
COV-HIE
Technical Infrastructure

Draft 1 – September 9, 2009

Version 4

DRAFT

DRAFT

COV-HIE Technical Infrastructure

Table of Contents

| | |
|--|---------|
| Introduction..... | Page 4 |
| HITSP Capability 119 Table | Page 6 |
| Current State | Page 9 |
| Proposed Project Summary | Page 10 |
| HITSP Interoperability Standards | Page 11 |
| Privacy & Security | Page 12 |
| Patient Identification | Page 13 |
| Network | Page 14 |
| Architectural Models | Page 15 |
| Barriers | Page 16 |
| Coded Healthcare Vocabularies | Page 16 |
| Exhibits (Sent in a separate attachment) | |
| A: Summary of HITSP Capabilities | |
| B: HITSP Interoperability Specifications | |
| C: ITSP / IS04 | |
| D: HITSP / C28 | |
| E: PCC TF-1/EDES | |
| F: References | |
| G: 2009 PQRI | |
| H: HITSP Background Summary | |
| I: HITSP / CAP119 | |
| J: Value Set Definitions | |

DRAFT

COV-HIE Technical Infrastructure

I. Introduction:

This draft white paper has been prepared to provide a basis for discussion and subsequent recommendations to address the technical architecture for a Commonwealth of Virginia statewide Health Information Exchange, COV-HIE. The specific focus is to identify approaches and standards which could be applicable to COV-HIE. This draft document is being provided at the earliest draft to enable as much time as possible for review, collaboration, further development, and comment.

This document is divided into two sections:

1. The first section provides an explanation of how HITSP is harmonizing the various industry standards to support the requirements of ARRA. The objective of this section is to be able to understand and recommend to the COV stakeholders, what standards will need to be implemented in order to connect to the COV-HIE and NHIN. To show how HITSP has harmonized one set of standards, capability 119 – Communicate Structured Documentation will be presented at an overview level.
2. The second section is designed to be able to pull standard pieces forward for the technical architecture component of the funding proposal. The blue text is copied from the grant announcement as a framework: American Recovery and Reinvestment Act of 2009, Title XIII - Health Information Technology, Subtitle B – Incentives for the Use of Health Information Technology, Section 3013, State Grants to Promote Health Information Technology, State Health Information Exchange Cooperative, Agreement Program, Funding Opportunity Announcement, Office of the National Coordinator for Health Information Technology Department of Health and Human Services 2009. Using the grant format as a framework will facilitate and expedite subsequent incorporations as appropriate into the funding proposal. This white paper does not address the reasons/benefits of an HIE. Of the five domains noted in the grant announcement, this white paper addresses one domain, Technical Infrastructure and does not address the other four domains of Governance, Finance, Business and Technical Operations, and Legal/policy.

