)**	**Comments**
Practice Management System (Including patient registration, billing and scheduling)	Integrate patient demographics data from the Practice Management System/Hospital Information System into the EHR		
	Integrate appointment scheduling data from the Practice Management System/Hospital Information System into the EHR		
	Integrate encounter data (including procedures and diagnoses) from the EHR to the Practice Management System/Hospital Information System for billing purposes		

Integration Checklist			
Provider needs		**Vendor response**	
Functional needs		**Response (0 thru 5)**	**Comments**
Quality and Utilization Measurement	Ability to extract specific data elements from the EHR and ship them to MAeHC for aggregation (specifically HEDIS and DOQ-IT measures).		
Consultations	Ability to package and ship a patient's clinical information from the EHR to a foreign EHR in a standardized format (allergies, meds, etc.)		
	Ability to receive clinical information from a foreign EHR into this EHR		
Laboratory System (and other ancillary service systems)	Report results (data based) from the Laboratory/Ancillary System to the EHR		
	Report results (text based) from Ancillary or Radiology system to the EHR		
	Integrate image pointers or other methodologies that allow for the incorporation of radiology or other imaging results		
Computerized Orders	Transmit orders from the EHR to the Laboratory/Ancillary System/Radiology system and track receipt of lab data		
Clinical Repositories	Create clinical repositories (e.g., lab results, allergies) from information stored within the EHR		
	Query clinical repositories via its services architecture to retrieve and store pertinent health information into the EHR		
Transcription and Voice Services	Move dictation from the EHR to the Transcription Service		
	Move transcribed notes from the Transcription Service into the EHR		
	Extract structured data from transcribed notes		

Exchange Standards Checklist				
			Vendor response	
Data Exchange Type		**Standard**	**Response (0 thru 5)**	**Comments**
Problem List	Required Exchange Standard	HL7 version 2.x, PRB segment		
	Future Exchange Standard	HL7 3.0 RIM		
	Vocabulary	SNOMED, ICD		
Medications	Required Exchange Standard	NCPDP Script		
	Future Exchange Standard	RxNorm		
	Vocabulary	NDC		
Allergies	Required Exchange Standard	HL7 version 2.x, AL1 Segment		
	Future Exchange Standard	HL7 3.0 RIM		
	Vocabulary	Free Text		
Visit/Encounter	Required Exchange Standard	HL7 version 2.x, PV1/PV2 Segment		
	Future Exchange Standard	HL7 3.0 RIM		
	Vocabulary	ICD for visit reason		
Notes/Reports	Required Exchange Standard	HL7 version 2.x, OBR/OBX Segment		
	Future Exchange Standard	HL7 3.0 RIM		
	Vocabulary	Free Text		

Exchange Standards Checklist				
			Vendor response	
Data Exchange Type		**Standard**	**Response (0 thru 5)**	**Comments**
Lab/Micro/Rad Reports	Required Exchange Standard	HL7 version 2.x, OBR/OBX Segment		
	Future Exchange Standard	HL7 3.0 RIM		
	Vocabulary	LOINC		
Immunizations	Required Exchange Standard	HL7 version 2.x, OBR/OBX Segment		
	Future Exchange Standard	HL7 3.0 RIM		
	Vocabulary	SNOMED		
Images	Required Exchange Standard	DICOM		
	Future Exchange Standard	DICOM		
	Vocabulary			

IX. Implementation Requirements

While the implementation of any system requires a considerable commitment of time and resources, MAeHC is seeking a vendor who can provide significant leadership in establishing a well thought-out implementation plan and executing that plan with minimal impact on practice operations. The plan should set realistic expectations for the staff resources required and the timeframes for completion. MAeHC personnel will have minimal involvement in the implementation of vendor EHR systems at physician practices.

The vendor should supply a **4-page** description of their implementation and support program, and attach the standard Support Service Agreement as well as a sample implementation plan. The description must address the following issues.

- A description of the steps involved in system implementation including installation, workflow analysis, user training and documentation, data conversion, interface installation, and “go live”.
- A description of how the implementation model can support rapid deployment of the product including descriptions of expected implementation timeframes by practice size
- A description of the vendor’s staffing plan for the implementation at each practice location and time commitment.
- A description of the vendor’s expectations for what practice staff resources will be available to participate in the implementation process
- A delineation of vendor and customer responsibilities including a description who is accountable for the overall implementation
- A description of all of the vendor’s training programs, techniques and approaches
- A description for the level of support provided during the “go live” phase
- The escalation process in place to resolve unforeseen issues and difficult problems during implementation
- A description of the services provided by the vendor to maintain the system and respond to problems or concerns in its use after “go live”
- A description of Help Desk operations including hours of operation, weekend support procedures, paging procedures, escalation and issue resolution procedures, ticket tracking & reporting, etc.
- A description of the vendor’s technical support staffing and systems including specifics around the number of support resources located on site and in the field, skill sets, and support options available to clients
- The vendor’s recommendations for procedures to be employed in the event of unexpected downtime
- The vendor’s assessment of the key success factors in EHR implementation

X. HIPAA Standards

Please complete the chart below with a total page limit not to exceed **3 pages**. Use the chart not to describe whether the proposed solution addresses HIPAA Security Rule requirements, but how it complies with these requirements.

The following chart is based on Appendix A to the HIPAA Security Rule (45 C.F.R. Parts 160, 162 and 164, published at 68 Fed Reg. 833 (2003). The vendor should refer to the HIPAA Security Rule for additional detail regarding specific items.

Standard and Section	Implementation Specification	Detailed Vendor Response
Administrative Safeguards		
Security Management Process (164.308(a)(1))	• Risk Analysis • Risk Management • Sanction Policy • Information System Activity Review	
Assigned Security Responsibility (164.308(a)(2))		List designated security contact
Workforce Security (164.308(a)(3))	• Authorization and/or Supervision • Workforce Clearance Procedure • Termination Procedures	
Information Access Management (164.308(a)(4))	• Isolating Health Care Clearinghouse Function • Access Authorization • Access Establishment and Modification	
Security Awareness and Training (164.308(a)(5))	• Security Reminders • Protection from Malicious Software • Log-in Monitoring • Password Management	
Security Incident Procedures (164.308(a)(6))	• Response and Reporting	
Contingency Plan (164.308(a)(7))	• Data Backup Plan • Disaster Recovery Plan • Emergency Mode Operation Plan • Testing and Revision Procedure • Applications and Data Criticality Analysis	

Standard and Section	Implementation Specification	Detailed Vendor Response
Evaluation (164.308(a)(8))		
Business Associate Contracts and Other Arrangement (164.308(b)(1))	• Written Contract or Other Arrangement	For subcontractors and agents
Physical Safeguards		
Facility Access Controls (164.310(a)(1))	• Contingency Operations • Facility Security Plan • Access Control and Validation Procedures • Maintenance Records	
Workstation Use (164.310(b))		
Workstation Security (164.310(c))		
Device and Media Controls (164.310(d)(1))	• Disposal • Media Re-use • Accountability • Data Backup and Storage	
Technical Safeguards		
Access Control (164.312(a)(1))	• Unique User Identification • Emergency Access Procedure • Automatic Logoff • Encryption and Decryption	
Audit Controls (164.312(b))		
Integrity (164.312(c)(1))	• Mechanism to Authenticate Electronic Protected Health Information	
Person or Entity Authentication (164.312(d))		
Transmission Security (164.312(e)(1))	• Integrity Controls • Encryption	

XI. Pricing

The cost of the proposed EHR solution will be an important factor in determining which offerings will best meet the needs of the Collaborative. Each vendor must provide a complete cost estimate for the proposed EHR solution. One estimate should be developed for each of three hypothetical practices described below. Estimate should not exceed **2 pages each**, 6 pages total.

	Large Practice	Medium Practice	Small Practice
Physician Users	10	5	1
Non-Physician Users	15	10	2
Exam Rooms	20	10	2
Patients	20,000	10,000	2,000
Practice Management Resources	Full-time	Part-time	None
IT Resources	Full-time	Part-time	None
Registration Interface Required?	Yes	Yes	Yes
Appointment Interface Required?	Yes	Yes	Yes
Lab Result Interface Required?	Yes	Yes	Yes
Workstations	45 (or 25, plus 10 mobile devices)	25 (or 15, plus 5 mobile devices)	5 (or 3, plus 1 mobile device)
Remote Connectivity	Home access	Home access	Home access

In each estimate, the vendor must itemize the products and services necessary to install and implement the solution in the practice. For each item, describe the item, the basis for the price (e.g., per user, per practice, per server, per hour) and how the item/price will vary by practice size.

If the vendor does not provide one or more of the required products or services, the vendor must identify these items and provide a reasonable estimate of the cost based on their past experience with similar practices. If the estimate assumes existing infrastructure (e.g., Internet connectivity) at the practice, this assumption must be clearly stated. A copy of the vendor's standard sales contract and license agreement should also be attached.

At a minimum, the products and services must include:

- **Server hardware / software.** The vendor must supply or recommend/price a server (or ASP environment) that is configured to support the practice's patient population and proposed number of users. The server specification must include minimum and recommended hardware configurations, operating system software versions and appropriate tools or utility software to manage/maintain the server environment. The vendor must also provide the growth assumptions that would trigger the need to upgrade or replace the proposed server.

- **Network infrastructure.** The vendor must supply or recommend/price the hardware and software necessary to establish the local area network over which the workstations will communicate with the server and necessary security infrastructure.

- **Client hardware /software.** The vendor must supply hardware recommendations/pricing for physician and administrative staff workstations, including minimum and recommended hardware configurations, and operating system software and versions. In addition, the vendor must supply recommendations/pricing for other desktop devices (e.g., printers, scanners) required by the application and appropriate to offices of these sizes.

- **Telecommunications/Connectivity services.** The vendor must identify and price the telecommunications or broadband connectivity services required to access any external services and support remote access to the EHR solution.

- **Application software.** The vendor must identify and price the EHR software application including all of the modules and components necessary to achieve the EHR functionality described in other sections of the proposal.

- **Third party software.** The vendor must identify and price any third party software, dictionaries or services required to achieve the EHR functionality described in other sections of the proposal.

- **Implementation.** The vendor must estimate the cost and number of days of consulting, project management, training and other professional services necessary to successfully install the EHR solution in the physician practice. The vendor must also specify the cost of additional professional services if requested by the practice.

- **Interfaces.** The vendor must detail the price to develop and implement each of the required interfaces.

- **Product maintenance and support.** The vendor must specify the price of the product maintenance and technical support services described in the proposal.

- **Data conversion.** The vendor should estimate the cost and number of days of assistance that will be required to convert key data from the practice's paper charts.

