

# CONNECTICUT HEALTH INFORMATION TECHNOLOGY AND EXCHANGE STRATEGIC AND OPERATIONAL PLAN



STATE OF CONNECTICUT  
DEPARTMENT OF PUBLIC HEALTH  
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DECEMBER 2010 (Revised)

The *Connecticut Health Information Technology and Exchange Strategic and Operational Plan* is intended to provide guidance and direction for the development and implementation of health information exchanges throughout the state. The Plan is required by the U.S. Department of Health and Human Services, The Office of the National Coordinator for Health Information Technology.

The Plan was developed by the Connecticut Department of Public Health in collaboration with the Health Information Technology Advisory Committee (see Appendix 4.3) and the following contributors, with consulting services from Gartner, Inc.

Advanced Behavioral Health	Hartford Hospital
Aetna	Hewlett Packard
Anthem	Hospital for Special Care
Cardiology Associates of Waterbury	Lawrence & Memorial Hospital
Cigna	Libertas
Community Health Center Assoc. of CT	Middlesex Hospital
Community Health Centers, Inc.	Midstate Medical Center
CT Area Health Education Center	Qualidigm
CT Assoc. of Not-for-Profit Providers for the Aging	Quest
CT Association of Health Care Facilities	Robinson & Cole
CT Center for Primary Care	SMC Partners
CT Department of Consumer Protection	Milford Hospital
CT Department of Information Technology	MISYS Open Source
CT Department of Public Health	Nexus Resources
CT Department of Social Services	Office of the Lt. Governor
CT Development Authority	St. Francis Hospital
CT Health and Educational Facilities Authority	St. Luke's Lifeworks
CT Health Policy Project	St. Vincent's Medical Center
CT Hospital Association	Stamford Hospital
CT Office of Policy & Management	Office of the National Coordinator
CT Pharmacist's Association	StayWell Health Care Center
Danbury Hospital	University of Connecticut Health Center
David O'Leary Group	Women's Health USA
East Granby Family Practice	Yale University
Eastern Connecticut Health Network	Yale-New Haven Hospital
eHealthConnecticut	

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Suggested citation: Connecticut Department of Public Health. December 2010. *Connecticut Health Information Technology and Exchange Strategic and Operational Plan*. Hartford, CT: Connecticut Department of Public Health.

This document is available on the Internet at: <http://www.ct.gov/dph>.

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Support for this planning initiative was provided by the U.S. Department of Health and Human Services, The Office of the National Coordinator for Health Information Technology

## Table of Contents—Strategic and Operational Plan

<b>Executive Summary .....</b>	<b>1</b>
<b>1.0 Introduction .....</b>	<b>6</b>
1.1 Purpose and Audience .....	6
1.2 Strategic Plan Outline .....	7
1.3 Operational Plan Outline.....	8
1.4 Methodologies Employed .....	8
<b>2.0 Strategic Plan .....</b>	<b>9</b>
2.1 HITE-CT Vision, Goals, Objectives and Strategic Imperatives .....	9
2.1.1 Vision Statement .....	9
2.1.2 Strategic Goals and Principles .....	9
2.1.3 HITE-CT Strategic Approach.....	11
2.1.4 Strategic Imperatives.....	13
2.1.4.1 Governance Domain .....	13
2.1.4.2 Finance Domain .....	13
2.1.4.3 Technical Infrastructure Domain .....	14
2.1.4.4 Business and Technical Operations Domain .....	14
2.1.4.5 Legal/Policy Domain .....	15
2.2 Environmental Scan.....	15
2.2.1 Population Profile .....	15
2.2.2 Health Status Indicators .....	15
2.2.3 Health Insurance Coverage.....	16
2.2.4 Public Health and Health Care Systems in Connecticut.....	16
2.2.5 Public Health Information Exchange in Connecticut.....	17
2.2.6 Health Care Information Exchange in Connecticut.....	18
2.2.6.1 Electronic Health Record (EHR) Adoption .....	18
2.2.6.2 Health Care HIE Initiatives .....	21
2.2.7 Environmental Scan Summary .....	27
2.2.8 Meaningful Use Gap Analysis .....	27
2.3 Coordination with Federally-funded Statewide Programs.....	35
2.3.1 Medicaid Coordination.....	35
2.3.2 Public Health .....	37
2.3.3 Regional Extension Centers .....	37
2.3.4 Broadband Access .....	38
2.3.5 Community Health Centers .....	38
2.4 Governance .....	38
2.4.1 Current State Assessment.....	39

2.4.1.1	Interim Governance.....	39
2.4.2	Role of the Governance Entity HITE-CT .....	42
2.4.3	Accountability and Transparency .....	44
2.4.4	State Government Leadership Changes .....	44
2.4.5	Governance Summary.....	45
2.5	Finance .....	46
2.5.1	Current State Assessment.....	46
2.5.2	Value Proposition of HITE-CT .....	46
2.5.3	Short Term Startup Funding for the HITE-CT .....	48
2.5.4	Long Term Sustainability for HITE-CT.....	48
2.5.4.1	Working Assumptions .....	48
2.5.4.2	Multi-Phased Funding Model .....	50
2.5.5	Financial Management and Reporting.....	51
2.5.6	Finance Summary .....	51
2.6	Technical Infrastructure .....	52
2.6.1	Current State Assessment.....	52
2.6.2	EHR Adoption .....	52
2.6.3	Interoperability .....	53
2.6.4	Standards Adoption Process .....	54
2.6.5	HITE-CT Architecture Approach.....	54
2.6.6	Products and Services Portfolio .....	57
2.6.7	Procurement Approach.....	59
2.6.8	Technical Infrastructure Summary.....	60
2.7	Business and Technical Operations .....	61
2.7.1	Current State Assessment.....	61
2.7.2	HITE-CT Communication Strategy .....	61
2.7.3	HIE Infrastructure Procurement and Implementation .....	62
2.7.4	Technical Operation Approach .....	62
2.7.4.1	Identify Participants and Plan Deployment Processes.....	62
2.7.4.2	Coordinate Standards and Adoption .....	63
2.7.4.3	Administer and Manage the Utility.....	64
2.7.5	Business and Technical Operations Summary.....	65
2.8	Legal/Policy .....	65
2.8.1	Current State Assessment.....	65
2.8.2	Consent and Disclosure Model.....	66
2.8.3	Development of Policies, Rules and Trust Agreements .....	69
2.8.4	Framework for Enforcement of Privacy and Security Policy.....	69
2.8.5	Legal/Policy Summary .....	69
2.9	Evaluation Approach.....	70

2.9.1	Reporting Requirements.....	70
2.9.2	Performance Measures .....	71
2.9.3	Evaluation Approach Summary .....	72
2.10	HITE-CT Strategic Plan Road Map and Recommendations.....	73
<b>3.0</b>	<b>Operational Plan.....</b>	<b>76</b>
3.1	Operational Plan Summary.....	76
3.2	Coordination with ARRA and other State and Federal Programs.....	78
3.2.1	Coordination with ARRA Programs .....	78
3.2.2	Coordination with State Programs.....	79
3.2.3	Participation with Federal Care Delivery Organizations .....	80
3.2.4	Coordination with Other States.....	81
3.2.5	Coordination Action Items .....	81
3.3	Governance .....	83
3.3.1	Governance and Policy Structures .....	83
3.3.1.1	HITE-CT Board of Directors and CEO .....	83
3.3.1.2	Reporting and Success Measures for Accountability .....	84
3.3.1.3	Public Awareness, Education and Participation Plan.....	85
3.3.2	HITE-CT Organization Structure .....	85
3.3.3	Governance Action items .....	87
3.4	Finance .....	88
3.4.1	Finalize the Funding Model .....	88
3.4.2	HITE-CT HIE Cost Estimates .....	89
3.4.3	HITE-CT Staffing Plan .....	91
3.4.4	Controls and Reporting.....	92
3.4.5	Risk Management.....	93
3.4.6	Finance Action items .....	94
3.5	Technical Infrastructure .....	95
3.5.1	Standards and Certifications .....	95
3.5.2	HITE-CT Technical Architecture.....	96
3.5.2.1	Technology Objectives and Guidelines.....	98
3.5.2.2	HITE-CT HIE Services .....	99
3.5.2.3	Interoperability.....	104
3.5.2.4	Privacy .....	105
3.5.3	Technology Deployment.....	106
3.5.4	Technical Infrastructure Action items.....	107
3.6	Business and Technical Operations .....	109
3.6.1	Stage 1 Meaningful Use Focus .....	109
3.6.1.1	E-Prescribing.....	109
3.6.1.2	Receipt of structured lab results.....	109