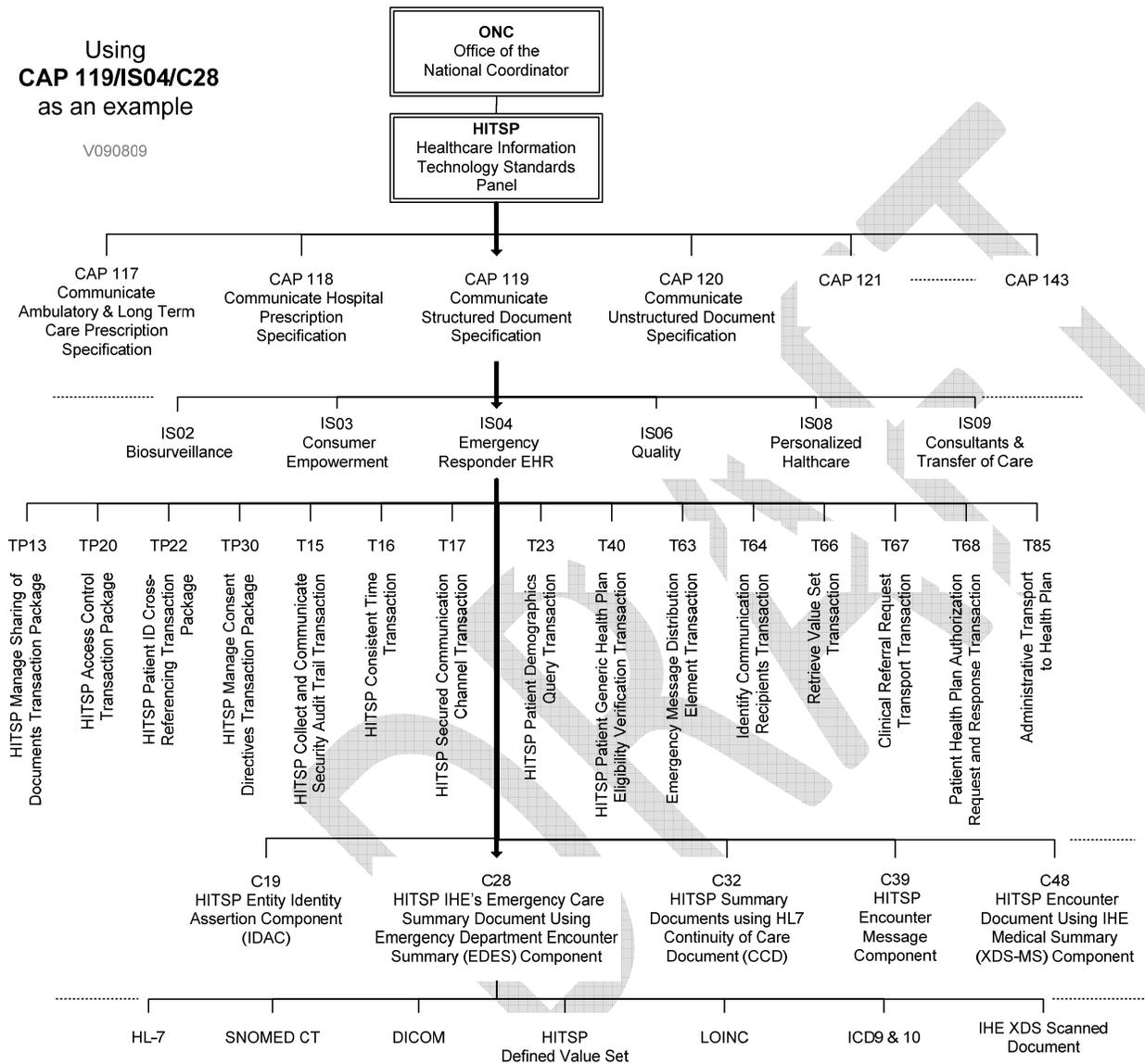
A possible approach to prioritizing standards recommendations would be to start with the seven electronic exchanges expected to be required by 2011, and creating a decision point check list of items to accomplish those exchanges. For example will the COV-HIE provide a Record Locator Service, will Surescripts be the first pharmacy network in use, will patient identification be provided using the EDI standard already selected by VHEN? What are all the exiting RHIO or community HIE's that need to be included?

Section 1. HITSP Harmonization Orientation: In July 2009, HITSP reorganized its work on 13 Interoperability Specifications (IS) and 60 related constructs into 26 Capabilities (CAP), to consolidate all information exchanges that involve an Electronic Health Record System. This work effort was organized around ARRA requirements in Title XIII (HITECH) Section 3000 Required Areas for Consideration; and Medicare and Medicaid Incentives defined in ARRA Title IV (Division B). To better understand the harmonization process, the following table drills down through one example, Capability 119 – Communicate Structured Documentation. Exhibit A provides a summary of HITSP Capabilities. Further information about HITSP and how the Capabilities are targeted for HIE use is provided in this document.

DRAFT

Using
CAP 119/IS04/C28
as an example

V090809



DICOM Imaging not included CAP119, need to implement CAP128

CAPABILITIES

CONSTRUCTS

Interoperability Specifications

Messaging: Transactions & Transaction Packages

Components

CODED HEALTH CARE VOCABULARIES

DRAFT

This table shows the drill down of HITSP Capability 119. Capability 119 Communicate Structured Documentation is made up of several use cases or eleven Interoperability Specification. These are: IS 04 Emergency Responder Electronic Health Record; IS 08 Personalized Healthcare; IS 09 Consultations and Transfers of Care; IS 02 Biosurveillance; IS 06 Quality; IS 10 Immunizations and Response Management; IS 11 Public Health Case Reporting; IS 03 Consumer Empowerment; IS 05 Consumer Empowerment and Access to Clinical Information via Media; IS 07 Medication Management; and IS 77 Remote Monitoring. A list of Interoperability Specifications and their description is provided in Exhibit B.