Appendix A. Letter of Intent

Letter of Intent

Each vendor is asked to complete the following document and e-mail it to rfp@maehc.org by April 15, 2005, 5:00 P.M. Eastern Standard Time.

Vendor Name:

Address:

Contact:

Phone Number:

E-mail:

☐ ***intends*** to respond to the MA eHealth Collaborative EHR RFP by April 28, 200 5:00 P.M. EST.

☐ ***does not intend*** to respond to the MA eHealth Collaborative EHR RFP.

If not, please explain:

Appendix B. EHR Functional Checklist

EHR Functional Checklist

(Adapted from the HL7 EHR Draft Standard for Trial Use, Copyright © July 2004)

Please respond to each item (excluding the category headings which are shaded either gray or blue). The only acceptable responses are:

5 = **Completely** meets requirement today.
4 = **Partially meets** requirement today.
3 = **Will completely meet** requirement in future (specify date in comments).
2 = **Will partially meet** requirement in future (specify required change and date in comments).
1 = Can meet requirement through a **customization** (specify price in comments).
0 = **Not planning to offer.**

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.1	**Care Management**					
DC.1.1	Health information capture, management, and review		For those functions related to data capture, data may be captured using standardized code sets or nomenclature, depending on the nature of the data, or captured as unstructured data. Care-setting dependent data is entered by a variety of caregivers. Details of who entered data and when it was captured should be tracked. Data may also be captured from devices or other Tele-Health Applications.			
DC.1.1.1	Identify and maintain a patient record	Identify and maintain a single patient record for each patient.	Key identifying information is stored and linked to the patient record. Static data elements as well as data elements that will change over time are maintained. A lookup function uses this information to uniquely identify the patient.	**Essential Now**		
DC.1.1.2	Manage patient demographics	Capture and maintain demographic information. Where appropriate, the data should be clinically relevant, reportable and trackable over time.	Contact information including addresses and phone numbers, as well as key demographic information such as date of birth, sex, and other information is stored and maintained for reporting purposes and for the provision of care.	**Essential Now**		
DC.1.1.3	Manage summary lists	Create and maintain patient-specific summary lists that are structured and coded where appropriate.	Patient summary lists can be created from patient specific data and displayed and maintained in a summary format. The functions below are important, but do not exhaust the possibilities.			

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.1.1.3.1	Manage problem list	Create and maintain patient-specific problem lists.	A problem list may include, but is not limited to: Chronic conditions, diagnoses, or symptoms, functional limitations, visit or stay-specific conditions, diagnoses, or symptoms. Problem lists are managed over time, whether over the course of a visit or stay or the life of a patient, allowing documentation of historical information and tracking the changing character of problem(s) and their priority. All pertinent dates, include date noted or diagnosed, dates of any changes in problem specification or prioritization, and date of resolution are stored. This might include time stamps, where useful and appropriate. The entire problem history for any problem in the list is viewable.	**Essential Now**		
DC.1.1.3.2	Manage medication list	Create and maintain patient-specific medication lists.	Medication lists are managed over time, whether over the course of a visit or stay, or the lifetime of a patient. All pertinent dates, including medication start, modification, and end dates are stored. The entire medication history for any medication, including alternative supplements and herbal medications, is viewable. Medication lists are not limited to medication orders recorded by providers, but may include, for example, pharmacy dispense/supply records and patient-reported medications.	**Essential Now**		
DC.1.1.3.3	Manage allergy and adverse reaction list	Create and maintain patient-specific allergy and adverse reaction lists.	Allergens, including immunizations, and substances are identified and coded (whenever possible) and the list is managed over time. All pertinent dates, including patient-reported events, are stored and the description of the patient allergy and adverse reaction is modifiable over time. The entire allergy history, including reaction, for any allergen is viewable. The list(s) include drug reactions that are not classifiable as a true allergy and intolerances to dietary or environmental triggers. Notations indicating whether item is patient reported and/or provider verified are supported.	**Essential Now**		
DC.1.1.4	Manage Patient History	Capture, review, and manage medical procedural/surgical, social and family history including the capture of pertinent positive and negative histories, patient-reported or externally available patient clinical history.	The history of the current illness and patient historical data related to previous medical diagnoses, surgeries and other procedures performed on the patient, including an immunization history, and relevant health conditions of family members is captured through such methods as patient reporting (for example interview, medical alert band) or electronic or non-electronic historical data. This data may take the form of a positive or a negative such as: "The patient/family member has had..." or "The patient/family member has not had..." When first seen by a health care provider, patients typically bring with them clinical information from past encounters. This and similar information is captured and presented alongside locally captured documentation and notes wherever appropriate.	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.1.1.5	Summarize health record	Present a chronological, filterable, and comprehensive review of a patient's EHR, which may be summarized, subject to privacy and confidentiality requirements.	A key feature of an electronic health record is its ability to present, summarize, filter, and facilitate searching through the large amounts of data collected during the provision of patient care. Much of this data is date or date-range specific and should be presented chronologically. Local confidentiality rules that prohibit certain users from accessing certain patient information must be supported.	**Essential Now**		
DC.1.1.6	Manage clinical documents and notes	Create, addend, correct, authenticate and close, as needed, transcribed or directly-entered clinical documentation and notes.	Clinical documents and notes may be created in a narrative form, which may be based on a template. The documents may also be structured documents that result in the capture of coded data. Each of these forms of clinical documentation are important and appropriate for different users and situations.	**Essential Now**		
DC.1.1.7	Capture external clinical documents	Incorporate clinical documentation from external sources.	Mechanisms for incorporating external clinical documentation (including identification of source) such as image documents and other clinically relevant data are available. Data incorporated through these mechanisms is presented alongside locally captured documentation and notes wherever appropriate.	**Essential Now**		
DC.1.1.8	Capture patient-originated data	Capture and explicitly label patient-provided and patient-entered clinical data, and support provider authentication for inclusion in patient history	It is critically important to be able to distinguish patient-provided and patient-entered data from clinically authenticated data. Patients may provide data for entry into the health record or be given a mechanism for entering this data directly. Patient-entered data intended for use by care providers will be available for their use.	**Essential Future**		
DC.1.1.9	Capture patient and family preferences	Capture patient and family preferences at the point of care.	Patient and family preferences regarding issues such as language, religion, culture, etcetera - may be important to the delivery of care. It is important to capture these at the point of care so that they will be available to the provider.	**Essential Now**		
DC.1.2	Care plans, guidelines, and protocols					
DC.1.2.1	Present care plans, guidelines, and protocols	Present organizational guidelines for patient care as appropriate to support order entry and clinical documentation.	Care plans, guidelines, and protocols may be site specific, community or industry-wide standards. They may need to be managed across one or more providers. Tracking of implementation or approval dates, modifications and relevancy to specific domains or context is provided.	**Essential Now**		
DC.1.2.2	Manage guidelines, protocols and patient-specific care plans.	Provide administrative tools for organizations to build care plans, guidelines and protocols for use during patient care planning and care.	Guidelines or protocols may contain goals or targets for the patient, specific guidance to the providers, suggested orders, and nursing interventions, among other items.	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.1.2.3	Generate and record patient-specific instructions	Generate and record patient-specific instructions related to pre- and post-procedural and post-discharge requirements.	When a patient is scheduled for a test, procedure, or discharge, specific instructions about diet, clothing, transportation assistance, convalescence, follow-up with physician, etcetera. may be generated and recorded, including the timing relative to the scheduled event.	**Essential Future**		
DC.1.3	Medication ordering and management					
DC.1.3.1	Order medication	Create prescriptions or other medication orders with detail adequate for correct filling and administration. Provide information regarding compliance of medication orders with formularies.	Different medication orders, including discontinue, refill, and renew, require different levels and kinds of detail, as do medication orders placed in different situations. The correct details are recorded for each situation. Administration or patient instructions are available for selection by the ordering clinicians, or the ordering clinician is facilitated in creating such instructions. Appropriate time stamps for all medication related activity are generated. This includes series of orders that are part of a therapeutic regimen, e.g. Renal Dialysis, Oncology. When a clinician places an order for a medication, that order may or may not comply with a formulary specific to the patient's location or insurance coverage, if applicable. Whether the order complies with the formulary should be communicated to the ordering clinician at an appropriate point to allow the ordering clinician to decide whether to continue with the order. Formulary-compliant alternatives to the medication being ordered may also be presented.	**Essential Now**		
DC.1.3.2	Manage medication administration	Present to appropriate clinicians the list of medications that are to be administered to a patient, under what circumstances, and capture administration details.	In a setting in which medication orders are to be administered by a clinician rather than the patient, the necessary information is presented including: the list of medication orders that are to be administered; administration instructions, times or other conditions of administration; dose and route, etcetera. Additionally, the clinician is able to record what actually was or was not administered, whether or not these facts conform to the order. Appropriate time stamps for all medication related activity are generated.	**Essential Future**		
DC.1.4	Orders, referrals, and results management					