3.6.1.3	Sharing patient care summaries across unaffiliated organizations .....	109
3.6.1.4	Bundled Services .....	110
3.6.2	State level Shared Services .....	110
3.6.3	HITE-CT Standard operating procedures for the HIE .....	111
3.6.4	HITE-CT Business and Technical Operations Action items .....	112
3.7	Legal and Policy Domain .....	114
3.7.1	Development of Policies, Rules and Trust Agreements to comply with policy requirements .....	114
3.7.1.1	DPH Policy Framework .....	114
3.7.1.2	HITE-CT Policy Framework.....	115
3.7.2	Privacy and Security Harmonization.....	116
3.7.3	HITE-CT Legal and Policy Action items.....	117
3.8	Evaluation Approach.....	118
3.8.1	University of Connecticut Health Center Evaluation .....	118
3.8.2	HITE-CT Performance Metrics .....	120
3.8.3	HITE-CT Evaluation Action items .....	121
3.9	HITE-CT Operational Plan Master Schedule and Risk Analysis.....	122
3.9.1	HITE-CT Operational Plan Master Schedule.....	122
3.9.2	HITE-CT Risk Analysis .....	130
3.9.3	HITE-CT Risk Classification Matrix .....	131
3.9.4	Risk Mitigation .....	133
3.9.4.1	Core Business Hazards .....	133
3.9.4.2	Governance Risks.....	134
3.9.4.3	Finance Risks.....	134
3.9.4.4	Technology Infrastructure Risks.....	134
3.9.4.5	Business and Technical Operations Risks.....	135
3.9.4.6	Legal/Policy Risks .....	136
<b>4.0</b>	<b>Appendices.....</b>	<b>138</b>
4.1	Appendix—Definition of Terms and Acronyms .....	138
4.2	Appendix—Connecticut Public Act No. 10-117.....	143
4.3	Appendix—CT DPH HITE Advisory Committee and HITE-CT Board of Directors Membership.....	148
4.4	Appendix—HITE-CT Board of Directors Bylaws, Adopted November 15, 2010.....	150
4.5	Appendix—State HIT Assets .....	158
4.6	Appendix— Pharmacies in Connecticut.....	160
4.7	Appendix—Laboratories in Connecticut .....	167
4.8	Appendix—Community Health Centers in Connecticut .....	172
4.9	Appendix—Insurance Companies .....	173

4.10	Appendix—Danbury Hospital’s HealthLink .....	176
4.11	Appendix— The Medicaid Transformation Project: A Health Information Exchange pilot through the Department of Social Services .....	178
4.12	Appendix—Excerpt from the MEMORANDA OF AGREEMENT Between The Department of Public Health And University of Connecticut Health Center for Evaluation Services .....	180
4.13	Appendix— HIE Communications Plan .....	185
4.14	Appendix— HITE Transition Brief .....	191
4.15	Appendix— References .....	198

### List of Figures

Figure 1.	HITE-CT Vision: Linking Private and Public Health Care .....	12
Figure 2.	Percent of Connecticut Physicians Using Technologies in Practice.....	18
Figure 3.	National HIT Adoption by Office based Physicians in the United States,.....	19
Figure 4.	EHR Adoption by Office-based Physicians in the United States: 2001 2007 .....	19
Figure 6.	HITE CT Initial (First 3 Years) Target Functionality .....	57
Figure 7.	HITE CT Strategic Plan Road Map.....	73
Figure 8.	Operational Plan Master Schedule Top Level Summary.....	76
Figure 9.	Stakeholder Interaction with HITE CT Governance.....	84
Figure 10.	HITE CT Key Functional Roles and Organizational Hierarchy .....	85
Figure 11.	HITE CT Initial (First 3 Years) Target Functionality .....	97
Figure 12.	HITE CT Master Schedule.....	123

### List of Tables

Table 1.	HITE-CT Public Health Coordination.....	37
Table 2.	Initial Mapping of Users and Value Proposition .....	47
Table 3.	Multi Phased Funding Model .....	50
Table 4.	HITE-CT Initial Service Releases .....	59
Table 5.	Reporting Requirements.....	70
Table 6.	Initial Implementation Performance Measures .....	72
Table 7.	HITE-CT Strategic Plan Road Map Details .....	74
Table 8.	Subproject Overview and Goals .....	77
Table 9.	HITE-CT Coordination .....	79
Table 10.	Coordination Action Items .....	82
Table 11.	HITE-CT Organizational Structure Functional Roles.....	86

Table 12.	HITE-CT Governance Action Items .....	87
Table 13.	HITE-CT Four Year Costs .....	90
Table 14.	HITE Staffing Recommendations .....	91
Table 15.	HITE-CT Finance Action Items.....	94
Table 16.	Core HITE-CT Service Categories .....	99
Table 17.	HITE-CT HIE Releases .....	106
Table 18.	HITE-CT Technical Infrastructure Action Items.....	107
Table 19.	HITE-CT Business and Technical Operations Action Items .....	112
Table 20.	HITE-CT Legal and Policy Action Items .....	117
Table 21.	HITE-CT Performance Metrics .....	120
Table 22.	HITE-CT Evaluation Action Items.....	121
Table 23.	HITE-CT Risk Analysis Table .....	131

## Executive Summary

The Connecticut Department of Public Health (DPH), as the federally-designated state Health Information Organization, presents the Connecticut Health Information Technology and Exchange Strategic and Operational Plan. Health information technology and exchange will play a central role in health care reform, and provides opportunities to reduce costs, increase quality and safety, and improve access to care.

Governor M. Jodi Rell and the Connecticut legislature have supported and directed the state health information exchange governance and planning process. The 2007 Connecticut General Assembly required DPH to develop the first statewide health information technology plan. In June 2009, DPH published the Connecticut State Health Information Technology Plan, setting the baseline agenda for health care information exchange and technology in the state. The 2009 legislature designated DPH as the lead health information exchange organization responsible for the State of Connecticut Health Information Technology and Exchange Development Project with advice and counsel from an appointed Advisory Committee.

By the end of 2009, DPH was working with the U. S. Department of Health and Human Services Office of the National Coordinator for Health Information Technology (ONC) to secure \$7.29 million for a multi-year Cooperative Agreement to plan and build a coordinated, sustainable statewide health information exchange system for Connecticut.

The 2010 Connecticut General Assembly and Governor Rell created the Health Information Technology Exchange of Connecticut (HITE-CT) as a quasi-public agency managed by an appointed Board of Directors to coordinate and oversee Health Information Exchange (HIE) activities in the state on January 1, 2011. The vision for the HITE-CT is to facilitate secure health information exchange across the care continuum that supports patients' health needs at the point of treatment by providing immediate, direct and ongoing links between patients, their complete health records and their attending providers. The HITE-CT will initially prioritize support for all Connecticut's health care providers' meaningful use EHR requirements in close alignment with the State Medicaid Health Information Technology Plan.

This Connecticut Health Information Technology and Exchange Strategic and Operational Plan (the Plan) will transform the Connecticut health care system by enabling substantial and measurable improvements in the quality of patient care, patient safety, and the overall efficiency and effectiveness of the health care system through health information technology and health information exchange. The Plan will promote regional and local health information exchange initiatives that align with the strategy, adopted at the State level, and in alignment with national strategies and standards.

The Plan was prepared with significant contributions from the Health Information Technology and Exchange Advisory Committee (HITEAC) and its subcommittees (Finance, Technical Infrastructure, Business and Technical Operations, Legal/Policy, Governance and Special Populations), stakeholder interviews and surveys, and public comments. DPH contracted with Gartner, Inc. to facilitate the planning process and contribute their significant expertise in health information technology and exchange to the Plan.

The Plan provides an assessment of the capabilities and challenges for the development and implementation of a HIE for Connecticut. The Plan constitutes a road map for success, and includes a description of the current state of health information technology adoption within the State, such as Electronic Health Records (EHRs) and Health Information Exchange. Highlights of the assessment include:

- Many of Connecticut's acute care hospitals have the information technology systems to support HIE activities in the State.
- Provider health information technology (HIT) adoption is fractured in Connecticut. In 2008, nearly 80% of practices had electronic billing systems, while only 26% had an EHR.
- Small practice adoption of fully functional systems is not expected to reach 15% by 2015.
- DPH has identified 55 different databases.
- The Connecticut Department of Social Services (DSS) has a portal for a single point of access to several different systems.
- In 2008, only 23% of Connecticut physicians reported use of ePrescribing and 63% reported having Electronic Labs functionality in their practice.

## **Connecticut Strategic Plan**

The Strategic portion of the Plan is aligned with the ONC's five domains for an HIE as summarized below.

### ***Governance***

- An interim governance structure has been well established under the leadership of DPH and a transition has been underway since October 18, 2010, with the first meeting of the HITE-CT Board. The transition is expected to conclude with the transfer of responsibilities from DPH to HITE-CT in the beginning of January 2011.
- The founding principles of HITE-CT include ensuring the clarity of decision making processes, inclusiveness, and provision of a governance role to those stakeholders that will support HITE-CT's mission and vision for the statewide HIE.
- The long-term governance of HITE-CT will be completed by a quasi-public agency that reflects the interests of all stakeholders and ensures the efficient and effective management of the statewide HIE.
- HITE-CT must be governed and operated in a clear and accountable manner to ensure stakeholder support and realize the promise of health information exchange in Connecticut.

### ***Finance***

- There is a broad agreement among HITE-CT stakeholders of the need for a compelling value proposition for the HIE that sets realistic expectations and articulates both qualitative and quantitative benefits. This value proposition must demonstrate economic and health-outcome specific benefits, including performance indicators for reporting requirements. Most importantly, the value proposition must enable that tailoring of communication around the value of the HIE to each stakeholder group.
- Connecticut has developed a proposed multi-phased approach to ensure funding. The State plans to leverage the ARRA ONC funding as the foundation and funds from fees levied on potential for-profit and non-profit HIE users or contributors to sustain the HIE in the short term.