The next level to review is Interoperability Standard IS 04 Emergency Responder EHR. The construct within IS 04 are listed in Exhibit C. This layer is where the transactions are brought together. Exhibit D is the HITSP Emergency Care Summary Document Using IHE Emergency Department Encounter Summary (EDES) Component, and Exhibit E is the IHE Patient Care Coordination EDES Technical Framework Supplement.

One of the significant barriers to healthcare interoperability is the variety and complexity of standards to implement. HITSP has mapped the standards for healthcare interoperability to provide a “roadmap”, but there is still a significant effort to understand, plan, and program EHR’s for implementation. The lack of user friendly tools and trained informaticists could delay standards adoption. Exhibit F provides a list of sources for locating industry standards.

Section 2. Technical Infrastructure: While interoperability standards and architectures for an HIE are in developmental stages, there is enough information available to determine strategic direction, approach, and implementation planning. These emerging standards and technologies should be continually monitored for recommendation/adoption.

Areas for review, development, and recommendation:

1. HITSP Interoperability Standards
2. Privacy and Security
3. Patient Identification
4. Network
5. Architectural Models for Data and Centralized Services
6. Barriers and Possible Solutions
7. Coded Healthcare Vocabularies

Please provide comments to Nadine Hoffman

Current State:

- Discuss and determine the current status of the state's progress in achieving statewide HIE among healthcare providers, including:
 - Electronic eligibility and claims transactions – The Virginia Health Exchange Network (VHEN) is a collaboration of Virginia health plans and health systems dedicated to lowering administrative costs in healthcare convened by the Virginia Association of Health Plans (VHAP), the Virginia Hospital and Healthcare Association (VHHA) and the Governor's Office of Health IT.
 - Electronic prescribing and refill requests – A Surescripts vendor based pharmacy network exists in the state. The HIE should be capable of retrieving medication history and not duplicate the e-prescribing function a pharmacy network provides.
 - Electronic clinical laboratory ordering and results delivery.
 - Electronic public health reporting (immunizations, notifiable laboratory results). The COV utilizes a system known as the Virginia Immunization Information System (VIIS) to track immunizations. This application was developed in Wisconsin under a CDC grant and is used in 20 states. The system utilizes SNOMED CT, NIP table values (National Immunization Program), CPT, CVX, LOINC, FIPS (Federal Information Processing Standard), and HL7 standards.
 - Quality reporting capabilities. Inpatient Hospitals report to CMS Physician Quality Reporting Initiative (PQRI) quality measures. The 2009 PQRI consists of 153 quality measures and is explained in Exhibit G. Health Systems are also surveyed and report core measures to the Joint Commission's ORYX quality initiative.
 - Prescription fill status and/or medication fill history. A Surescripts vendor based pharmacy network exists in the state. The HIE should be capable of retrieving medication history and not duplicate the e-prescribing function a pharmacy network provides.
 - Clinical summary exchange for care coordination and patient engagement. Providers that share the EPIC systems EMR will have this capability between them, but it will need to be extended to fully achieve the objectives of the state HIE. In addition, there are existing RHIO's and Community HIE's such as NOVA which will need to be included in the COV-HIE planning.
- Leverage existing regional and state level efforts and resources that can advance HIE, such as master patient indexes, health information organizations (HIOs), and the Medicaid Management Information System (MMIS).
- Develop or facilitate the creation and use of shared directories and technical services, as applicable for the state's approach for statewide HIE. Directories may include but are not limited to: Providers (e.g., with practice location(s), specialties, health plan participation, disciplinary actions, etc), Laboratory Service Providers, Radiology Service Providers, Health 13 Plans (e.g., with contact and claim submission information, required laboratory or diagnostic imaging service providers, etc.). Shared Services may include but are not limited to: Patient Matching, Provider Authentication, Consent Management, Secure Routing, Advance Directives and Messaging.