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.1.4.1	Place patient care orders	Capture and track orders based on input from specific care providers.	Orders that request actions or items can be captured and tracked. Examples include orders to transfer a patient between units, to ambulate a patient, for medical supplies, durable medical equipment, home IV, and diet or therapy orders. For each orderable item, the appropriate detail, including order identification and instructions, can be captured. Orders should be communicated to the correct recipient for completion if appropriate.	**Essential Now**		
DC.1.4.2	Order diagnostic tests	Submit diagnostic test orders based on input from specific care providers.	For each orderable item, the appropriate detail and instructions must be available for the ordering care provider to complete. Orders for diagnostic tests should be transmitted to the correct destination for completion or generate appropriate requisitions for communication to the relevant resulting agencies.	**Essential Now**		
DC.1.4.3	Manage order sets	Provide order sets based on provider input or system prompt.	Order sets, which may include medication orders, allow a care provider to choose common orders for a particular circumstance or disease state according to best practice or other criteria. Recommended order sets may be presented based on patient data or other contexts.	**Essential Now**		
DC.1.4.4	Manage referrals	Enable the origination, documentation and tracking of referrals between care providers or healthcare organizations, including clinical and administrative details of the referral.	Documentation and tracking of a referral from one care provider to another is supported, whether the referred to or referring providers are internal or external to the healthcare organization. Guidelines for whether a particular referral for a particular patient is appropriate in a clinical context and with regard to administrative factors such as insurance may be provided to the care provider at the time the referral is created.	**Essential Future**		
DC.1.4.5	Manage results	Route, manage and present current and historical test results to appropriate clinical personnel for review, with the ability to filter and compare results.	Results of tests are presented in an easily accessible manner and to the appropriate care providers. Flow sheets, graphs, or other tools allow care providers to view or uncover trends in test data over time. In addition to making results viewable, it is often necessary to send results to appropriate care providers using an electronic messaging systems, pagers, or other mechanism. Results may also be routed to patients electronically or in the form of a letter. Documentation of notification is accommodated.	**Essential Now**		
DC.1.4.6	Order blood products and other biologics	Communicate with appropriate sources or registries to order blood products or other biologics.	Interact with a blood bank system or other source to manage orders for blood products or other biologics. Use of such products in the provision of care is captured. Blood bank or other functionality that may come under federal or other regulation (such as by the FDA in the United States) is not required; functional communication with such a system is required.	**Optional**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.1.5	Consents, authorizations and directives					
DC.1.5.1	Manage consents and authorizations	Create, maintain, and verify patient treatment decisions in the form of consents and authorizations when required.	Treatment decisions are documented and include the extent of information, verification levels and exposition of treatment options. This documentation helps ensure that decisions made at the discretion of the patient, family, or other responsible party govern the actual care that is delivered or withheld.	Essential Future		
DC.1.5.2	Manage patient advance directives	Capture, maintain and provide access to patient advance directives.	Patient advance directives and provider DNR orders can be captured as well as the date and circumstances under which the directives were received, and the location of any paper records of advance directives as appropriate.	Essential Now		
DC.2	Clinical Decision Support					
DC.2.1	Manage Health Information to enable Decision Support					
DC.2.1.1	Support for standard assessments	Offer prompts to support the adherence to care plans, guidelines, and protocols at the point of information capture.	When a clinician fills out an assessment, data entered triggers the system to prompt the assessor to consider issues that would help assure a complete/accurate assessment. A simple demographic value or presenting problem (or combination) could provide a template for data gathering that represents best practice in this situation, e.g. Type II diabetic review, fall and 70+, rectal bleeding etcetera. As another example, to appropriately manage the use of restraints, an online alert is presented defining the requirements for a behavioral health restraint when it is selected.	Essential Now		
DC.2.1.2	Support for Patient Context-enabled Assessments	Offer prompts based on patient-specific data at the point of information capture.	When a clinician fills out an assessment, data entered is matched against data already in the system to identify potential linkages. For example, the system could scan the medication list and the knowledge base to see if any of the symptoms are side effects of medication already prescribed. Important but rare diagnoses could be brought to the doctor's attention, for instance ectopic pregnancy in a woman of child bearing age who has abdominal pain.	Essential Now		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.2.1.3	Support for identification of potential problems and trends	Identify trends that may lead to significant problems, and provide prompts for consideration.	When personal health information is collected directly during a patient visit input by the patient, or acquired from an external source (lab results), it is important to be able to identify potential problems and trends that may be patient-specific, given the individual's personal health profile, or changes warranting further assessment. For example: significant trends (lab results, weight); a decrease in creatinine clearance for a patient on metformin, or an abnormal increase in INR for a patient on warfarin.	**Essential Now**		
DC.2.1.4	Support for patient and family preferences	Support the integration of patient and family preferences into clinical decision support at all appropriate opportunities.	Decision support functions should permit consideration of patient/family preferences and concerns, such as with language, religion, culture, medication choice, invasive testing, and advance directives.	**Essential Future**		
DC.2.2	**Care plans, guidelines and protocols**			-	-	
DC.2.2.1	Support for condition based care plans, guidelines, protocols					
DC.2.2.1.1	Support for standard care plans, guidelines, protocols	Support the use of appropriate standard care plans, guidelines and/or protocols for the management of specific conditions.	At the time of the clinical encounter, standard care protocols are presented. These may include site-specific considerations.	**Essential Now**		
DC.2.2.1.2	Support for context-sensitive care plans, guidelines, protocols	Identify and present the appropriate care plans, guidelines and/or protocols for the management of specific conditions that are patient-specific.	At the time of the clinical encounter (problem identification), recommendations for tests, treatments, medications, immunizations, referrals and evaluations are presented based on evaluation of patient specific data, their health profile and any site-specific considerations. These may be modified on the basis of new clinical data at subsequent encounters.	**Essential Future**		
DC.2.2.1.3	Capture variances from standard care plans, guidelines, protocols	Identify variances from patient-specific and standard care plans, guidelines, and protocols.	Variances from care plans, guidelines, or protocols are identified and tracked, with alerts, notifications and reports as clinically appropriate. This may include systematic deviations from protocols or variances on a case by case basis dictated by the patient's particular circumstances.	**Essential Future**		
DC.2.2.1.4	Support management of patient groups or populations	Provide support for the management of populations of patients that share diagnoses, problems, demographic characteristics, and etcetera.	Populations or groups of patients that share diagnoses (such as diabetes or hypertension), problems, demographic characteristics, and medication orders are identified. The clinician may be notified of eligibility for a particular test, therapy, or follow-up; or results from audits of compliance of these populations with disease management protocols.	**Essential Future**		

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				Priority Level	Response (0 thru 5)	Comments
DC.2.2.1.5	Support for research protocols relative to individual patient care.	Provide support for the management of patients enrolled in research protocols and management of patients enrolled in research protocols.	The clinician is presented with protocol-based care for patients enrolled in research studies. See S.3.3.1 for support for enrollment of patients in research protocols.	**Optional**		
DC.2.2.1.6	Support self-care	Provide the patient with decision support for self-management of a condition between patient-provider encounters.	Patients with specific conditions need to follow self-management plans that may include schedules for home monitoring, lab tests, and clinical check ups; recommendations about nutrition, physical activity, tobacco use, etcetera; and guidance or reminders about medications.	**Optional**		
DC.2.3	Medication and immunization management					
DC.2.3.1	Support for medication and immunization ordering					
DC.2.3.1.1	Support for drug interaction checking	Identify drug interaction warnings at the point of medication ordering	The clinician is alerted to drug-drug, drug-allergy, and drug-food interactions at levels appropriate to the health care entity. These alerts may be customized to suit the user or group.	**Essential Now**		
DC.2.3.1.2	Patient specific dosing and warnings	Identify and present appropriate dose recommendations based on patient-specific conditions and characteristics at the time of medication ordering.	The clinician is alerted to drug-condition interactions and patient specific contraindications and warnings e.g. elite athlete, pregnancy, breast-feeding or occupational risks. The preferences of the patient may also be presented e.g. reluctance to use an antibiotic. Additional patient parameters, including age, Ht, Wt, BSA, may also be incorporated.	**Essential Now**		
DC.2.3.1.3	Medication recommendations	Recommend treatment and monitoring on the basis of cost, local formularies or therapeutic guidelines and protocols.	Offer alternative treatments on the basis of best practice (e.g. cost or adherence to guidelines), a generic brand, a different dosage, a different drug, or no drug (watchful waiting). Suggest lab order monitoring as appropriate. Support expedited entry of series of medications that are part of a treatment regimen, i.e. renal dialysis, Oncology, transplant medications, etcetera.	**Essential Future**		
DC.2.3.2	Support for medication and immunization administration or supply	Alert providers in real-time to potential administration errors such as wrong patient, wrong drug, wrong dose, wrong route and wrong time in support of medication administration or pharmacy dispense/supply management and workflow.	To reduce medication errors at the time of administration of a medication, the patient is positively identified; checks on the drug, the dose, the route and the time are facilitated. Documentation is a by-product of this checking; administration details and additional patient information, such as injection site, vital signs, and pain assessments, are captured. In addition, access to online drug monograph information allows providers to check details about a drug and enhances patient education.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.2.4	Orders, referrals, results and care management					
DC.2.4.1	Support for non-medication ordering	Identify necessary order entry components for non-medication orders that make the order pertinent, relevant and resource-conservative at the time of provider order entry; flag any inappropriate orders based on patient profile.	Possible order entry components include, but are not limited to: missing results required for the order, suggested corollary orders, notification of duplicate orders, institution-specific order guidelines, guideline-based orders/order sets, order sets, order reference text, patient diagnosis specific recommendations pertaining to the order. Also, warnings for orders that may be inappropriate or contraindicated for specific patients (e.g. X-rays for pregnant women) are presented.	Essential Now		
DC.2.4.2	Support for result interpretation	Evaluate results and notify provider of results within the context of the patient's clinical data.	Possible result interpretations include, but are not limited to: abnormal result evaluation/notification, trending of results (such as discrete lab values), evaluation of pertinent results at the time of provider order entry (such as evaluation of lab results at the time of ordering a radiology exam), evaluation of incoming results against active medication orders.	Essential Now		
DC.2.4.3	Support for referrals					
DC.2.4.3.1	Support for the referral process based upon the specific patient's clinical data	Evaluate referrals within the context of a patient's clinical data.	When a healthcare referral is made, pertinent health information, including pertinent results, demographic and insurance data elements (or lack thereof) are presented to the provider. Protocols for appropriate workup prior to referral may be presented. This may be pertinent to transfers between inpatient facilities and SNFs.	Essential Future		
DC.2.4.3.2	Support for referral recommendations	Evaluate patient data and recommend that a patient be referred based on the specific patient's clinical data.	Entry of specific patient conditions may lead to recommendations for referral e.g. for smoking cessation counseling if the patient is prescribed a medication to support cessation.	Essential Future		
DC.2.4.4	Support for Care Delivery					
DC.2.4.4.1	Support for safe blood administration	Alert provider in real-time to potential blood administration errors.	To reduce blood administration errors at the time of administration of blood products, the patient is positively identified and checks on the blood product, the amount, the route and the time are facilitated. Documentation is a by-product of this checking.	Optional		

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DC.2.4.4.2	Support for accurate specimen collection	Alert providers in real-time to ensure specimen collection is supported.	To ensure the accuracy of specimen collection, when a provider obtains specimens from a patient, the clinician can match each specimen collection identifier and the patient's ID bracelet. The provider is notified in real-time of potential collection errors such as wrong patient, wrong specimen type, wrong means of collection, wrong site, and wrong date and time. Documentation of the collection is a by-product of this checking.	Optional		
DC.2.5	Support for Health Maintenance: Preventive Care and Wellness					
DC.2.5.1	Present alerts for preventive services and wellness	At the point of clinical decision making, identify patient specific suggestions/reminders, screenir tests/exams, and other preventi services in support of routine preventive and wellness patient care standards.	At the time of an encounter, the provider or patient is presented with due or overdue activities based on protocols for preventive care and wellness. Examples include but are not limited to, routine immunizations, adult and well baby care, age and sex appropriate screening exams, such as PAP smears.	Essential Now		
DC.2.5.2	Notifications and reminders for preventive services and wellness	Between healthcare encounters, notify the patient and/or appropriate provider of those preventive services, tests, or behavioral actions that are due or overdue.	The provider can generate notifications to patients regarding activities that are due or overdue and these communications can be captured. Examples include but are not limited to time sensitive patient and provider notification of: follow-up appointments, laboratory tests, immunizations or examinations. The notifications can be customized in terms of timing, repetitions and administration reports. E.g. a Pap test reminder might be sent to the patient a 2 months prior to the test being due, repeated at 3 month intervals, and then reported to the administrator or clinician when 9 months overdue.	Essential Now		
DC.2.6	Support for population health					