- For long-term sustainability, Connecticut has developed a multi-phased methodology for funding with each phase aligned to the products and services provided by the HIE, the value provided, the extent of participation and the overall level of HIE maturity. This model will seek contributed income from various stakeholders in the form of universal assessment fees, subscription fees and transaction fees (based on services provided) to support HITE-CT's financial needs and growth of its HIE capabilities.
- HITE-CT must be able to meet all reporting requirements, especially those additional requirements for ARRA funding.

### ***Technical Infrastructure***

- HITE-CT will lead a broadly participative effort to define a comprehensive Enterprise Architecture.
- HITE-CT will acquire a Service Oriented Architecture (SOA) and standards-based, secure, feature-rich application that will enable providers to achieve meaningful use of EHRs.
- This solution requires a scalable technical platform and network capable of working with all providers, hospitals, and other care settings in the State.
- Connecticut has determined the initial prioritization of HITE-CT products and services as guidance for the Operational planning process in three Releases:
  - **Release 1 - Continuity of Care Documents/Records (CCD/CCRs) and Public Health Registries and Reporting**, to address components of meaningful use, provide benefits to all State residents and build a foundational infrastructure and data set.
  - **Release 2 – Quality/Gaps in Care Reporting**, to develop and implement metric-based Quality Reporting and the “care gaps,” and provide access to and integration with data from multiple sources. This release also includes integrating data from auxiliary services (e.g. Lab results).
  - **Release 3 - Personal Health Records (PHRs)**, to allow all residents the ability to help manage their own care through the management of their health records.
- HITE-CT will work with DSS as the State Medicaid agency and eHealthConnecticut as the Regional Extension Center to encourage and support the adoption of EHR and HIE.

### ***Business and Technical Operations***

- Connecticut will create an incremental approach to deploying HITE-CT with an initial focus on ensuring that the HITE-CT can support meaningful use requirements both by providing HIE services and by providing advice and guidance when these services are not yet available via the HIE. HITE-CT will work closely with stakeholders to develop a detailed deployment approach that will use the experiences and, where possible, assets of early adopters to ensure a successful deployment of HITE-CT across Connecticut.
- HITE-CT will create a detailed communications strategy designed to educate consumers and providers about how electronic health records and their exchange can improve the quality and efficiency of health care for Connecticut residents. This communication strategy will take advantage of multiple communications methods to spread the word about HITE-CT and its benefits.

- The technical deployment of HITE-CT will build upon deployment planning to ensure that the right technologies and services are developed, deployed and eventually maintained to high standards with appropriate levels of support and training.
  - HITE-CT will initiate an open procurement process for the acquisition of HITE-CT infrastructure as an immediate priority. Technical deployment will be achieved by a combination of HITE-CT and vendor resources.
  - HITE-CT will look to select a vendor(s) with a proven HIE product who can ensure Connecticut health care providers are able to qualify for Medicare and Medicaid incentive funding within federal time-lines.

### ***Legal/Policy***

- The privacy and security of patient health information is of the highest possible concern in the development of HITE-CT as reflected in Connecticut's Public Act 10-117.
- The Legal and Policy Subcommittee has designed the framework for a consent model that is based on a presumptive inclusion of all personal health information (PHI) in the HIE with an individual having the right to prohibit disclosure of his/her PHI by the HIE to others.
- The policies, rules and agreements will define how the HITE-CT operates must be created within the boundaries of all applicable law and national standards. Of particular importance will be determining patient consent.
- The privacy and security framework provided by both Health and Human Services (HHS) and the Health Insurance Portability and Accountability Act (HIPAA) provides a well-established body of law for HITE-CT. The HIPAA preemption analysis, which is currently being updated in light of HIE needs, will provide input for a future legal framework for HITE-CT.

### **Connecticut Operational Plan**

The HITE-CT Strategic Plan, developed through a collaborative endeavor, will be implemented through the Operational Plan that outlines a corresponding and comprehensive set of activities that will achieve statewide HIE in Connecticut. Execution of the HITE-CT Operational Plan will enable and support Connecticut's health care providers to achieve and demonstrate meaningful use of Health Information Technology to improve the effectiveness and efficiency of health care. The HITE-CT's Operational Plan provides substantial detail with individual tasks and their interrelationships to successfully implement and sustain a health information exchange for Connecticut public health and health care providers to serve all consumers. The Plan identifies the following "sub-projects" to organize the required steps to reach that goal.

- Program Management
- HITE-CT Agency Development
- Funds Acquisition
- HIE Solution Architecture
- Contract for Systems and Services Vendor
- Standards Adoption and Setting
- Initial HIE Stand-up

- Connecticut HIE Release 1—CCD/CCR & Public Health (PH) Reporting
- Connecticut HIE Release 2—Quality Reporting
- Connecticut HIE Release 3—Personal Health Record (PHR)
- Relationship Management and Customer Service

The HITE-CT HIE system will be a standards-based, decentralized, hybrid model that supports distributed data. This model will allow statewide availability for the secure transfer of a defined set of clinical information between appropriate participating entities. HITE-CT will be substantially influenced by the Standards and Certification criteria and will be adopted in the following categories:

- Vocabulary Standards—standardized nomenclatures and code sets used to describe clinical problems and procedures, medications, and allergies;
- Content Exchange Standards—standards used to share clinical information such as clinical summaries, prescriptions, and structured electronic documents;
- Transport Standards—standards used to establish a common, predictable, secure communication protocol between systems; and
- Privacy and Security Standards—authentication, access control, transmission security that relate to and span across all of the other types of standards.

The Plan recognizes the effective coordination efforts with other State ARRA programs. DPH has convened a workgroup with DSS as the state's Medicaid provider, the Connecticut Department of Higher Education (Capitol Community Technical College) and eHealthConnecticut as the Regional Extension Center to collaborate on HIE initiatives in Connecticut. Other collaborations that will support and complement the HIE projects include coordination with workforce development initiatives, State and Federal programs, and neighboring states.

In addition, the health care community within Connecticut must collaborate to choose an appropriate architecture that meets all current and future needs of established system while developing consistent standards and processes.

The Plan describes the activities required to finalize and operationalize the funding model and provides a cost estimate for the implementation of the Strategic Plan for a 4-year period. In addition the Plan describes activities to implement financial policies, procedures, and accounting controls and risk management.

HITE-CT will lead the effort to define a comprehensive enterprise architecture (including standards considerations) and document the full scope of required HITE-CT technology infrastructure and services. The architecture will permit the exchange of data between entities that house patient data and authorize health care providers in a manner that accommodates users at various stages of technology adoption.

Connecticut plans to continue to build on its HIT foundation and work closely with the State's private and public health communities to achieve its vision.

## 1.0 Introduction

The Connecticut Department of Public Health (DPH) is the lead health information exchange organization for the State. DPH serves as advocate, regulator, and consumer of health information technology and exchange to serve public health and health care needs in Connecticut. In June 2009, DPH published the Connecticut State Health Information Technology Plan to set the agenda for health care information exchange and technology. By the end of 2009, DPH worked with the U.S. Department of Health and Human Services (HHS) Office of the National Coordinator (ONC) to secure \$7.29 million for a multi-year Cooperative Agreement for planning and building a coordinated, sustainable statewide health information exchange system for Connecticut.

The American Recovery and Reinvestment Act (ARRA) signed by the President on February 17, 2009, includes the Health Information Technology for Economic and Clinical Health Act of 2009 (the HITECH Act) that sets forth a plan for advancing the appropriate use of health information technology to improve quality of care and establish a foundation for health care reform. The Act commits more than \$48 billion<sup>1</sup> in grants, loans and incentives to develop data exchange systems and to encourage 'meaningful use' of health data exchange in a secure technological environment. Connecticut has been awarded over \$25 million for health data exchange enhancements in public health and health care systems.

In June 2010 the Governor signed Connecticut Public Act No.10-117, "An Act Concerning Revisions to Public Health Related Statutes and the Establishment of the Health Information Technology Exchange of Connecticut" under Senate Bill No. 428 (see Appendix 4.22). The Act creates the Health Information Technology Exchange of Connecticut (HITE-CT), a quasi-public agency managed by an appointed Board of Directors to coordinate and oversee Health Information Exchange (HIE) activities for the State. The members of the Board include key Connecticut stakeholders representing health care providers, medical researchers, academia, payers, employers, attorneys, State agencies, consumers and consumer advocates. The HITE Advisory Committee and HITE-CT Board of Directors are presented in Appendix 4.3.

On January 1, 2011, HITE-CT will become the lead health information exchange organization for the State. In addition to the funds through the Cooperative Agreement with the ONC, HITE-CT will seek other public and private funds for the development and operation of Connecticut's HIE and will be responsible for the implementation and periodic revisions of this Strategic Plan. HITE-CT will, through the HIE initiative, help to realize Connecticut's plans to transform its health care system, thereby improving the quality, efficiency and accountability of health care in the State.

### 1.1 Purpose and Audience

The Connecticut HITE Strategic and Operational Plan builds upon the strategies defined in the Connecticut State Health Information Technology Plan that was published by the Department of Public Health in June 2009 and the significant contributions the State has facilitated with multiple stakeholders.