The Commonwealth of Virginia has **xx** current initiatives underway to provide Health Information Exchange. These include the VIIS immunization registry, VHEN for financial administrative transactions, Carespark, Med Virginia, and vendor enabled health information exchanges such as Epic. (we need to get information on each to document current state for the grant.)

Proposed Project Summary

Articulate the rationale for the overall approach to the project. Also note any major barriers anticipated to be encountered and how the project will be able to overcome those barriers. Include all portions required but applicants may frame their answers according to their current status (whether the state has an existing plan or intends to develop or finalize one using federal funds).

Domain Requirements

- **Technical Infrastructure**

- **Standards and Certifications** – Describe efforts to become consistent with HHS adopted interoperability standards and any certification requirements, for projects.
- **Technical Architecture** – Requirements to ensure statewide availability of HIE among healthcare providers, public health and those offering service for patient engagement and data access. Protection of health data. This needs to reflect the business and clinical requirements determined via the multi-stakeholder planning process. Specify how the architecture will align with NHIN core services and specifications.
- **Technology Deployment** – Develop HIE capacity, enable meaningful use, indicate efforts for nationwide health information exchange. If a state plans to participate in the Nationwide Health Information Network (NHIN), their plans must specify how they will be compliant with HHS adopted standards and implementation specifications.
(<http://healthit.hhs.gov/meaningfuluse>)
-

(Do we want to start with a set of guiding principles, e.g. comply with industry standards, HIPAA, etc.?)

As stated in the Funding Opportunity Announcement, “widespread adoption and meaningful use of HIT is one of the foundational steps in improving the quality and efficiency of health care. The appropriate and secure electronic exchange and consequent use of health information to improve quality and coordination of care is a critical enabler of a high performance health care system. The overall purpose of this program, as authorized by Section 3013 of the PHS Act, as added by ARRA, is to facilitate and expand the secure, electronic, movement and use of health information among organizations according to nationally recognized standards. The governance, policy and technical infrastructure supported through this program will enable standards-based HIE and a high performance health care system.”

This white paper will compile the technical infrastructure for the COV-HIE interoperability to consider, specifically addressing:

1. HITSP Interoperability Standards
2. Privacy and Security
3. Patient Identification
4. Network
5. Architectural Models for Data and Centralized Services
6. Barriers and Possible Solutions
7. Coded Healthcare Vocabularies

The standards committee will make the final decision on which standards and approaches to recommend for the COV-HIE.

1. HITSP Interoperability Standards

The Commonwealth recognizes the multiple stakeholders who would participate and receive benefit from a state wide HIE which connects to healthcare related stakeholders, community HIE's, and the NHIN. To achieve a successful HIE, stakeholders HIT functions need to be sequenced, and relative industry standards need to be adopted as those functions are implemented. HITSP has been actively working to harmonize the relevant standards. Exhibit H provides a background summary for HITSP.

On July 8, 2009 HITSP approved HITSP/IS107 – EHR Centric Interoperability Specification. This specification contains 26 Capabilities (CAP) that support the workflow, information content, infrastructure, and security and privacy requirements laid out in the ARRA legislation. HITSP capabilities also addressed the “meaningful use” of health information technologies. The following table from HITSP has been modified to include a COV-HIE recommended solution column.