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.2.6.1	Support for clinical health state monitoring within a population.	Support clinical health state monitoring of aggregate patient data for use in identifying health risks from the environment and/or population.	Standardized surveillance performance measures that are based on known patterns of disease presentation can be identified by aggregating data from multiple input mechanisms. For example, elements include, but are not limited to patient demographics, resource utilization, presenting symptoms, acute treatment regimens, laboratory and imaging study orders and results and genomic and proteomic data elements. Identification of known patterns of existing diseases involves aggregation and analysis of these data elements by existing relationships. However, the identification of new patterns of disease requires more sophisticated pattern recognition analysis. Early recognition of new patterns requires data points available early in the disease presentation. Demographics, ordering patterns and resource use (e.g., ventilator or intensive care utilization pattern changes) are often available earlier in the presentation of non-predictable diseases. Consumer-generated information is also valuable with respect to surveillance efforts.	**Essential Future**		
DC.2.6.2	Support for notification and response	Upon notification by an external, authoritative source of a health risk within the cared for population, alert relevant providers regarding specific potentially at-risk patients with the appropriate level of notification.	Upon receipt of notice of a health risk within a cared-for population from public health authorities or other external authoritative sources, identify and notify individual care providers or care managers that a risk has been identified and requires attention including suggestions on the appropriate course of action. This process gives a care provider the ability to influence how patients are notified, if necessary.	**Optional**		
DC.2.6.3	Support for monitoring response to notifications regarding an individual patient's health, including appropriate follow-up notifications	In the event of a health risk alert and subsequent notification related to a specific patient, monitor if expected actions have been taken, and execute follow-up notification if they have not.	Identifies that expected follow-up for a specific patient event (e.g., follow up to error alerts or absence of an expected lab result) has not occurred and communicate the omission to appropriate care providers in the chain of authority. Of great importance to the notification process is the ability to match a care provider's clinical privileges with the clinical requirements of the notification.	**Essential Future**		
DC.2.7	Support for knowledge access					
DC.2.7.1	Access clinical guidance	Provide relevant evidence-based information and knowledge to the point of care for use in clinical decisions and care planning.	Examples include but are not limited to: evidence on treatment of conditions and wellness, as well as context-specific links to other knowledge resources. For example, when a condition is diagnosed provider is directed to relevant online evidence for management.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.2.7.2	Patient knowledge access	Enable the accessibility of reliable information about wellness, disease management, treatments, and related information that is relevant for a specific patient.	An individual will be able to find reliable information to answer a health question, follow up from a clinical visit, identify treatment options, or other health information needs. The information may be linked directly from entries in the health record, or may be accessed through other means such as key word searching.	**Essential Future**		
DC.3	**Operations Management and Communication**			-	-	
DC.3.1	Clinical workflow tasking	Schedule and manage tasks with appropriate timeliness.	Since the electronic health record will replace the paper chart, tasks that were based on the paper artifact must be effectively managed in the electronic environment. Functions must exist in the EHRS that support electronically any workflow that previously depended on the existence of a physical artifact (such as the paper chart, a phone message slip) in a paper based system. Tasks differ from other more generic communication among participants in the care process because they are a call to action and target completion of a specific workflow in the context of a patient's health record (including a specific component of the record). Tasks also require disposition (final resolution). The initiator may optionally require a response. For example, in a paper based system, physically placing charts in piles for review creates a physical queue of tasks related to those charts. This queue of tasks (for example, a set of patient phone calls to be returned) must be supported electronically so that the list (of patients to be called) is visible to the appropriate user or role for disposition. Tasks are time-limited (or finite). The state transition (e.g. created, performed and resolved) may be managed by the user explicitly or automatically based on rules. For example, if a user has a task to signoff on a test result, that task should automatically be marked complete by the EHR when the test result linked to the task is signed in the system. Patients will become more involved in the care process by receiving tasks related to their care. Examples of patient related tasks include acknowledgement of receipt of a test result forwarded from the provider, or a request to schedule an appointment for a pap smear (based on age and frequency criteria) generated automatically by the EHRS on behalf of the provider.			

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.3.1.1	Clinical task assignment and routing	Assignment, delegation and/or transmission of tasks to the appropriate parties.	Tasks are at all times assigned to at least one user or role for disposition. Whether the task is assignable and to whom the task can be assigned will be determined by the specific needs of practitioners in a care setting. Task-assignment lists help users prioritize and complete assigned tasks. For example, after receiving a phone call from a patient, the triage nurse routes or assigns a task to return the patient's call to the physician who is on call. Task creation and assignment may be automated, where appropriate. An example of a system-triggered task is when lab results are received electronically; a task to review the result is automatically generated and assigned to a clinician. Task assignment ensures that all tasks are disposed of by the appropriate person or role and allows efficient interaction of entities in the care process.	**Essential Now**		
DC.3.1.2	Clinical task linking	Linkage of tasks to patients and/or a relevant part of the electronic health record.	Clinical tasks are linked to a patient or to a component of a patient's medical record. An example of a well defined task is "Dr. Jones must review Mr. Smith's blood work results." Efficient workflow is facilitated by navigating to the appropriate area of the record to ensure that the appropriate test result for the correct patient is reviewed. Other examples of tasks might involve fulfillment of orders or responding to patient phone calls.	**Essential Future**		
DC.3.1.3	Clinical task tracking	Track tasks to guarantee that each task is carried out and completed appropriately.	In order to reduce the risk of errors during the care process due to missed tasks, the provider is able to view and track un-disposed tasks, current work lists, the status of each task, unassigned tasks or other tasks where a risk of omission exists. For example, a provider is able to create a report to show test results that have not been reviewed by the ordering provider based on an interval appropriate to the care setting.	**Essential Future**		
DC.3.1.3.1	Clinical task timeliness tracking	Track and/or report on timeliness of task completion.	Capability to track and review reports on the timeliness of certain tasks in accordance with relevant law and accreditation standards.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.3.2	Support clinical communication		Healthcare requires secure communications among various participants: patients, doctors, nurses, chronic disease care managers, pharmacies, laboratories, payers, consultants, and etcetera. An effective EHRS supports communication across all relevant participants, reduces the overhead and costs of healthcare-related communications, and provides automatic tracking and reporting. The list of communication participants is determined by the care setting and may change over time. Because of concerns about scalability of the specification over time, communication participants for all care settings or across care settings are not enumerated here because it would limit the possibilities available to each care setting and implementation. However, communication between providers and between patients and providers will be supported in all appropriate care settings and across care settings. Implementation of the EHRS enables new and more effective channels of communication, significantly improving efficiency and patient care. The communication functions of the EHRS will eventually change the way participants collaborate and distribute the work of patient care.			
DC.3.2.1	Inter-provider communication	Support secure electronic communication (inbound and outbound) between providers to trigger or respond to pertinent actions in the care process (including referral), document non-electronic communication (such as phone calls, correspondence or other encounters) and generate paper message artifacts where appropriate.	Communication among providers involved in the care process can range from real time communication (for example, fulfillment of an injection while the patient is in the exam room), to asynchronous communication (for example, consult reports between physicians). Some forms of inter-practitioner communication will be paper based and the EHRS must be able to produce appropriate documents.	Essential Future		
DC.3.2.2	Pharmacy communication	Provide features to enable secure bidirectional communication of information electronically between practitioners and pharmacies or between practitioner and intended recipient of pharmacy orders.	When a medication is prescribed, routed to the pharmacy or another intended recipient of pharmacy orders. This information is used to avoid transcription errors and facilitate detection of potential adverse reactions. Upon filling the prescription, information is sent back to the practitioner to indicate that the patient received the medication. If there is a question from the pharmacy, that communication can be presented to the provider with their other tasks.	Essential Now		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
DC.3.2.3	Provider and patient or family communication	Trigger or respond to electronic communication (inbound and outbound) between providers and patients or patient representatives with pertinent actions in the care process.	The clinician is able to communicate with patients and others, capturing the nature and content of electronic communication, or the time and details of other communication. For example: when test results arrive, the clinician may wish to email the patient that test result was normal (details of this communication are captured); a patient may wish to request a refill of medication by emailing the physician; patients with asthma may wish to communicate their peak flow logs/diaries to their provider; or a hospital may wish to communicate with selected patients about a new smoking cessation program.	**Optional**		
DC.3.2.4	Patient, family and care giver education	Identify and make available electronically or in print any educational or support resources for patients, families, and caregivers that are most pertinent for a given health concern, condition, or diagnosis and which are appropriate for the person (s).	The provider or patient is presented with a library of educational materials and where appropriate, given the opportunity to document patient/caregiver comprehension. The materials can be printed or electronically communicated to the patient.	**Essential Now**		
DC.3.2.5	Communication with medical devices	Support communication and presentation of data captured from medical devices.	Communication with medical devices is supported as appropriate to the care setting. Examples include: vital signs/pulse-oximeter, anesthesia machines, home diagnostic devices for chronic disease management, laboratory machines, bar coded artifacts (medicine, immunizations, demographics, history, and identification).	**Essential Future**		
S.1	**Clinical Support**			-	-	
S.1.1	Registry Notification	Enable the automated transfer of formatted demographic and clinical information to and from local disease specific registries (and other notifiable registries) for patient monitoring and subsequent epidemiological analysis.	The user can export personal health information to disease specific registries, other notifiable registries like immunization registries, and add new registries through the addition of standard data transfer protocols or messages.	**Essential Future**		
S.1.2	Donor management support	Provide capability to capture or receive, and share needed information on potential organ and blood donors and recipients.	The user is able to capture or receive information on potential organ and blood donors and recipients. The user can make this information available to internal and external donor matching agencies.	**Optional**		
S.1.3	Provider directory	Provide a current directory of practitioner, team, department, organization, and etcetera, information in accordance with relevant laws, regulations, and conventions.	Maintain or access current directory of provider information in accordance with relevant laws, regulations, and conventions, including full name, address or physical location, and a 24x7 telecommunications address (e.g. phone or pager access number) for the purposes of the following functions			