This Strategic Plan responds both to the requirements identified in the State's planning process and the requirements outlined by ONC in its "State Health Information Exchange Cooperative Agreement Program." In addition, the Plan reflects national trends and marketplace solutions to ensure the State's readiness and the leadership support required for the success of the HIE initiative. One of the core goals of the statewide HIE is to enable Connecticut's eligible Medicaid and Medicare providers to demonstrate 'meaningful use' through the Cooperative Agreement

Program and receive the maximum incentive reimbursement while avoiding future reimbursement penalties.

The Strategic Plan section also provides the foundation for the HITE-CT Operational Plan section which describes the set of activities essential for the design, development and deployment of the statewide HIE. HITE-CT aims to link public health organizations and the State's health care community to bring together respective strengths and best practices to achieve shared benefits. Therefore, in addition to ONC, the intended audience for the Connecticut HITE Strategic and Operational Plan includes:

- The residents of Connecticut who will benefit from the implementation of the HIE, including consumer advocacy groups;
- The Health Information Technology Exchange of Connecticut and its Board of Directors;
- State agencies and public health entities;
- Health care providers including community health systems, hospitals, clinics, physician groups, skilled nursing facilities, and others;
- Health insurance entities;
- The Regional Extension Center (REC) in Connecticut, assigned to eHealthConnecticut;
- Independent laboratories, pharmacies and support organizations;
- Local health organizations;
- Professional associations;
- Academic and research institutions; and
- Future vendors who may be engaged to support the execution/implementation of the Strategic Plan road map activities.

## 1.2 Strategic Plan Outline

The Strategic Plan (in Section 2 of this document) focuses on the State's vision, readiness and direction for the statewide HIE. The outline for the HITE-CT Strategic Plan is consistent with the ONC requirements for the Cooperative Agreement.

- Section 2.1, "HITE-CT Vision, Goals and Strategic Imperatives" summarizes the HITE-CT's overarching vision.
- Section 2.2, The "Environmental Scan" summarizes Connecticut's current public health and health care systems, HIT adoption in these systems, and HIE initiatives in operation or in planning phase in the State.
- Section 2.3, "Coordination with State and Federal Programs" describes the HITE-CT's current/planned interactions and ongoing coordination with multiple State and federal organizations and programs including: the State's Medicaid agency (the Connecticut Department of Social Services), Connecticut Department of Public Health, Medicare, relevant federally funded State based programs, and federal care delivery organizations.
- Sections 2.4 through 2.8, "Governance," "Finance," "Technical Infrastructure," "Business and Technical Operations," and "Legal/Policy" present a more detailed description of the current state and strategic initiatives for each of the ONC's HIE domains.

- Section 2.9, "Evaluation Approach," provides guidance on the measures and mechanisms that will be used to assess the near term effects and systemic impact of HITE-CT's development effort.
- Section 2.10, "HITE-CT Strategic Plan Road map and Recommendations," provides a high level project plan for the HIE initiative and summarizes the next steps for addressing existing gaps, and for finalizing this Strategic Plan.

### **1.3 Operational Plan Outline**

The Operational Plan (in Section 3 of this document) details the planned actions for fulfilling the State's vision for the HIE. The outline for the HITE-CT Operational Plan is consistent with the ONC requirements for the Cooperative Agreement.

- Section 3.1 "Operational Plan Summary" describes the Master Schedule at a summary "sub-project" level describing the key goal and contents of the 11 sub-projects in the Operational Plan.
- Section 3.2 "Coordination with ARRA and other State and Federal Programs" provides a more detailed discussion of Connecticut's plans for coordination and collaboration in key areas.
- Sections 3.3 through 3.7 "Governance," "Finance," "Technical Infrastructure," "Business and Technical Operations" and "Legal/Policy" describe key aspects of the Operational Plan from each of these domains; Section 3.8 "Evaluation Approach" describes Connecticut's plans for independent evaluation and describes an initial set of performance metrics; and Section 3.9 "Operational Plan Master Schedule and Risk Analysis" contains the detailed task by task schedule in Microsoft Project format and a detailed risk analysis across all domains of the Operational Plan.

Each section contains an "Action Items" table that summarizes all the actions required to realize Connecticut's strategy for evaluation and cross references to the detailed tasks in the Master Schedule.

### **1.4 Methodologies Employed**

Over the course of six months, from March 2010 to August 2010, the State guided an open, inclusive, and transparent strategic and operational planning effort. This planning effort consisted of a five step methodology. The first critical step was to focus on establishing a specific framework for Connecticut, organized around the definition and scope of the five ONC HIE domains<sup>2</sup>.

Based upon this HIE domain framework, the next key steps were to identify the current capabilities in Connecticut that can be leveraged and the existing gaps and challenges that must be addressed to move forward with the statewide HIE. The fourth and fifth steps consisted of defining a set of alternatives for closing the gaps in each domain, and documenting the potential strategies and next steps. The planning process included:

- Review of ONC's Guidance on State Health Information Exchange Cooperative Agreement Program;
- Review of documentation relevant to the State's HIE Initiative from State agencies and other stakeholders;
- Meetings with the HITEAC and diverse stakeholders from the public to obtain their input and guidance;

- An environmental scan of the existing statewide infrastructure and Electronic Health Records (EHR) systems in place or planned in order to assess the level of Health Information Technology (HIT) adoption and potential use of the HIE;
- Applied current research, best practices and lessons learned from other HIE implementations in support of the development of the draft Strategic Plan and Road map for the five domains;
- Definition of Connecticut's HIE vision and goals reflecting agreement among the State's stakeholders and striving for statewide coverage of providers for HIE meaningful use criteria; and
- Development of several reports that summarize Connecticut's leveragability of current initiatives, existing gaps, alternatives analysis, the process for prioritization of viable alternatives and "go forward" recommendations for Connecticut's HIE.

A key component of the HITE-CT initiative focuses on the solicitation of input, concerns and recommendations from key stakeholders. Both the Strategic and Operational portions of this plan have undergone periods of public review. Feedback from these public review periods has been used to inform and finalize the agreed upon strategies required to ensure the success of the vision for the HITE-CT.

## **2.0 Strategic Plan**

### **2.1 HITE-CT Vision, Goals, Objectives and Strategic Imperatives**

#### **2.1.1 Vision Statement**

The State of Connecticut plans to transform its health care system through the HITE-CT to improve the quality, efficiency and accountability of health care in Connecticut.

HITE-CT will establish and manage a statewide health information exchange in order to attain substantial and measurable improvements in several key areas, including but not limited to:

- Public health outcomes;
- Quality of care, medical outcomes and patient experience;
- Patient access to health care and their medical records;
- Continuity and coordination of care; and
- Effectiveness and efficiency of health care delivery.

#### **2.1.2 Strategic Goals and Principles**

To achieve the vision for the HITE-CT, Connecticut has established the goals below.

- Demonstrate leadership with open communication and coordination among HIE stakeholders, including State agencies, consumers, payers, and providers.
- Move toward patient-centricity in health care, where longitudinal patient care is enabled by readily available access to necessary information across care settings.

- Promote the optimal use of health information to improve continuity of care, and enable coordinated, affordable and efficient health care by providing rapid access to patient health care information from multiple providers.
- Strengthen current and future Connecticut health care initiatives to improve clinical outcomes and patient safety, minimize medical errors, and reduce redundancies in testing and services by linking the full continuum of providers in the State and across State borders.
- Improve access to quality health care services for underserved populations by strengthening the provision of health care through HIE and telehealth.
- Empower consumers' active participation in their health care needs through channels of engagement, provision of educational information and ready access to their health care information in an understandable format.
- Provide open and bi-directional information exchange between the participants in the entire network supporting patients and providers, including health systems, hospitals, payers, pharmacies and laboratories, regardless of location or affiliation.
- Ensure all patient health information sharing is compliant with all applicable privacy and security standards.
- Facilitate improved public health services by providing health data for mandatory reporting, monitoring of health status, and emergency responder information to DPH and Federal agencies.
- Encourage the adoption of health information technologies, i.e., electronic health records systems in Connecticut, by making it easier and less costly to securely share information over statewide and regional electronic networks.
- Provide a gateway for appropriately sharing patient information through the Nationwide Health Information Network (NHIN) with other providers outside of Connecticut.
- Facilitate public reporting of patient outcomes and quality measures by enabling communication of this information for meaningful use of health IT as may be required by the ONC.

The following Principles have informed, and will continue to inform, the strategic planning process and will provide critical guidance for the Operational Plan.

- **Consumer Confidence**—Connecticut health care consumers must be confident that their personal health information is secure and used appropriately.
- **Foundational and Sustainable Infrastructure**—The HITE-CT does not stand alone—it is one of a number of important tools for improving the landscape of health care in the State. HITE-CT infrastructure will lead standards-based interoperability and provide secure, robust and resilient access to Connecticut health information.
- **Phased Implementation**—The State will maximize investment through strategic planning and phased implementation of the HIE.
- **Inclusive and Transparent Governance and Approach**—The HITE-CT will support the entire health care community and will demonstrate sustained commitment to all health care constituents in the State. This will be accomplished through the following objectives.

- ❑ HITE-CT will maintain representative, qualified and stable leadership across the full spectrum of health care stakeholders in the State through broad based stakeholder input and collaboration with full transparency, openness and trust;
- ❑ HITE-CT and its associated governance structure will provide guidance and support to local and regional health information exchange initiatives; and
- ❑ HITE-CT will coordinate and align its efforts in support of State Medicaid and public health requirements for health information exchange, and with the evolving Federal meaningful use criteria.