| Map of Requirements to Capabilities ^[2] | | ARRA 3002(b)(2)(B) | | | | | | | | Meaningful use Health Outcomes Priorities | | | | | COV – HIE Recommendations |
|--|--|-----------------------------------|---|--------------------------------|---|--|--|-----------------------------------|--|---|----------------------------|----------------------|------------------------------|----------------------|---------------------------|
| Capability # | Capability Name | (i) Protect Security & Privacy | (ii) Exchange & Integrate Health Information | (iii) Certified EHR by 2014 | (iv) Disclosure Audit (per HIPAA for covered entities) | (v) Improve Quality and Population Health | (vi) PHI Rendered Unusable by Unauthorized Individual | (vii) Patient Demographic Data | (viii) Needs of Children and Vulnerable | Quality Safety, Efficiency, Reduce Health Disparities | Engage Patients & Families | Coordination of Care | Population and Public Health | Security and Privacy | |
| CAP117 | Communicate Ambulatory and Long Term Care Prescription | X | | X | X | X | X | | | X | | | | X | Phase 1 |
| CAP118 | Communicate Hospital Prescription | X | | X | X | X | X | | | X | | | | X | Phase 1 |
| CAP119 | Communicate Structured Document | X | X | X | X | X | X | X | X | X | X | X | X | X | Phase 1 |
| CAP120 | Communicate Unstructured Document | X | X | X | X | X | X | X | X | X | X | X | X | X | Phase 1 |
| CAP121 | Communicate Clinical Referral Request | X | X | X | X | X | X | | | X | | X | | X | |
| CAP122 | Retrieve Medical Knowledge | | | X | | X | | | | X | X | | | | |
| CAP123 | Retrieve Existing Data | X | X | X | X | X | X | | | X | | X | | X | |
| CAP124 | Establish Secure Web Access | X | X | X | | X | | | X | X | | X | | X | |
| CAP125 | Retrieve Genomic Decision Support | X | | | X | X | X | X | X | X | X | | | X | |
| CAP126 | Communicate Lab Results Message | X | X | X | X | X | X | | | | | X | X | X | Phase 1 |
| CAP127 | Communicate Lab Results Document | X | X | X | X | X | X | | | X | X | X | | X | Phase 1 |
| CAP128 | Communicate Imaging Information | X | X | X | X | X | X | | | X | | X | | X | |
| CAP129 | Communicate Quality Measure Data | X | | X | X | X | X | | | X | | | | X | |
| CAP130 | Communicate Quality Measure Specification | | | X | | X | | | | X | | | | | Phase 1 |
| CAP131 | Update Immunization Registry | X | | X | X | X | X | | X | | | | X | X | |
| CAP132 | Retrieve Immunization Registry Information | X | | X | X | X | X | | X | X | | | X | X | |
| CAP133 | Communicate Immunization Summary | X | X | X | X | X | X | | X | X | | X | X | X | |
| CAP135 | Retrieve and Populate Form | X | | X | X | X | X | | X | X | | | X | X | |
| CAP136 | Communicate Emergency Alert | | | X | | X | | | | X | | | X | | |
| CAP137 | Communicate – Encounter Information Message | X | | X | X | X | X | | | | | | X | X | |
| CAP138 | Retrieve Pseudonym | X | | X | X | X | X | | | | | | X | X | |
| CAP139 | Communicate Resource Utilization | | X | X | | X | | | | X | | X | X | | |
| CAP140 | Communicate Benefits and Eligibility | X | X | X | X | X | X | X | X | X | | X | | X | Phase 1 |
| CAP141 | Communicate Referral Authorization | X | X | X | X | X | X | X | X | X | | X | | X | |
| CAP142 | Retrieve Communications Recipient | | X | X | | X | | | | X | X | X | | | |
| CAP143 | Manage Consumer Preference and Consents | X | | X | X | X | X | | X | X | X | X | | X | |

The Office of the National Coordinator for Health Information Technology has recommended seven different electronic exchanges to be required by 2011: ePrescribing, lab results, clinical data summaries (problems, medications, allergies, laboratory reports) from provider to provider, Biosurveillance, immunization registries, public health, and quality measurement. These are listed as Phase 1 items on the modified table above. Other functional areas will be identified and sequenced in the COV planning effort.

HITSP chair Dr. John Halamka has stated that HITSP will continue to work closely with ONC to respond to ARRA and meaningful use requirements. HITSP Capability CAP 119 Communicate Structured Document is presented in Exhibit I to show how the various standards are harmonized for this content delivery in an HIE.

During implementation planning, performance measures will need to be identified to show the degree of provider, payor, public health, pharmacy, clinical laboratory, and other stake holder participation in the COV- HIE enabled state level technical services. For example, one measure would be the percent of pharmacies serving people within the state that are actively utilizing the electronic prescribing and refill requests.