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.1.3.1	Provider demographics	Provide a current directory of practitioners that, in addition to demographic information, contains data needed to determine levels of access required by the EHR security system.	Provider demographics may include any credentials, certifications, or any other information that may be used to verify that a provider is permitted to perform certain services.	**Essential Now**		
S.1.3.2	Provider's location within facility	Provide provider location or contact information on a facility's premises.		**Optional**		
S.1.3.3	Provider's on call location	Provide provider location or contact information when on call.		**Optional**		
S.1.3.4	Provider's general location	Provide locations or contact information for the provider in order to direct patients or queries.		**Optional**		
S.1.4	Patient directory	Provide a current directory of patient information in accordance with relevant privacy and other applicable laws, regulations, and conventions.	Provide a current directory of patient information in accordance with relevant privacy and other applicable laws, regulations, and conventions, including, when available, full name, address or physical location, alternate contact person, primary phone number, and relevant health status information for the purposes of the following functions.			
S.1.4.1	Patient demographics	Support interactions with other systems, applications, and modules to enable the maintenance of updated demographic information in accordance with realm-specific recordkeeping requirements.	The minimum demographic data set must include the data required by realm-specific laws governing health care transactions and reporting. This may also include data input of death status information.	**Essential Now**		
S.1.4.2	Patient's location within a facility	Provide the patient's location information within a facility's premises.	Example: The patient census in a hospital setting	**Optional**		
S.1.4.3	Patient's residence for the provision and administration of services	Provide the patient's residence information solely for purposes related to the provision and administration of services to the patient, patient transport, and as required for public health reporting.		**Essential Now**		
S.1.4.4	Optimize patient bed assignment	Support interactions with other systems, applications, and modules to ensure that the patient's bed assignments within the facility optimize care and minimize risks e.g. of exposure to contagious patients.		**Not Applicable**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.1.5	De-identified data request management	Provide patient data in a manner that meets local requirements for de-identification.	When an internal or external party requests patient data and that party requests de-identified data (or is not entitled to identify patient information, either by law or custom), the user can export the data in a fashion that meets local requirements for de-identification. An audit trail of these requests and exports is maintained. For internal clinical audit, a re-identification key may be added to the data.	**Essential Future**		
S.1.6	Scheduling	Support interactions with other systems, applications, and modules to provide the necessary data to a scheduling system for optimal efficiency in the scheduling of patient care, for either the patient or a resource/device.	The system user can schedule events as required. Relevant clinical or demographic information can be linked to the task.	**Essential Now**		Or integrate with a scheduling system
S.1.7	Healthcare resource availability	Support interactions with other systems, applications, and modules to enable the distribution of local healthcare resource information in times of local or national emergencies.	In times of identified local or national emergencies and upon request from authorized bodies, provide current status of healthcare resources including, but not limited to, available beds, providers, support personal, ancillary care areas and devices, operating theaters, medical supplies, vaccines, and pharmaceuticals. The intent is for the authorized body to distribute either resources or patient load to maximize efficient healthcare delivery.	**Optional**		
S.2	**Measurement, Analysis, Research and Reports**			-	-	
S.2.1	Measurement, monitoring, and analysis	Support measurement and monitoring of care for relevant purposes.				
S.2.1.1	Outcome Measures and Analysis	Support the capture and reporting of information for the analysis of outcomes of care provided to populations, in facilities, by providers, and in communities.		**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.2.1.2	Performance and accountability measures	Support the capture and reporting of quality, performance, and accountability measures to which providers/facilities/delivery systems/communities are held accountable including measures related to process, outcomes, and/or costs of care, may be used in 'pay for performance' monitoring and adherence to best practice guidelines.		**Essential Future**		
S.2.2	Report generation	Provide report generation features for the generation of standard and ad hoc reports.	A user can create standard and ad hoc reports for clinical, administrative, and financial decision-making, and for patient use - including structured data and/or unstructured text from the patient's health record. Reports may be linked with financial and other external data sources (i.e. data external to the entity). Such reports may include patient-level reports, provider/facility/delivery system-level reports, population-level reports, and reports to public health agencies. Examples of patient-level reports include: administratively required patient assessment forms, admission/transfer/discharge reports, operative and procedure reports, consultation reports, and drug profiles. Examples of population-level reports include: reports on the effectiveness of clinical pathways and other evidence-based practices, tracking completeness of clinical documentation, etcetera. Examples of reports to public health agencies include: vital statistics, reportable diseases, discharge summaries, immunization data including adverse outcomes, cancer data, and other such data necessary to maintain the publics' health (including suspicion of newly emerging infectious disease and non-natural events).			
S.2.2.1	Health record output	Allow users to define the records and/or reports that are considered the formal health record for disclosure purposes, and provide a mechanism for both chronological and specified record element output.	Provide hardcopy and electronic output that can fully chronicles the healthcare process, supports selection of specific sections of the health record, and allows healthcare organizations to define the report and/or documents that will comprise the formal health record for disclosure purposes.	**Essential Now**		
S.3	**Administrative and Financial**			-	-	