### **2.1.3 HITE-CT Strategic Approach**

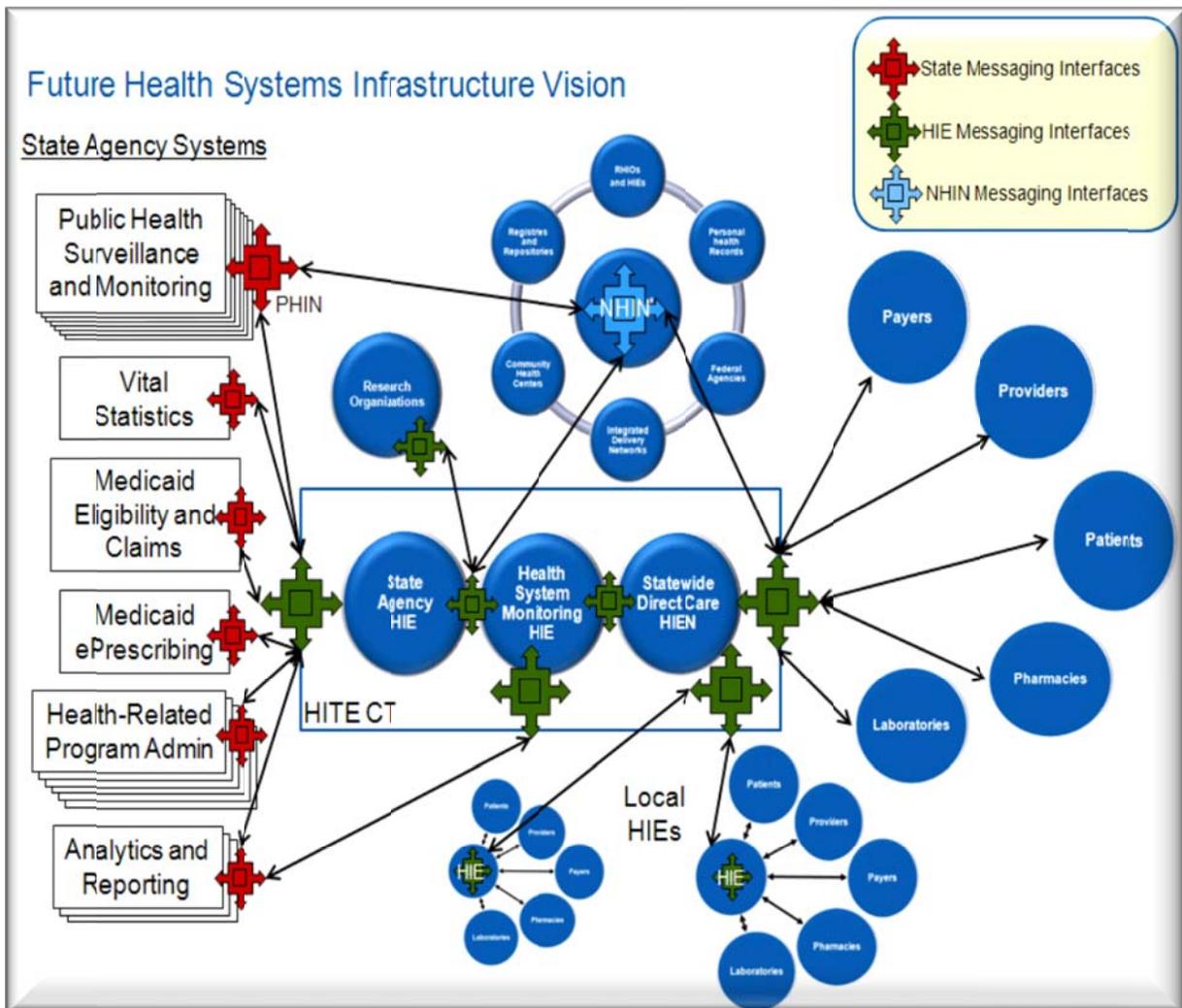
Connecticut's strategy is to provide the HITE-CT as a full service, secure, accessible, patient-centered health information exchange aligned with the Vision and Strategic Goals for the State's HIE. The HITE-CT will initially prioritize support for all Connecticut's health care providers' meaningful use EHR requirements in close alignment with the State Medicaid Health IT Plan.

Full system functionality will be implemented in phases over a number of years. The HITE-CT will be built on an architectural foundation that will enable an incremental approach toward building a coherent and comprehensive capability for the HIE. The phased implementation approach will balance:

- Priorities related to achieving all aspects of "meaningful use" for Medicaid and Medicare providers;
- Widely varying HIT adoption levels and rates of change across Connecticut's providers;
- Existing State and local HIE capacity and statewide shared services and directories;
- Consumers' access to medical services and their health records;
- Public health and vital statistics data needs; and
- Data aggregation and analytics to improve health care quality and outcomes in Connecticut.

The vision for the full implementation of the State's HIE is presented in Figure 1 below. It shows a multitude of services and capabilities and supports a very high proportion of Connecticut's health care system linking public and private systems for effective and efficient use of information and technology.

**Figure 1. HITE-CT Vision: Linking Private and Public Health Care**



Connecticut's strategy is to provide all of the following services either directly or indirectly (via a local information exchange, for example):

- Electronic prescribing and refill requests;
- Clinical summary exchange for care coordination and patient engagement;
- Electronic clinical ancillary services' (including laboratory and radiology) ordering and results delivery;
- Electronic eligibility and claims transactions;
- Electronic public health registries and reporting;
- Shared directories for patients and health care/service providers for
  - Patient matching;
  - Provider registry;
  - Provider authentication;

- Consent management;
- Secure routing;
- Messaging between participants;
- Health care quality reporting;
- Advance directives; and
- Prescription fill status and/or medication fill history.

#### **2.1.4 Strategic Imperatives**

The HITE-CT will support health care providers' efforts to become meaningful users of EHR's as an imperative along with other strategic imperatives for each of the five ONC HIE domains outlined below.

##### **2.1.4.1 Governance Domain**

- Support the State leadership group to mobilize and solicit stakeholder support and to lead the HIE initiative.
- Create the HITE-CT as a quasi-public agency.
- Establish an open, transparent and accountable governance structure that achieves stakeholder collaboration, buy-in and trust.
- Align with future nationwide HIE governance.
- Ensure private and public sector participation and partnership, and define their roles.
- Develop a solid value proposition for providers to encourage active HIE participation and adoption.
- Promote the importance of electronic health record readiness in collaboration with the State Medicaid Program, the Regional Extension Center, the Connecticut Hospital Association, and the Connecticut State Medical Society.
- Solicit broad participant engagement, including patients and consumers, and establish mechanisms for the exchange of ideas and for providing education.
- Establish mechanisms to provide oversight and accountability of the HIE once established.
- Establish the HITE-CT as a "safe harbor" and incubator for current HIE-related enterprises that can be leveraged for new initiatives and interactions, to be supported by the HIE to ensure long term sustainability of the HIE over time and political changes.

##### **2.1.4.2 Finance Domain**

- Minimize the impact of costs for the provider community to promote participation.
- Minimize the burden on taxpayers for the support of the HITE-CT.
- Identify all viable avenues for financing the HITE-CT across all stakeholders. Ensure that all who benefit will help financially contribute to the support of the HIE, including:
  - Federal government—ONC, Centers for Medicare and Medicaid Services (CMS), Center for Disease Control (CDC);
  - State government;

- Payers;
- Health care providers; and
- Patient engagement and information service providers.
- Create a sustainable business model (including consideration of public/private financing mechanisms) for the HITE-CT to be executed after implementation of the required infrastructure for the HIE utility.
- Develop a plan for sustainable funding in the short-term (1–2 years), medium-term (3–5 years) and long-term (5+ years) that will provide broad based and evolving revenue sources in line with the development of the HITE-CT.
- Establish mechanisms to effectively manage the funding and provide for the required reporting, accountability and controls necessary to implement and manage the HITE-CT.
- Ensure revenue sources can only be used to support the HIE.
- Leverage existing State funding mechanisms for the collection of revenue.

#### **2.1.4.3 Technical Infrastructure Domain**

- Leverage, where possible, existing State and public efforts and resources that exist to support the vision for HITE-CT, for example:
  - Master patient/client indexes;
  - Public health registries and support systems, and compliance with the nationwide Public Health Information Network (PHIN);
  - Current and planned health information organizations and other HIE and HIE-like systems in place in Connecticut;
  - State Medicaid HIT Planning efforts; and
  - State Medicaid Management Information System (MMIS).
- Establish an architecture for the State's HIE that is best suited to State, local and regional characteristics, in compliance with national interoperability, information exchange, security and other standards that support the HIT efforts, and that are in line with Federal meaningful use requirements.
- Identify existing HIE mechanisms that are scalable - ultimately enabling full interoperability and exchange of health information consistent with the State's Strategic Plan.
- Consider hosted solutions for all or part of the HIE solution requirements.
- Integrate with the Nationwide Health Information Network (NHIN) and the CMS CONNECT gateway.