2. Privacy and Security

As stated in the Funding Opportunity Announcement, “Privacy and security of health information, including confidentiality, integrity and availability of information, are integral to fostering health information exchange.”

The COV-HIE plans to incorporate the privacy and security provisions of the following:

- the ARRA specific privacy and security provisions related to security breach restrictions and disclosures, sales of health information, consumer access, business associate obligations and agreements
- the HIPAA Privacy Rule for permitted uses and disclosures and individual rights related to protected health information.
- the HIPAA Security Rule for administrative, technical, and physical security procedures,
- the Confidentiality of Alcohol and Drug Abuse Patient Records Regulations for substance abuse treatment programs.
- the HHS Privacy and Security Framework for a single consistent approach to address the privacy and security challenges related to electronic health information exchange.
- the various federal requirements for protection of health data for federal health care delivery organizations such as the Department of Veterans Affairs and the Department of Defense.

Exhibit F provides the links and references for these provisions. The COV-HIE will provide services for user identity management, user authentication and authorization, access control based on user role as well as individual patient permissions, credential services and access levels for all users connected directly and through other HIEs to the COV-HIE, audit logging of all services, digital certificates and certificate revocation, and comply with data integrity and availability standards. Security and Privacy standards will be monitored for ongoing requirements as these provisions continue to evolve over time.

For the NHIN, the NHIN Cooperative Technical and Security Committee has defined a common security header for all transactions on the NHIN. This security header, as defined in the NHIN Trial Implementations Authorization Framework specification, requires the use of the Secure Access Markup

Language (SAML) version 2. This specification requires inclusion of information about the user that is originating the transaction. The following identity attributes about the requester must be present:

1. User ID
2. The method by which the user was authenticated
3. The time of the user authentication
4. The user's name in plain text (for audit purposes)
5. The user's organization in plain text (for audit purposes)
6. The role that the user is assuming when making the request, using a coded vocabulary defined in the specification
7. The purpose of the request, using a coded vocabulary defined in the specification

These assertions about the originating user are included in the security header, and digitally signed using an X.509 certificate from an authority designated by the NHIN. This digital certificate from a trusted authority provides a "chain of trust" that allows the receiving HIE to trust that the originating user is the user described in the security header. The receiving HIE can then apply certain types of security, such as role-based access control and auditing of transactions, even though the HIE was not previously aware of the user.

3. Patient Identification

Positive patient identification is a challenge for every healthcare organization, and will be a key success factor for the COV-HIE. Patients must be identified uniquely using given characteristics such as name, date of birth, driver's license number, etc. The COV-HIE must determine the detailed approach to accomplish unique patient identification, and whether this will be a centrally provided MPI service, or a regional query approach.

The widely accepted standard for exchanging information about patient IDs are the Patient Identity Cross-Reference (PIX) and the Patient Demographic Query (PDQ) profiles defined by Integrating the Healthcare Enterprise (IHE).

These profiles describe the use of HL7 messages (with supported variations for both HL7 version 2 and version 3) to provide the operations necessary to manage patient IDs across organizations. The operations defined by PIX and PDQ are:

- Patient Identity Feed: used to inform another entity about a patient identity
- PIX Update Notification: used to inform another entity about changes to a patient identity
- PIX Query: used to query another entity about Patient IDs that are linked (that is, assumed to be the same individual) as a given Patient ID
- Patient Demographics Query: used to query another entity about individuals who have the same or similar attributes (such as name, date of birth, gender or address) as the given attributes.

The COV-HIE will need to determine the approach and process for identity management. The issues associated with managing user identity in a widely distributed environment such as the COV-HIE have been addressed in many other electronic commerce applications. This subject is often referred to as "federated identity management." Some of the topics that must be addressed in a federated identity management scenario are:

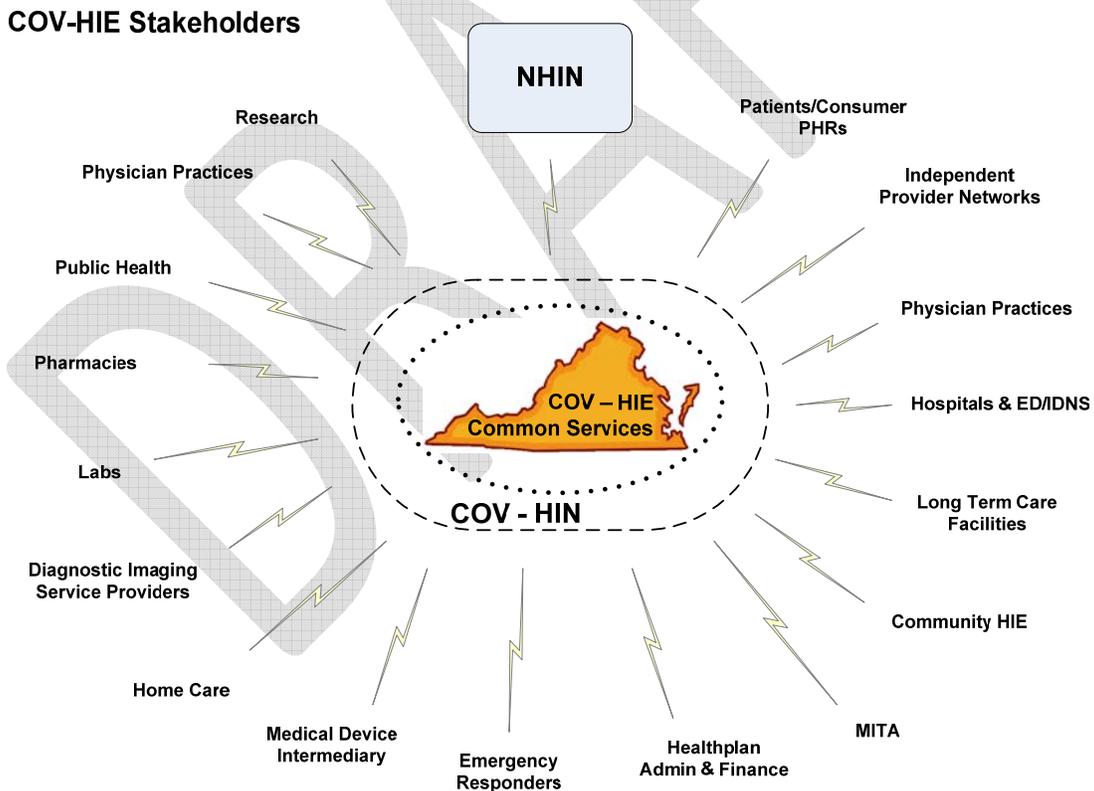
1. Establishment of one or more "identity providers" who are allowed to create user IDs and assign them to users.

2. The definition of identity attributes, including the user’s name and the role or roles they are allowed to assume in the systems being connected.
3. User account management and provisioning, the processes by which user accounts are created and information about those accounts is sent to connected systems.
4. Establishment of a “chain of trust,” enforced through digital certificates that describe the level of trust that organizations give each other when accepting user credentials from outside their own security domain.

Another consideration is the enabling of how consumers/patients exert control over who may access their healthcare information and for what purpose. The standards to exchange access consent policies between an EHR and HIE are not yet mature. HITSP CAP138 does address interoperability requirements to support anonymization that both removes the association with a data subject, and adds an association between a particular set of characteristics relating to the data subject and one or more pseudonyms.

4. Network

The COV-HIE will require network connectivity to a variety of network “nodes”. The following diagram provides a high level overview of the required connectivity.



Nodes directly managed by the COV include the COV-HIE, the Medicaid Management Information System, and various public health entities. CMS is currently designing a set of architectures (business, information and technical) for the future Medicaid Management Information Systems (MMIS). The

overriding architecture for these systems is called MITA (Medicaid Information Technology Architecture). The MITA initiative envisions moving from traditional MMIS to web based, patient centric systems that are interoperable within and across all levels of government. CMS has been working on MITA for approximately 5 years, and it is estimated it will take another 5 to 10 years to arrive at a fully implemented and interoperable system.

The COV-HIE will also provide an NHIN Gateway Function. If the Department of Health and Human Services Office of the National Coordinator for Healthcare IT (ONC) establishes standards that HIEs must meet to become and remain a Certified HIE, it will be the responsibility of the COV-HIE to conform to these standards.