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.3.1	Encounter/Episode of care management	Manage and document the health care needed and delivered during an encounter/episode of care.	Using data standards and technologies that support interoperability, encounter management promotes patient-centered/oriented care and enables real time, immediate point of service, point of care by facilitating efficient work flow and operations performance to ensure the integrity of: (1) the health record, (2) public health, financial and administrative reporting, and (3) the healthcare delivery process. This support is necessary for direct care functionality that relies on providing user interaction and workflows, which are configured according to clinical protocols and business rules based on encounter specific values such as care setting, encounter type (inpatient, outpatient, home health, etcetera), provider type, patient's EHR, health status, demographics, and the initial purpose of the encounter.			
S.3.1.1	Specialized views	Present specialized views based on the encounter-specific values, clinical protocols and business rules	The system user is presented with a presentation view and system interaction appropriate to the context with capture of encounter-specific values, clinical protocols and business rules. This "user view" may be configurable by the user or system technicians. As an example, a mobile home health care worker using wireless laptop at the patient's home would be presented with a home health care specific workflow synchronized to the current patient's care plan and tailored to support the interventions appropriate for this patient, including chronic disease management protocols.	**Essential Future**		
S.3.1.2	Encounter specific functionality	Provide assistance in assembling appropriate data, supporting data collection and processing output from a specific encounter.	Workflows, based on the encounter management settings, will assist in determining the appropriate data collection, import, export, extraction, linkages and transformation. As an example, a pediatrician is presented with diagnostic and procedure codes specific to pediatrics. Business rules enable automatic collection of necessary data from the patient's health record and patient registry. As the provider enters data, workflow processes are triggered to populate appropriate transactions and documents. For example, data entry might populate an eligibility verification transaction or query the immunization registry.	**Essential Future**		
S.3.1.3	Automatic generation of administrative and financial data from clinical record	Provide patients clinical data to support administrative and financial reporting.	A user can generate a bill based on health record data. Maximizing the extent to which administrative and financial data can be derived or developed from clinical data will lessen provider reporting burdens and the time it takes to complete administrative and financial processes such as claim reimbursement. This may be implemented by mapping of clinical terminologies in use to administrative and financial terminologies.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.3.1.4	Support remote healthcare services	Support remote health care services such as telehealth and remote device monitoring by integrating records and data collected by these means into the patient's EHR for care management, billing and public health reporting purposes.	Enables remote treatment of patients using monitoring devices, and two way communications between provider and patient or provider and provider. - Promotes patient empowerment, self-determination and ability to maintain health status in the community. Promotes personal health, wellness and preventive care. For example, a diabetic pregnant Mom can self-monitor her condition from her home and use web TV to report to her provider. The same TV-internet connectivity allows her to get dietary and other health promoting information to assist her with managing her high-risk pregnancy.	**Optional**		
S.3.2	Information access for supplemental use	Support extraction, transformation and linkage of information from structured data and unstructured text in the patient's health record for care management, financial, administrative, and public health purposes.	Using data standards and technologies that support interoperability, information access functionalities serve primary and secondary record use and reporting with continuous record availability and access that ensure the integrity of (1) the health record, (2) public health, financial and administrative reporting, and (3) the healthcare delivery process.			
S.3.2.1	Rules-driven clinical coding assistance	Make available all pertinent patient information needed to support coding of diagnoses, procedures and outcomes.	The user is assisted in coding information for clinical reporting reasons. For example, a professional coder may have to code the principal diagnosis in the current, applicable ICD as a basis for hospital funding. All diagnoses and procedures during the episode may be presented to the coder, as well as the applicable ICD hierarchy containing these codes.	**Essential Future**		
S.3.2.2	Rules-driven financial and administrative coding assistance	Provide financial and administrative coding assistance based on the structured data and unstructured text available in the encounter documentation.	The user is assisted in coding information for billing or administrative reasons. For example, the HIPAA 837 Professional claim requires the date of the last menstrual cycle for claims involving pregnancy. To support the generation of this transaction, the clinician would need to be prompted to enter this date when the patient is first determined to be pregnant, then making this information available for the billing process.	**Essential Future**		
S.3.2.3	Integrate cost/financial information	Support interactions with other systems, applications, and modules to enable the use of cost management information required to guide users and workflows	The provider is alerted or presented with the most cost-effective services, referrals, devices and etcetera, to recommend to the patient. This may be tailored to the patient's health insurance/plan coverage rules. Medications may be presented in order of cost, or the cost of specific interventions may be presented at the time of ordering.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.3.3	Administrative transaction processing	Support the creation (including using external data sources, if necessary), electronic interchange, and processing of transactions listed below that may be necessary for encounter management during an episode of care	Support the creation (including using external data sources, if necessary), electronic interchange, and processing of transactions listed below that may be necessary for encounter management during an episode of care. > The EHR system shall capture the patient health-related information needed for administrative and financial purposes including reimbursement. >Captures the episode and encounter information to pass to administrative or financial processes (e.g. triggers transmissions of charge transactions as by-product of on-line interaction including order entry, order statusing, result entry, documentation entry, medication administration charting.) > Automatically retrieves information needed to verify coverage and medical necessity. > As a byproduct of care delivery and documentation: captures and presents all patient information needed to support coding. Ideally performs coding based on documentation. > Clinically automated revenue cycle - examples of reduced denials and error rates in claims. > Clinical information needed for billing is available on the date of service. >Physician and clinical teams do not perform additional data entry / tasks exclusively to support administrative or financial processes.			
S.3.3.1	Enrollment of patients	Support interactions with other systems, applications, and modules to enable enrollment of uninsured patients into subsidized and unsubsidized health plans, and enrollment of patients who are eligible on the basis of health and/of financial status in social service and other programs, including clinical trials.	Expedites determination of health insurance coverage, thereby increasing patient access to care. The provider may be alerted that uninsured patients may be eligible for subsidized health insurance or other health programs because they meet eligibility criteria based on demographics and/or health status. For example: a provider is notified that the uninsured parents of a child enrolled in S-CHIP may now be eligible for a new subsidized health insurance program; a provider of a pregnant patient who has recently immigrated is presented with information about eligibility for subsidy. Links may be provided to online enrollment forms. When enrollment is determined, the health coverage information needed for processing administrative and financial documentation, reports or transactions is captured.	Not Applicable		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.3.3.2	Eligibility verification and determination of coverage	Support interactions with other systems, applications, and modules to enable eligibility verification for health insurance and special programs, including verification of benefits and pre-determination of coverage.	Automatically retrieves information needed to support verification of coverage at the appropriate juncture in the encounter workflow. Improves patient access to covered care and reduces claim denials. When eligibility is verified, the EHRS would capture eligibility information needed for processing administrative and financial documentation, reports or transactions - updating or flagging any inconsistent data. In addition to health insurance eligibility, this function would support verification of registration in programs and registries, such as chronic care case management and immunization registries. An EHRS would likely verify health insurance eligibility prior to the encounter, but would verify registration in case management or immunization registries during the encounter.	**Essential Future**		May be through integration with the Practice Management System
S.3.3.3	Service authorizations	Support interactions with other systems, applications, and modules to enable the creation of requests, responses and appeals related to service authorization, including prior authorizations, referrals, and pre-certification.	Automatically retrieves information needed to support verification of medical necessity and prior authorization of services at the appropriate juncture in the encounter workflow. Improves timeliness of patient care and reduces claim denials.	**Optional**		May be through integration with the Practice Management System
S.3.3.4	Support of service requests and claims	Support interactions with other systems, applications, and modules to support the creation of health care attachments for submitting additional clinical information in support of service requests and claims.	Automatically retrieves structured data, including lab, imaging and device monitoring data, and unstructured text based on rules or requests for additional clinical information in support of service requests or claims at the appropriate juncture in the encounter workflow	**Optional**		May be through integration with the Practice Management System
S.3.3.5	Claims and encounter reports for reimbursement	Support interactions with other systems, applications, and modules to enable the creation of claims and encounter reports for reimbursement	Automatically retrieves information needed to support claims and encounter reporting at the appropriate juncture in the encounter workflow.	**Essential Future**		May be through integration with the Practice Management System
S.3.3.6	Health service reports at the conclusion of an episode of care.	Support the creation of health service reports at the conclusion of an episode of care. Support the creation of health service reports to authorized health entities, for example public health, such as notifiable condition reports, immunization, cancer registry and discharge data that a provider may be required to generate at the conclusion of an episode of care.	Effective use of this function means that clinicians do not perform additional data entry to support health management programs and reporting.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.3.4	Manage Practitioner/Patient relationships	Identify relationships among providers treating a single patient, and provide the ability to manage patient lists assigned to a particular provider.	This function addresses the ability to access and update current information about the relationships between caregivers and the subjects of care. This information should be able to flow seamlessly between the different components of the EHRS, and between the EHRS and other systems. Business rules may be reflected in the presentation of, and the access to this information. The relationship among providers treating a single patient will include any necessary chain of authority/responsibility. Example: In a care setting with multiple providers, where the patient can only see certain kinds of providers (or an individual provider); allow the selection of only the appropriate providers. Example: The user is presented with a list of people assigned to a given practitioner and may alter the assignment as required - to a group, to another individual or by sharing the assignment.	**Essential Now**		
S.3.5	Subject to Subject relationship	Capture relationships between patients and others to facilitate appropriate access to their health record on this basis (e.g. parent of a child) if appropriate.	A user may assign the relationship of parent to a person who is their offspring. This relationship may facilitate access to their health record as parent of a young child.			
S.3.5.1	Related by genealogy	Provide information of Related by genealogy (blood relatives)		**Optional**		
S.3.5.2	Related by insurance	Support interactions with other systems, applications, and modules to provide information of Related by insurance (domestic partner, spouse, and guarantor).		**Optional**		
S.3.5.3	Related by living situation	Provide information of Related by living situation (in same household)		**Optional**		
S.3.5.4	Related by other means	Provide information of Related by other means (e.g. epidemiologic exposure or other person authorized to see records, Living Will cases)		**Optional**		
S.3.6	Acuity and Severity	Provide the data necessary for the capability to support and manage patient acuity/severity of illness/risk adjustment		**Essential Future**		
S.3.7	Maintenance of supportive functions	Update EHR supportive content on an automated basis.				
S.3.7.1	Clinical decision support system guidelines updates	Receive and validate formatted inbound communications to facilitate updating of clinical decision support system guidelines and associated reference material		**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
S.3.7.2	Account for patient education material updates	Receive and validate formatted inbound communications to facilitate updating of patient education material		**Essential Now**		
S.3.7.3	Patient reminder information updates	Receive and validate formatted inbound communications to facilitate updating of patient reminder information from external sources such as Cancer or Immunization Registries		**Essential Now**		
S.3.7.4	Public health related updates	Receive and validate formatted inbound communications to facilitate updating of public health reporting guidelines		**Essential Now**		Essential if the public health functionality is implemented
I.1	**Security**	**Secure the access to an EHR-S and EHR information. Manage the sets of access control permissions granted within an EHR-S. Prevent unauthorized use of data, data loss, tampering and destruction.**	To enforce security, all EHR-S applications must adhere to the rules established to control access and protect the privacy of EHR information. Security measures assist in preventing unauthorized use of data and protect against loss, tampering and destruction.	-	-	
I.1.1	Entity Authentication	Authenticate EHR-S users and/or entities before allowing access to an EHR-S.	Both users and application are subject to authentication. The EHR-S must provide mechanisms for users and applications to be authenticated. Users will have to be authenticated when they attempt to use the application, the applications must authenticate themselves before accessing EHR information managed by other applications or remote EHR-S'. In order for authentication to be established a Chain of Trust agreement is assumed to be in place. Examples of entity authentication include: > Username/ password; > Digital certificate; > Secure token; > Biometrics	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.1.2	Entity Authorization.	Manage the sets of access-control permissions granted to entities that use an EHR-S (EHR-S Users). Enable EHR-S security administrators to grant authorizations to users, for roles, and within contexts. A combination of the authorization levels may be applied to control access to EHR-S functions or data within an EHR-S, including at the application or the operating system level.	Entities that use an EHR-S (EHR-S Users) are authorized to use the components of an EHR-S according to identity, role, work-assignment, present condition and/or location in accordance with an entity's scope of practice within a legal jurisdiction. > User based authorization refers to the permissions granted or denied based on the identity of an individual. An example of User based authorization is a patient defined denial of access to all or part of a record to a particular party for reasons such as privacy. Another user based authorization is for a telemonitor device or robotic access to an EHR-S for prescribed directions and other input. > Role based authorization refers to the responsibility or function performed in a particular operation or process. Example roles include: an application or device (telemonitor or robotic); or a nurse, dietician, administrator, legal guardian, and auditor. > Context-based Authorization is defined by ISO as security-relevant properties of the context in which an access request occurs, explicitly time, location, route of access, and quality of authentication. For example, an EHR-S might only allow supervising providers' context authorization to attest to entries proposed by residents under their supervision. In addition to the standard, context authorization for an EHR-S is extended to satisfy special circumstances such as, assignment, consents, or other healthcare-related factors. A context-based example might be a right granted for a limited period to view those, and only those, EHR records connected to a specific topic of investigation.	**Essential Now**		
I.1.3	Entity Access Control	Verify and enforce access control to all EHR-S components, EHR information and functions for end-users, applications, sites, etc., to prevent unauthorized use of a resource, including the prevention or use of a resource in an unauthorized manner.	This is a fundamental function of an EHR-S. To ensure access is controlled, an EHR-S must perform an identity lookup of users or application for any operation that requires it (authentication, authorization, secure routing, querying, etc.) and enforce the system and information access rules that have been defined.			
I.1.3.1	Patient Access Management	Enable a healthcare professional to manage a patient's access to the patient's personal health information. Patient access-management includes allowing a patient access to the patient's information and restricting access by the patient or guardian to information that is potentially harmful to the patient.	A healthcare professional will be able to manage a patient's ability to view his/her EHR, and to alert other providers accessing the EHR about any constraints on patient access placed by this provider. Typically, a patient has the right to view his/her EHR. However, a healthcare provider may sometimes need to prevent a patient (or guardian) from viewing parts of the record. For example, a patient receiving psychiatric care might harm himself (or others) if he reads the doctor's evaluation of his condition. Furthermore, reading the doctor's therapy plan might actually cause the plan to fail.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.1.4	Non-repudiation	Limit an EHR-S user's ability to deny (repudiate) an electronic data exchange originated, received or authorized by that user.	Non-repudiation ensures that an entered or a transferred message has been entered, sent, or received by the parties claiming to have entered, sent or received the message. Non-repudiation is a way to guarantee that the sender of a message cannot later deny having sent the message and that the recipient cannot deny having received the message. Non-repudiation may be achieved through the use of: > Digital signature, which serves as a unique identifier for an individual (much like a written signature). > Confirmation service, which utilizes a message transfer agent to create a digital receipt (providing confirmation that a message was sent and/or received) and > Timestamp, which proves that a document existed at a certain date and time	**Essential Now**		
I.1.5	Secure Data Exchange	Secure all modes of EHR data exchange.	Whenever an exchange of EHR information occurs, it requires appropriate security and privacy considerations, including data obfuscation as well as both destination and source authentication when necessary. For example, it may be necessary to encrypt data sent to remote or external destinations. This function requires that there is an overall coordination regarding what information is exchanged between EHR-S entities and how that exchange is expected to occur. The policies applied at different locations must be consistent or compatible with each other in order to ensure that the information is protected when it crosses entity boundaries within an EHRS or external to an EHRS.	**Essential Now**		
I.1.6	Secure Data Routing	Route electronically exchanged EHR data only to/from known, registered, and authenticated destinations/sources (according to applicable healthcare-specific rules and relevant standards).	An EHR-S needs to ensure that it is exchanging EHR information with the entities (applications, institutions, directories) it expects. This function depends on entity authorization and authentication to be available in the system. For example, a physician practice management application in an EHR-S might send claim attachment information to an external entity. To accomplish this, the application must use a secure routing method, which ensures that both the sender and receiving sides are authorized to engage in the information exchange.	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.1.7	Information Attestation	Manage electronic attestation of information including the retention of the signature of attestation (or certificate of authenticity) associated with incoming or outgoing information.	The purpose of attestation is to show authorship and assign responsibility for an act, event, condition, opinion, or diagnosis. Every entry in the health record must be identified with the author and should not be made or signed by someone other than the author. (Note: A transcriptionist may transcribe an author's notes and a senior clinician may attest to the accuracy of another's statement of events.) Attestation is required for (paper or electronic) entries such as narrative or progress notes, assessments, flow sheets, and orders. Digital signatures may be used to implement document attestation. For an incoming document, the record of attestation is retained if included. Attestation functionality must meet applicable legal, regulatory and other applicable standards or requirements.	**Essential Now**		
I.1.8	Enforcement of Confidentiality	Enforce the applicable jurisdiction's patient privacy rules as they apply to various parts of an EHR-S through the implementation of security mechanisms.	A patient's privacy may be adversely affected when EHRs are not held in confidence. Privacy rule enforcement decreases unauthorized access and promotes the level of EHR confidentiality.	**Essential Now**		
I.2	Health record information and management	Manage EHR information across EHR-S applications by ensuring that clinical information entered by providers is a valid representation of clinical notes; and is accurate and complete according to clinical rules and tracking amendments to clinical document. Ensure that information entered by or on behalf of the patient is accurately represented.	Since EHR information will typically be available on a variety of EHR-S applications, an EHR-S must provide the ability to access, manage and verify accuracy and completeness of EHR information, and provide the ability to audit the use of and access to EHR information.			
I.2.1	Data Retention, Availability and Destruction	Retain, ensure availability, and destroy health record information according to organizational standards. This includes: > Retaining all EHR-S data and clinical documents for the time period designated by policy or legal requirement; >Retaining inbound documents as originally received (unaltered); >Ensuring availability of information for the legally prescribed period of time; and >Providing the ability to destroy EHR data/records in a systematic way according to policy and after the legally prescribed retention period	Discrete and structured EHR-S data, records and reports must be: > Made available to users in a timely fashion; > Stored and retrieved in a semantically intelligent and useful manner (for example, chronologically, retrospectively per a given disease or event, or in accordance with business requirements, local policies, or legal requirements); > Retained for a legally-proscribed period of time; and >Destroyed in a systematic manner in relation to the applicable retention period. An EHR-S must also allow an organization to identify data/records to be destroyed, and to review and approve destruction before it occurs. . It is critically important to ensure that data committed to EHR database is accurate. Extreme values outside of normal ranges can affect the dosing, care planning, and lab triggers within the EHR. In addition, these irrational values can invalidate decision support systems and provide false positives within searches.	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.2.2	Audit trail	Provide audit trail capabilities for resource access and usage indicating the author, the modification (where pertinent), and the date and time at which a record was created, modified, viewed, extracted, or deleted. Audit trails extend to information exchange and to audit of consent status management (to support DC.1.5.1) and to entity authentication attempts. Audit functionality includes the ability to generate audit reports and to interactively view change history for individual health records or for an EHR-S.	Audit functionality extends to security audits, data audits, audits of data exchange, and the ability to generate audit reports. Audit trail settings should be configurable to meet the needs of local policies. Examples of audited areas include: > Security audit, which logs access attempts and resource usage including user login, file access, other various activities, and whether any actual or attempted security violations occurred; > Data audit, which records who, when, and by which system an EHR record was created, updated, translated, viewed, extracted, or (if local policy permits) deleted. Audit-data may refer to system setup data or to clinical and patient management data; and > Information exchange audit, record data exchanged between EHR-S applications (for example, sending application; the nature, history, and content of the information exchanged); and information about data transformations (for example, vocabulary translations, reception event details, etc.). > Audit reports should be flexible and address various users' needs. For example, a legal authority may want to know how many patients a given healthcare provider treated while the provider's license was suspended. Similarly, in some cases a report detailing all those who modified or viewed a certain patient record may be needed. > Security audit trails and data audit trails are used to verify enforcement of business, data integrity, security, and access-control rules. There is a requirement for system audit trails for the following events: > Loading new versions of, or changes to, the clinical system; > Loading new versions of codes and knowledge bases; > Changing the date and time where the clinical system allows this to be done; > Taking and restoring of backup; > Archiving any data; > Re-activating of an archived patient record; > Entry to and exiting from the clinical system; > Remote access connections including those for system support and maintenance activities	**Essential Now**		
I.2.3	Synchronization	Maintain synchronization involving: >Interaction with entity directories; >Linkage of received data with existing entity records; >Location of each health record component; and >Communication of changes between key systems.	An EHR-S may consist of a set of components or applications; each application manages a subset of the health information. Therefore it is important that, through various interoperability mechanisms, an EHR-S maintains all the relevant information regarding the health record in synchrony. For example, if a physician orders an MRI, a set of diagnostic images and a radiology report will be created. The patient demographics, the order for MRI, the diagnostic images associated with the order, and the report associated with the study must all be synchronized in order for the clinicians to view the complete record.	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.2.4	Extraction of health record information	Manage data extraction in accordance with analysis and reporting requirements. The extracted data may require use of more than one application and it may be pre-processed (for example, by being de-identified) before transmission. Data extractions may be used to exchange data and provide reports for primary and ancillary purposes.	An EHR-S enables an authorized user, such as a clinician, to access and aggregate the distributed information, which corresponds to the health record or records that are needed for viewing, reporting, disclosure, etc. An EHR-S must support data extraction operations across the complete data set that constitutes the health record of an individual and provide an output that fully chronicles the healthcare process. Data extractions are used as input to continuity of care records. In addition, data extractions can be used for administrative, financial, research, quality analysis, and public health purposes.	**Essential Future**		
I.3	**Unique identity, registry, and directory services**	**Enable secure use of registry services and directories to uniquely identify and supply links for retrieval and to identify the location of subjects of care: patients and providers for health care purposes; payers, health plans, sponsors, employers and public health agencies for administrative and financial purposes; and health care resources and devices for resource management purposes.**	Unique identity, registry, and directory service functions are critical to successfully managing the security, interoperability, and the consistency of the health record data across an EHR-S.	-	-	
I.3.1	Distributed registry access	Enable system communication with registry services through standardized interfaces and extend to services provided externally to an EHR-S.	An EHR-S relies on a set of infrastructure services, directories, and registries, which may be organized hierarchically or federated, that support communication between EHR-S'. For example, a patient treated by a primary care physician for a chronic condition may become ill while out of town. The new provider's EHR-S interrogates a local, regional, or national registry to find the patient's previous records. From the primary care record, a remote EHR-S retrieves relevant information in conformance with applicable patient privacy and confidentiality rules. An example of local registry usage is an EHR-S application sending a query message to the Hospital Information System to retrieve a patient's demographic data.	**Essential Future**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.4	Health Informatics and Terminology Standards	Ensure consistent terminologies, data correctness, and interoperability in accordance with realm specific requirements by complying with standards for health care transactions, vocabularies, code sets, as well as artifacts such as: templates, system interfaces, decision support syntax and algorithms, and clinical document architecture. Support reference to standard and local terminologies and their versions in a manner that ensures comparable and consistent use of vocabulary, such as the Common Terminology Services specification.	Examples that an EHR-S needs to support are a consistent set of terminologies such as: LOINC, SNOMED, applicable ICD, CPT and messaging standards such as X12 and HL7. Vocabularies may be provided through a terminology service internal or external to an EHR-S.	-	-	
I.4.1	Maintenance and versioning of health informatics and terminology standards.	Enable version control according to customized policies to ensure maintenance of utilized standards.	Version control allows for multiple sets or versions of the same terminology to exist and be distinctly recognized over time. Terminology versioning supports retrospective analysis and research as well as interoperability with systems that comply with different releases of the standard. Similar functionality must exist for messaging and other informatics based standards. It should be possible to retire deprecated versions when applicable business cycles are completed while maintaining obsolescent code sets for possible claims adjustment throughout the claim's lifecycle.	Optional		
I.4.2	Mapping local terminology, codes, and formats	Map or translate local terminology, codes and formats to standard terminology, codes, and formats to comply with health informatics standards.	An EHR-S, which uses local terminology, must be capable of mapping and/or converting the local terminology into a standard terminology. For example, a local term or code for "Ionized Calcium" must be mapped to an equivalent, standardized (LOINC) term or code when archiving or exchanging artifacts.	Essential Future		
I.5	Standards-based Interoperability	Provide automated health delivery processes and seamless exchange of key clinical and administrative information through standards-based solutions.	Interoperability standards enable an EHR-S to operate as a set of applications.	-	-	