#### **2.1.4.4 Business and Technical Operations Domain**

- Ensure strong planning and project management through a Project Management Office (PMO), service level management and business support for the HITE-CT.
- Create an effective organizational approach to managing the HITE-CT and its policy development, stakeholder participation and governance mechanisms to support the vision for the HIE.

- Establish the mechanisms and processes for coordinating and aligning efforts to incrementally meet meaningful use requirements, Medicaid incentive program needs and public health registries and reporting requirements.
- Develop approaches for utilizing HIE resources for academic research and analytics to assist in efforts to promote improved health care practices and outcomes across Connecticut.
- Establish the metrics, internal controls and reporting capabilities necessary to meet ONC reporting requirements for the HITE-CT.
- Provide technical assistance to other health information organizations and other current and planned HIE or HIE-like efforts within the State.
- Coordinate with the Regional Extension Center and support the provision of training and technical assistance for HIT adoption and effective use of Connecticut's HIE and other HIE and HIE-like systems within the State.

#### **2.1.4.5 Legal/Policy Domain**

- Identify and harmonize Federal and State legal and policy requirements that enable appropriate health information exchange services.
- Create the legal framework for patient and provider participation in health information exchange.
- Establish a statewide policy framework that allows for incremental and continuous development of information exchange policies.
- Establish enforcement mechanisms to track and ensure statewide stakeholder compliance with federally adopted standards and all applicable policies for interoperability, privacy and security.

## **2.2 Environmental Scan**

### **2.2.1 Population Profile**

Connecticut is the third smallest state in the U.S. in terms of area, but it has the 29<sup>th</sup> highest population and is the fourth most densely populated. The state is divided into eight counties and 169 municipalities, 8 boroughs, and 2 tribal nations. The most recent U.S. Census estimate puts the population of Connecticut at 3.5 million people in 2009, a 3.3% percent increase since 2000.<sup>3</sup> More than half the population (73.2%) is non-Hispanic white. Hispanics comprise 12.3% of the state's population, blacks make up 10.4%, Asians make up 3.6%, American Indians comprise 0.4% and Native Hawaiian and Other Pacific Islander make up 0.1%.

The median household income in Connecticut is \$68,294 compared to \$52,029 nationally.<sup>3</sup> In 2008, the percentage of Connecticut residents living below the federal poverty level was 9.1%, compared to 13.2% in the U.S.

### **2.2.2 Health Status Indicators**

The health status of Connecticut residents is slightly better than the U.S. on a number of key indicators in 2007-2008, as shown below. Similarly, access to care is significantly higher for adults in Connecticut than the nation as a whole.

Indicator	CT	CT %	US	US%	Comments
Infant Mortality Rate	6.6	-	6.8 <sup>4</sup>	-	per 1,000 live births
Teen Death Rate	43	-	62 <sup>4</sup>	-	per 100,000 population
AIDS Diagnosis Rate	7.6 <sup>4</sup>	-	12.3	-	per 100,000 population
Overweight or Obese Children	-	25.7 <sup>4</sup>	-	31.6	% of children
Adults who Visited the Dentist/Clinic	-	80.2 <sup>4</sup>	-	71.3	% of adults
Adults with Disabilities	-	10.4 <sup>4</sup>	-	12.1	% of adults

### 2.2.3 Health Insurance Coverage

The percentage of Connecticut residents without health insurance in 2007-2008 was 9.7% compared to 15.4 % nationally. The rate for children is 6.1% compared to 10.3% for the nation. Similarly, the health spend rate per capita in Connecticut is slightly greater than the rate for the U.S.: \$6,344 vs. \$5,283.<sup>4</sup>

Health Insurance Coverage of the Total Population, Connecticut (2007-2008) and U.S. (2008)						
	CT #	CT %	CT %	US #	US %	US %
Employer	2,072,400	60.1%	1.3%	157,194,100	52.3%	100.0%
Individual	160,300	4.6%	1.1%	13,995,800	4.7%	100.0%
Medicaid	396,500	11.5%	1.0%	42,326,300	14.1%	100.0%
Medicare	468,600	13.6%	1.3%	37,183,500	12.4%	100.0%
Other Public	16,300	0.5%	0.5%	3,505,000	1.2%	100.0%
Uninsured	334,200	9.7%	0.7%	46,339,500	15.4%	100.0%
Total	3,448,200	100.0%	1.2%	300,544,200	100.0%	100.0%

### 2.2.4 Public Health and Health Care Systems in Connecticut

Public health and health care are overlapping but separate systems. Health care is delivered and managed locally through public, nonprofit, and private providers that serve individual patients. Public health focuses on population health and is managed across all levels of government—local, tribal, state, regional, and national.

The health care system's infrastructure in Connecticut ranges from a one-physician office to a 1,000 bed hospital, while the public health infrastructure ranges from a part-time local health department to the State's Department of Public Health. The scope of public health and health care services expands these ranges exponentially.

Connecticut's public health and health care providers number over 20,000. The State licenses and regulates 16,690 physicians, 32 acute care and children's hospitals, 14 community health

centers with over 50 satellite sites, 77 local health departments (52 are full-time, and 25 are part-time), 241 nursing homes, 251 outpatient clinics, 424 behavioral health facilities; and 29 urgent care centers. Beyond physicians, the DPH licenses over 60 different practitioner titles. In addition to these direct care providers, Connecticut has hundreds of emergency medical services managed by municipal, public, and private entities.

The diverse and extensive public health and health care systems share a common issue - a limited infrastructure and capacity to exchange health information in a secure, efficient, and timely manner.

### **2.2.5 Public Health Information Exchange in Connecticut**

Government agencies are responsible to collect, process, and report health information across the jurisdictions of public health, social services, and clinical operations. In Connecticut, multiple health information systems with a variety of health related data can contribute to, and will be affected, by HIE implementation. Several State agencies, including the Connecticut Departments of Public Health, Social Services, Children and Families, Developmental Services, Mental Health and Addiction Services, Corrections, Education, and Veterans Affairs, have health information systems and data warehouse capabilities that can leverage the HIE or be leveraged by other users of the HIE.

Many of these systems operate in technology and information silos because their development was based on independent, program-focused funding with limited interaction among the systems. As a result, the data collected are fractured in multiple databases and are, therefore, difficult and costly to integrate, aggregate and use beyond the original program purpose. Although there is State and Federal momentum to connect or consolidate these systems and to establish standards for the collection and use of these data, a state HIE will secure the success of health data consolidation.

The baseline and critical asset to health information exchange in Connecticut is managed by the DPH, with data collection, processing, and reporting responsibility to federal, state, and local agencies using secure, quality systems. Public health information can be categorized into vital statistics, disease surveillance, case management, environmental monitoring, and emergency response systems. DPH is responsible to transform the data collected into information that drives policy and program development. Connecticut has made progress in updating the public health infrastructure over the years, but there is work still to be done to strengthen its overall capacity. Many facets of the system remain inefficient due to lack of automation, incomplete training, and a fragmented local health structure.

The DPH data services support preventive services; registries of cancer incidence, immunizations, and trauma services; reportable and infectious diseases; laboratory testing; and program administration to promote health and prevent disease. The inclusion of the DPH data services into health information exchange provides real-time access to:

- laboratory testing results;
- prenatal and birth information;
- mortality by cause and community;
- epidemiologic information to improve diagnostic accuracy and treatment decisions;
- outbreak alerts;
- access to federal and state screening, practice, and treatment guidelines or directives;
- patterns of contagions and drug-resistant organisms; and

- immunization histories.

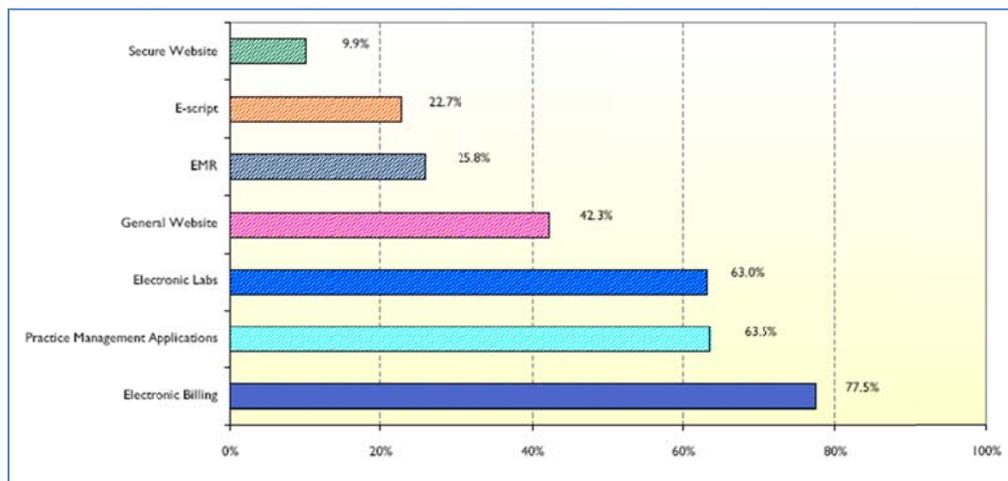
The State does have a variety of HIT systems that can leverage a HIE, given the development of interfaces and standard communication. A brief description of some of the assets the State manages is listed in Appendix 4.5.