5. Architectural Models for COV-HIE Data and Centralized Services:

Shared services for states to consider include (but are not limited to): Security Service, Patient Locator Service, Data/Document Locator Service, and Terminology Service. These technical services may be developed over time and according to standards and certification criteria adopted by HHS in effort to develop capacity for nationwide HIE.

There are three architectural models for data storage and services in an HIE. (we could have a 4th vendor – or do we consider that a form of Federated?) They are:

- Centralized – Population data would be intermingled on a single statewide HIE data storage center for query. The requestor must identify the patient, query the system for data on the patient, and assemble the returned information display.
- Federated – Population data would reside in individual health system databases and applications, and would be made available via real time queries. The requestor must identify the patient, query the state HIE for location of records on the patient (RLS), query the source systems for data on the patient, and assemble the returned information for display.
- Confederated or hybrid – The HIE provides MPI (Master Patient Index) and RLS services as above. Population data would be hosted on participant's edge servers for real time data query. The requestor must identify the patient, query the state HIE for location of records on the patient (RLS), query the participants edge servers for data on the patient, and assemble the returned information for display

Virginia could have a mixture of these architectures. For example, the state could host the Master Patient Index (MPI) and Record Locator Service (RLS) as a utility for directing the population data query. The COV-HIE would provide the “phone book” to provide an index for patients, providers, health plans, public health entities, research, etc. Entities which would utilize the State's central utility include both Hybrid community HIE's with centralized components e.g. VHEN for financial administrative data, and Federated/vendor solutions e.g. the State's Epic EMR Care Everywhere for State health system providers utilizing Epic. These architectures would work cooperatively through the adoption of interoperability industry standards to include standards from HL7, HITSP, ACR/NEMA(DICOM), ASTM, IEEE, NCPDP, ADA, etc. The implemented solutions would address privacy and security, performance, patient identification, terminologies, technical support, etc.

The Virginia Health Information Network will serve as a gateway to the National Health Information Network. The VHIN would also provide the gateway for community HIE's to the NHIN as well as access from one community HIE to another. The Virginia recommended architecture and standards would need to be adopted by community HIE's in order to be a node on the VHIN.

Currently, the NHIN Trial Implementation Framework has identified ten core service offerings¹:

- Message Platform Service Interface Specification
- Authorization Framework Service Interface Specification
- Subject Discovery Service Interface Specification
- Query for Documents Service Interface Specification
- Document Retrieve Service Interface Specification
- Audit Log Query Service Interface Specification
- Consumer Preferences Service Interface Specification
- Health Information Event Messaging Service Interface Specification
- NHIE Service Registry Interface Specification
- Authorized Case Follow-Up Service Interface Specification

¹ See NHIN Trial Implementations Service Interface Specifications (<http://healthit.hhs.gov>)

These core services support the fulfillment of the following use cases:

- Authorized Release of Information to a Trusted Entity Use Case
- Biosurveillance Use Case
- Consumer Preference Registration Med History
- EHR Lab Scenarios Use Case
- Emergency Responder Use Case
- Quality Use Case

These services and others will be needed to have a COV-HIE. Planning and implementation work would address and sequence all of the services needed.

6. Barriers

- a. Incomplete Broadband Access throughout the COV
- b. Population identification and management
- c. Lack of user tools to facilitate standards adoption
- d. Lack of EHR automation within some stakeholders
- e. Mapping of historical data to industry standard value sets
- f. Lack of skilled/trained personnel to implement
- g. Lack of funding

7. Coded Healthcare Vocabularies

In addition to the standards needed to successfully implement an HIE, the HITSAC committee will also want to recommend coded healthcare vocabularies for statewide adoption. Data content standards, i.e., vocabularies and terminology standards include CDA2, SNOMED, ICD, X12, NCPDP, Omaha System, etc. The information content standards include the Reference Information Models (RIMs) standards. Exhibit J provides the HITSP value set definitions for the EHR. This provides insight into the scale of change needed for the various EHR systems to be able to share data at the atomic level.

DRAFT