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.5.1	Interchange Standards	Support the ability to operate seamlessly with complementary systems by adherence to key interoperability standards. Systems may refer to other EHR-S', applications within an EHR-S, or other authorized entities that interact with an EHR-S.	An EHR-S must adhere to standards for connectivity, information structures, and semantics ("interoperability standards"). An EHR-S, which may exist locally or remotely, must support seamless operations between complementary systems. An EHR-S must support realm specific interoperability standards such as: HL7 Messages, Clinical Document Architecture (CDA), X12N healthcare transactions, CCR, and Digital Imaging and Communication in Medicine (DICOM). An EHR-S must be capable of common semantic representations to support information exchange. An EHR-S may use different standardized or local vocabularies in accordance with realm specific requirements. In order to reconcile the semantic differences across vocabularies, an EHR-S must adhere to standard vocabulary or leverage vocabulary lookup and mapping capabilities that are included in the Health Informatics and Terminology Standards. An EHR-S must support multiple interaction modes to respond to differing levels of immediacy and types of exchange. For example, messaging is effective for many near-real time, asynchronous data exchange scenarios but may not be appropriate if the end-user is requesting an immediate response from a remote application. In addition, in the case where store-and-forward, message-oriented interoperability is used; the applications may need to support the appropriate interaction mode. For example: Unsolicited Event Notifications, Query/Response, Query for display, Unsolicited summary, structured/discrete, and unstructured clinical documents.	**Essential Now**		
I.5.2	Standards-based Application Integration	Provide integration with complementary systems and infrastructure services (directory, vocabulary, etc.) using standard-based application programming interfaces (for example, CCOW).	Similar to standard-based messaging, standard-based application integration requires that an EHR-S use standardized programming interfaces, where applicable. For example, CCOW may be used for visual integration and WfMC for workflow integration.	**Essential Future**		
I.5.3	Interchange Agreements	Support interaction with entity directories to determine the recipients' address profile and data exchange requirements, and use these rules of interaction when exchanging information with partners.	An EHR-S uses the entity registries to determine the security, addressing, and reliability requirements between partners. An EHR-S uses this information to define how data will be exchanged between the sender and the receiver.	**Essential Now**		