## 2.2.6 Health Care Information Exchange in Connecticut

### 2.2.6.1 Electronic Health Record (EHR) Adoption

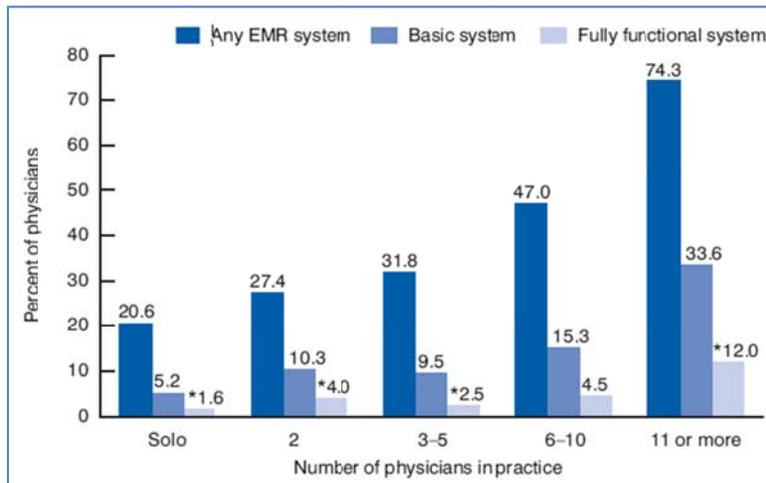
According to a 2008 study<sup>5</sup>, Health Information Technology in Connecticut among providers has varying levels of adoption. Office technologies, including Practice Management Applications and Electronic Billing, are the two most utilized technologies with 63.5% and 77.5% adoption among practices, respectively. On the clinical side, Electronic Labs is the most utilized technology, with 63.0% practice adoption; however, only 26% of practices use an Electronic Medical Record.

**Figure 2. Percent of Connecticut Physicians Using Technologies in Practice**



The figure above provides an overview of HIT adoption by physicians in the state. Nationally, the CDC reports that HIT adoption is proportional to the number of providers in a practice. As shown below, in 2007 solo practices showed only a 20% adoption rate of any EHR system (even with single-modal basic functionality) while practices of 11 or more reported an adoption rate over three times as high<sup>6</sup>. The dichotomy in fully functional systems is even more dramatic, where expectation of adoption is over seven times as high in large practices as solo practices.

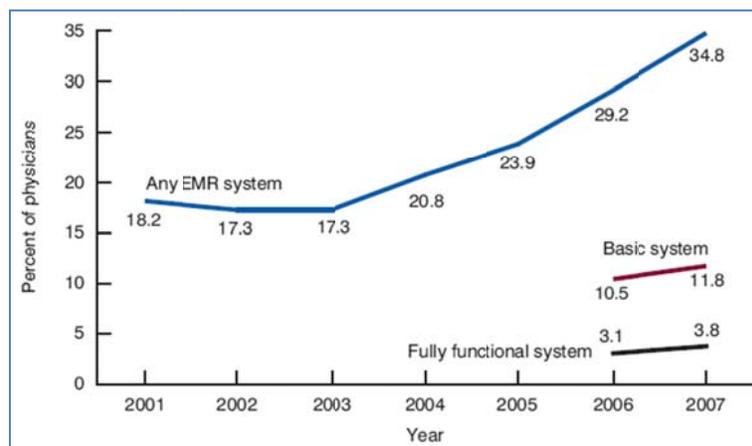
**Figure 3. National HIT Adoption by Office based Physicians in the United States,**



This adoption curve is expected as smaller practices are generally less able to make a jump financially to EHR and, therefore, are less willing to take the risk of adoption. This dichotomy between practice sizes is likely to continue, even with governmental assistance.

Adoption rates have increased steadily for the past five years, though the rate of adoption will not yield a high overall adoption of HIT in the next few years, especially in small practices. In 2007, only 1 out of 3 physicians in small practices had any EHR system, while less than 12% had “basic systems” and less than 4% had a fully functional system<sup>7</sup>. A projection of this trend, even with increased support from Federal funding, may not provide the desired adoption to effectively support a State HIE. The figure below shows past adoption metrics for limited to fully functional systems.

**Figure 4. EHR Adoption by Office-based Physicians in the United States: 2001 2007**



In April 2010, to help address this inconsistent adoption of HIT, eHealthConnecticut was assigned as a REC for Connecticut and received \$5.75 million in ARRA monies to promote HIT

adoption among providers in the State. Through the efforts of the REC in collaboration with the HITE-CT, the inconsistent adoption of HIT within the State will be addressed so as to support providers' readiness and adoption.

In a study supporting the 2009 Connecticut State Health Information Technology Plan<sup>8</sup>, 14 of 32 hospitals in the State responded. Of those, 13 had functional Electronic Health Record systems in place. The 14<sup>th</sup> hospital was then in the process of implementing one. Of these 14 hospitals, all have electronic data interfaces in most departments, with the lowest concentration of interfaces in Emergency and Acute Care departments.

## Laboratory Systems

Hospital laboratories responding to the survey showed that all had IT systems in laboratories and had interfaces available to communicate electronically with clinical departments in the hospital and affiliated physicians. All but one hospital laboratory had this functionality as part of their EHR for physicians to review and receive information, but fewer than half (6 of 14) shared data with outside laboratories.

A New England Journal of Medicine (NEJM) study showed that 77% of hospitals nationally had the ability to view lab results electronically; however, only 20% could order lab tests electronically<sup>9</sup>. A 2007 American Hospital Association (AHA) study showed similar results viewing statistics, though over 70% demonstrated implementation of lab order entry<sup>10</sup>.

Physicians as a whole, however, have a relatively high level of adoption of lab reporting usage, with 63% reporting use of Electronic Labs technologies in their practices. Physicians can order and review results with these technologies. Nationally, the capability to view lab results electronically was reported by 44% of office-based physicians<sup>11</sup>, suggesting that Connecticut is advanced in this area.

Though this functionality is one of the more adopted technologies among physicians and hospitals, full electronic exchange of lab orders and results between systems remains limited, and will likely trend with overall EHR adoption.

## ePrescribing

As with lab adoption and usage, 13 of 14 hospitals responding to the 2009 survey have pharmacy IT applications, 12 have pharmacy order functions built into their EHR with the other two planning on implementing this functionality within 2-3 years. All but two of those have pharmacy interfaces to communicate with other systems, but only one shares data with retail pharmacies.<sup>12</sup>

Physician practices report a low adoption rate as well, with only 23% reporting use of an E-script technology in their practice.<sup>13</sup> In 2009, DSS introduced its Medicaid ePrescribing system, which will likely serve to drive this adoption higher in applicable physician groups. This system is described in more detail later in this document.

Statistics from 2009 from a national ePrescribing leader show that only 16% of physicians are ePrescribing, 14% of all eligible prescriptions are electronically routed, and 29% of patient visits include electronic pharmacy benefits requests<sup>14</sup>. These adoption and usage metrics are especially encouraging given that since 2007, physicians that ePrescribe have increased over 100%, and electronic prescriptions and benefits requests have increased nearly 400%. The same study showed that approximately 100% of community pharmacies are activated for ePrescribing.

In March 2010, the Drug Enforcement Administration released the Interim Final Rule on e-Prescribing of Controlled Substances which requires electronic signatures and authentication of the prescribing provider using at least two independent and approved methods. EHR systems used by Connecticut’s providers will need to offer this functionality for e-Prescribing to be extended in this way.

Development of a Connecticut ePrescribing program began in February 2007, when DSS was awarded a Medicaid Transformation Grant from CMS. In October 2009, the DSS implemented the Medicaid ePrescribing program to its providers. The ePrescribing program allows actively enrolled prescribers and hospitals who are currently utilizing an e-Prescribing service to access eligibility information, formulary coverage, and medication history for clients in all of the Connecticut Medical Assistance Programs.

Hewlett Packard is DSS’s fiscal agent contracted to process and adjudicate claims to support the Connecticut Medical Assistance Programs. HP became a fully certified payer in the Surescripts network. This certification allows HP to respond to requests for eligibility, formulary, and medication claims history from prescribers using certified e-prescribing software.

Currently, the DSS is reporting over 180,000 eligibility and medication history transactions per month. The following data was collected for May 2010 through October 2010 and continues to reflect a growing trend in the Connecticut ePrescribing environment:

	<b>e-RX Eligibility Transactions</b>	<b>e-RX Med History Transactions</b>	<b>Monthly Formulary</b>
May 2010	80,025	50,879	29,397
June 2010	98,222	53,523	26,948
July 2010	97,473	52,328	30,425
August 2010	106,905	53,936	24,145
September 2010	116,734	56,645	27,452
October 2010	123,773	59,065	33,910

**2.2.6.2 Health Care HIE Initiatives**

There are several instances of HIE initiatives in Connecticut as well as other related efforts for sharing information between organizations. The projects range from offering external access to a central system, expanding rollout of a centralized system to aligned providers, to true disparate systems with interfaces and a centralized Master Patient Index (MPI). Some of the notable HIE initiatives at various stages of planning and implementation in Connecticut are summarized in this section.