ID	Title	Statement	Description	Ambulatory EHR		
				Priority Level	Response (0 thru 5)	Comments
I.6	Business Rules Management	Manage the ability to create, update, delete, and version business rules including institutional preferences. Apply business rules from necessary points within an EHR-S to control system behavior. An EHR-S audits changes made to business rules, as well as compliance to and overrides of applied business rules.	An EHR-S business rule implementation functions include: decision support, diagnostic support, workflow control, access privileges, as well as system and user defaults and preferences. An EHR-S supports the ability of providers and institutions to customize decision support components such as triggers, rules, or algorithms, as well as the wording of alerts and advice to meet realm specific requirements and preferences. Examples of applied business rules include: > Suggesting diagnosis based on the combination of symptoms (flu-like symptoms combined with widened mediastinum suggesting anthrax); > Classifying a pregnant patient as high risk due to factors such as age, health status, and prior pregnancy outcomes; > Sending an update to an immunization registry when a vaccination is administered; > Limiting access to mental health information to a patient's psychiatrist/psychologist; > Establishing system level defaults such as for vocabulary data sets to be implemented.; and > Establishing user level preferences such as allowing the use of health information for research purposes.	**Optional**		
I.7	Workflow Management	Support workflow management functions including both the management and set up of work queues, personnel, and system interfaces as well as the implementation functions that use workflow-related business rules to direct the flow of work assignments.	Workflow management functions that an EHR-S supports include: > Distribution of information to and from internal and external parties; > Support for task-management as well as parallel and serial task distribution; > Support for notification and task routing based on system triggers; and > Support for task assignments, escalations and redirection in accordance with business rules. Workflow definitions and management may be implemented by a designated application or distributed across an EHR-S.	**Essential Future**		

Appendix C. Additional Terms

If the Collaborative selects Vendor to provide the services ("Services") and/or the software, interfaces, documentation and other materials (collectively, "Deliverables") that are the subject of Vendor's response to this Request for Proposal, the terms on which the Services and/or Deliverables shall be provided shall include the following in a written agreement (the "Master Agreement"). Please note that the following is a non-exclusive description of provisions that the Collaborative shall require.

1. **Disclosure of Relationships.**

(a) Vendors will be required to disclose both in their responses and in the ultimate contract any and all activities aimed at soliciting physicians within one or more of the selected Communities as well as disclosure of any and all financial, board representation and other kinds of relationships and contacts made with physicians and/or Communities.

(b) Vendors are discouraged from soliciting physicians. Contact with physicians should be coordinated through the Collaborative and/or a Community representative and not to the physicians directly.

2. **Ownership of Data and Intellectual Property.**

(a) As between the Collaborative and the Vendor, the Collaborative shall be the sole and exclusive owner of all data, information, reports and Deliverables developed for or in connection with the Master Agreement, the Services and/or the activities of the Collaborative. Software developed prior to the execution of the Master Agreement ("Pre-existing Software") shall continue to be owned by the person or entity that owned it prior to execution.

(b) Each Deliverable (other than Pre-existing Software) shall be deemed a "work for hire" or shall be assigned by Vendor to the Collaborative as soon as created or conceived. All intellectual property rights in each such Deliverable shall be the sole and exclusive property of the Collaborative, including copyright, patent, and trade secret or other proprietary rights.

3. **Warranties**.

(a) Service and Performance Warranty. Vendor represents, warrants and covenants that (i) it shall perform the Services in a timely, competent and workmanlike manner in accordance with the service levels and other standards set forth in the Master Agreement and (ii) that all Deliverables will perform in accordance with the applicable documentation, functional specifications, and/or requirements set forth in the Master Agreement. The description of the Services and Deliverables in the Vendor's Response to the Collaborative's Request for Proposal shall be included in the Master Agreement for purposes of this warranty.

(b) Pass-Through Warranty. If applicable, Vendor shall pass through to the Collaborative any product and third party end-user warranties and indemnities. To the extent Vendor is not permitted to pass-through such warranties, Vendor agrees to enforce such warranties and indemnities on behalf of Collaborative.

(c) Warranty of Title and Ability to License. Vendor represents, warrants and covenants that it has and shall maintain full authority to license and/or sublicense the Pre-existing

Software and that the Collaborative shall receive good title to all other Deliverables, free of any security interests, liens or other claims of third parties.

(d) Intellectual Property Warranty. Vendor represents, warrants and covenants that the Services and Deliverables do not and will not infringe upon and are free from any claim by any third party of infringement or misappropriation of any patent, trademark, copyright, trade secret or any other proprietary right of any third party.

(e) Virus Warranty. Vendor represents, warrants and covenants that it will use (and, if applicable, cause subcontractors to use) commercially reasonable efforts to maintain all Deliverables and provide all Services, free of software viruses, disabling code or similar items.

(f) Mutual Warranties. Each party represents and warrants to the other that: (a) it is validly existing under the laws of the state of its organization and has full power and authority to enter into the Master Agreement and to carry out the provisions thereof; (b) it is duly authorized to execute and deliver the Master Agreement and to perform its obligations hereunder; (c) the Master Agreement is a legal and valid obligation binding upon it and enforceable according to its terms; and (d) the execution, delivery and performance of the Master Agreement by such party does not conflict with any agreement, instrument or understanding by which it may be bound.

4. **Delivery of Items and Services to Eligible Participants**

Vendor shall provide the Deliverables and the Services on the terms set forth in the Master Agreement to all persons and entities designated as "Eligible Participants" from time to time by the Collaborative. The prices charged and terms provided by Vendor to such Eligible Participants shall be determined pursuant to the Master Agreement but shall be set forth in separate agreements between each Eligible Participant and Vendor. The Collaborative shall be a party to such separate agreements only if the Collaborative elects in writing to do so. Collaborative's and/or the physicians' obligations as applicable, if any, shall not extend beyond July 1, 2008 at their respective discretion.

The pricing provided to the Eligible Participants shall include all amounts due and payable for the Services, Deliverables and related implementation and training services.
Each Eligible Participant shall have the right to obtain some or all of the Services and/or Deliverables in its sole discretion. The Collaborative does not commit that any of the Eligible Participants shall elect to receive any of the Services and/or Deliverables.

5. **Term**.

The Master Agreement shall be in effect for 60 months from the date hereof unless terminated earlier by either of the parties in the event of a breach by the non-terminating party that is not cured after written notice from the terminating party. The cure period shall be thirty (30) days except to the extent that a shorter cure period may be appropriate to comply with applicable law or minimize the risk of material error.

Termination of the Master Agreement by Vendor shall not affect any agreement between Vendor and an Eligible Participant regardless of whether the Collaborative is a party to such agreement.

In order to avoid any interruption of service that could adversely affect patient care, the Collaborative and the Vendor shall each continue to honor its obligations under the Master Agreement despite any dispute between them unless a court or arbitrator, if applicable, issues an order that such obligations are terminated.

If the Master Agreement includes a license of software, Vendor shall agree to support such software at the rates and on the terms set forth in the Master Agreement. Such support shall be provided on a 24 x 7 x 365 basis with appropriate response times and escalation procedures depending on the severity of the problem.

Upon termination of the Master Agreement for any reason, Vendor shall, to the extent reasonably requested by the Collaborative, provide services to achieve a smooth transition for up to 24 months at the rates specified in the Master Agreement.

6. **Compliance with Law; Certification**.

Vendor shall at all times comply with all applicable laws and comply with all legal requirements that the Collaborative reasonably identifies in writing as necessary or advisable in order to assure compliance with law by the Collaborative and/or the Eligible Participants. Such requirements include:

(a) if applicable, provisions that a covered entity is required to include in a contract with Vendor as a business associate pursuant to the privacy and security rules adopted under HIPAA (the Health Insurance Portability and Accountability Act of 1996),

(b) certification that the Vendor is not excluded from participation in any federally funded program, and

(c) any access to records or other provisions that the Collaborative or any Eligible Participant is required to impose on subcontractors such as Vendor in accordance with state or federal law.

Vendor shall, at its sole cost and expense, obtain and maintain certification under the applicable standards set forth from time to time by appropriate standards organizations reasonably identified by the Collaborative during the term of the Master Agreement.

7. **Confidentiality**.

Protected health information that is subject to HIPAA and/or applicable state privacy laws shall be subject to appropriate business associate provisions. The Master Agreement shall also include appropriate language to protect the confidential and proprietary information of Vendor, the Collaborative and each of the Eligible Participants that is not protected health information.

8. **No Assignment or Subcontracting**.

No rights or obligations under the Master Agreement may be assigned, subcontracted or otherwise delegated by Vendor to any third party without the prior written consent of the Collaborative. Vendor shall not perform any of the Services outside the United States without the prior written consent of the Collaborative.

9. **Insurance**.

Vendor shall maintain insurance during the term of the Master Agreement in types and amounts typically maintained by providers of the Deliverables and Services, including workers compensation insurance as required by applicable law. At the Collaborative's request, Vendor shall cause the Collaborative to be added to such policies of insurance (other than workers compensation insurance) as an additional named insured.

10. **Financial Information**.

If annual and quarterly financial statements of Vendor are not available from SEC filings, Vendor shall provide comparable financial information to the Collaborative promptly after the end of Vendor's fiscal year and each fiscal quarter during the term of the Master Agreement.

11. **Source Code Escrow**.

If deemed appropriate by the Collaborative, vendor shall establish a source code escrow (or include the Collaborative as a beneficiary of an existing source code escrow) in order to assure the uninterrupted operation of the Deliverables and Services; despite any failure or inability of Vendor to support any Deliverables or provide Services. The source code deposited in such an escrow shall be updated on a monthly basis and shall include such documentation and may be necessary to enable a third party to operate the Deliverables and/or provide the Services without interruption.

12. **Pricing**.

The pricing offered to the Collaborative shall be inclusive of all license fees, costs of equipment, telecommunication services, project plan development and project management, implementation, training, manuals and other documentation, taxes and all other costs and expenses. Initial payments shall be due in installments as milestones are achieved, including acceptance testing satisfactory to the Collaborative. Payment for continuing services shall be subject to reduction by specific performance credits if agreed upon service levels are not achieved.

13. **Indemnification**.

Vendor shall fully indemnify, defend and hold harmless the Collaborative and its members, officers, directors, agents, employees and representatives against any claim that any of the Deliverables and/or Services or any portion thereof infringes or misappropriates any patent, copyright, trade mark, trade secret or other proprietary rights of a third party or that Vendor has breached its confidentiality, privacy or security obligations under the Master Agreement, including attorneys fees to defend such claim.

Vendor also agrees to indemnify, defend and hold harmless the Collaborative and its members, officers, directors, agents, employees and representatives against any claim arising from any act or omission of the indemnifying party that results in an injury to or death of any person in connection with the Deliverables or performance of the Services, except to the extent that such claim arose from an act or omission of the Collaborative.

Any right to receive indemnification hereunder shall be subject to the indemnified party providing prompt notice of the claim and reasonable cooperation to the indemnifying party.

Vendor shall also include substantially similar indemnification in its agreements with Eligible Participants.