**Community Health Centers (see Appendix 4.8)**

Federally-qualified health centers across the state of Connecticut are actively engaged in health information technology projects. While the statewide HIE will involve the exchange of information for a variety of purposes, the most promising exchange is that of health information, such as diagnoses, prescriptions, and diagnostic tests. In order for a federally-qualified health center (FQHC) to exchange such information, it must first be captured effectively within an

electronic medical record (EMR) or electronic health record (EHR). Although the adoption of EMRs in FQHCs has increased over the past five years, there is still much work to be done. A survey conducted in March 2010 by the Commonwealth Fund found that 40% of community health centers have electronic medical records, but how effectively those EMRs are used varies.<sup>15</sup>

Among the 14 FQHCs in Connecticut, eight (57%) have implemented EHRs with varying levels of system adoption. This rate exceeds the national community health center EHR adoption rate of 40%. Some FQHCs, such as Optimus Health Care, Inc. in Bridgeport, and Stay Well Health Center, Inc. in Waterbury, have achieved advanced levels of adoption; from these systems, providers are able to prescribe medications electronically, and practice administrators can obtain management reports on clinical, financial, and operational activities. Other FQHCs in the state are working from early or intermediate stages toward an advanced level of implementation. Six FQHCs in Connecticut have not yet implemented an EHR system.

In 2009, HRSA awarded 12 FQHCs in Connecticut \$11,430,925 in Recovery Act Capital Improvements grants. The funds were used for a variety of purposes, including purchase of new practice management and EMR systems; purchases of HIT equipment; upgrades and enhancements to the existing IT infrastructure, and purchase of a dental IT system that interfaced with the existing EMR system.

The Community Health Center, Inc. has implemented two projects with this funding:

- Quality Improvement Initiative: Provider Electronic Scorecard Utilization and Patient Self-Management to Drive Quality Improvements in Agency-Wide Control of Hypertension at a Multi-Site Community Health Center
- Dental Electronic Health Record and Digital Imaging Initiative.

The QI initiative is an organizational intervention designed to improve the quality of care for minority and disadvantaged patients with hypertension (HTN), utilizing evidence-based elements of quality disease management. This intervention aims to activate providers, patients and the organization as a whole to improve the quality of HTN care through implementation of a Quality Improvement program that unites existing electronic resources (eCW8), organizational, research and management resources, training, and evaluation to improve HTN target treatment adherence through EHR capacities for providers, patients, panel and organizational knowledge, as well as provider electronic decision making assistance (CDSS), e-consult, and patient self management through patient portal access to communicate home drawn blood pressure and feedback between the provider and patient.

In addition, funds purchased servers to build the infrastructure for a Dental EHR program. digital imaging has been rolled out at FQHC dental sites using Gendex sensors. The next step is to implement the Dental EHR module which is fully integrated with their Medical and Behavioral Health EHR. The goal is to have one cohesive health record used by all CHC providers to promote coordination of care. The overall need for the integrated record moves toward the national goals of health information exchange as it allows all clinical patient information (Dental, Behavioral Health, Obstetrics, and Medical) to flow to the Electronic Health Exchange web-based portal for health care providers to access patient health information (with consent), which also has the ability to interface with any outside HIE.

In a related project, seven FQHCs are involved in an HIT project focused on sharing data related to emergency room utilization. Under a grant program affiliated with DSS services, participating FQHCs and hospital use a software product called My Health Direct to schedule primary care appointments for patients seen in emergency departments. Because the software enables the hospital staff to give the patient a follow-up appointment before they leave the

hospital, continuity of care is supported. While this project does not share data between disparate systems, it supports the long-range goals of the State HIE Program in terms of advancing patient-centric care and enabling coordinated, affordable and efficient health care by providing rapid access to patient health care information from multiple providers.

### **Aetna PHR**

Aetna has launched a personal health record for its members in Connecticut. The project gathers information that is available to the company, including claims data, lab results data and member reported data, and presents it to the member for review and control. It also provides members with reminders and opportunities for disease management programs, customized to the member. Aetna has been involved in the development of the State HIE and will be evaluating methods to use the HIE to augment the current offering.

### **Safety.Net Planning**

The goal of Safety.Net Planning is to establish collaboration between providers to plan the implementation of EHR systems. Providers include the Ethel Donahue TRIPP (Translating Research Into Practice and Policy) Center (UConn Health Center), Asylum Hill Family Practice Center, Fair Haven Community Health Center, St. Francis Hospital and Medical Center, Community Health Center, Inc., Generations Family Health Center, Hill Health Center, Community Health Center Association of Connecticut, Staywell Health Center and the Burgdorf/Bank of America Health Center. The effort has been funded by the Connecticut Health Foundation.

### **HealthLink**

Danbury Hospital, in cooperation with many of the area practices, laboratories and pharmacies, has developed a working HIE. The system now incorporates over 250 providers, 500 support staff and 500,000 patient records. This equates to approximately one-third of the medical community in the area.

The HIE incorporates several services, including:

- HealthLink Print/Fax—Print/fax capabilities for providers who do not have electronic capabilities
- HealthLink VHR—A Virtual Health Record (VHR); a migration from their legacy system which has 80-90% adoption
- HealthLink eRx—ePrescribing, with a goal for 80% adoption by the end of 2010 and 100% by the end of 2011
- HealthLink EMR—An Electronic Medical Record including an “EHR lite” offering
- HealthLink EMR Connector—A “last mile” two-way task interface
- HealthLink Image Exchange—An imaging and report repository exchange, which is expected to launch later in 2010.

Additional information regarding the HealthLink HIE is listed in Appendix **Error! Reference source not found.**10.

## **Medicaid Transformation Project—A Health Information Exchange pilot through the Department of Social Services**

The Health Information Exchange project was part of the Medicaid Transformation Grant awarded to DSS in February, 2007. In January 2009, the DSS contracted with eHealthConnecticut to conduct a pilot project that would demonstrate the technology, functionality, and benefits of HIE for health care providers, purchasers, payers, consumers, and health policy makers.

eHealthConnecticut has completed several activities needed to operate the HIE. Training courses and website education resources were developed, in addition to privacy and security policies for the pilot health information exchange. These policies provide basic, minimum policy requirements for data exchange during the pilot phase of the HIE. eHealthConnecticut finalized and executed Data Use and Reciprocal Support Agreements (DURSA) with all the pilot participants. The purpose of the DURSA is to provide a legal framework that will enable participants to exchange data.

Additional information regarding the DSS pilot is listed in Appendix **Error! Reference source not found.11**.

### **Middlesex Hospital**

Middlesex Hospital is the only hospital in Middlesex County, an area of Connecticut with 17 municipalities and approximately 200,000 residents. Approximately 500 physicians have privileges at Middlesex Hospital. This hospital is in the process of implementing the eClinicalWork's Health Information Exchange product called eXH. It is Middlesex Hospital's plan to provide access to the eHX to all of the physicians that have privileges. Currently the hospital is piloting the eHX with the hospital and the Family Practice Residency Practice (FPRP). This practice represents 35 physicians and has a patient population of about 20,000. The hospital has loaded the 650,000 master patient records into the eHX and is testing the patient update function. The FPRP has been connected to the eHX test system and the hospital is currently testing the Patient Update and the Continuity of Care (CCD) upload function. Middlesex plans on going live with these two entities in December, 2010.

Once the above phase is completed, the hospital plans to connect the Middlesex Hospital Primary Care (MVPC), the Community Health Center, Inc. (CHC), a Federally Qualified Health Center (FQHC), and Essex Medical Group. MHPC is a 35 member physician group that takes care of approximately 60,000 patients from 9 locations and the Essex Medical Group with 3 physicians that are not affiliated with the Hospital. CHC has 11 physicians providing care in Middlesex County but is also the largest FQHC in the state providing care in 12 major areas statewide. All groups are eClinicalWorks clients. The hospital anticipates having these connections by the first quarter of 2011.

Once the above phases are completed, the hospital plans to connect the following practices:

- Middlesex Cardiology Associates, a 16 physician cardiology group using Sage's EHR;
- ProHealth Physicians, a 38 physician group in eight locations using Allscript's EHR;
- Middlesex Gastroenterology Associates, a seven physician group with a GI Center using Greenway's EHR.

Once completed, the hospital calculates it will have 98% of the primary care physicians and 37% of the specialists connected to the eHX providing patient updates and posting CCD. The hospital is scheduled to finish the Cerner upgrade to the next release in December and will have

the capability to post CCD to the eHX. Middlesex anticipates doing this in 2011. The hospital will allow access to all physician groups that do not have an EHR to look at clinical CCD filed on the server.

In addition to the above, the hospital is a participant in the NHIN Direct Connecticut Pilot project and plans to provide Lab, Radiology and Hospital CCDs to Physicians using this network. Approximately 20 small Physician Groups use Quest 360 CDR of the DocSite EHR. Middlesex Hospital is planning on using NHIN Direct to deliver the above clinical information to them and to foster peer-to-peer communications

The hospital is also discussing the possibility of connecting the Middlesex HIE to the State pilot HIE in Hartford. Current plans include updating the State pilot HIE Patient Registry with Middlesex HIE patient registry and providing a pass through link that will allow access to Middlesex's clinical documents from any authorized user in the state or nationally that need the clinical information.

### **Yale New Haven Health System (YNHHS)**

Yale New Haven Health System (YNHHS) includes the delivery networks of Yale New Haven Hospital, Bridgeport Hospital and Greenwich Hospital. It has in place a common Physician portal and MPI for 1400 employed and affiliated physicians.

YNHHS is in the final stages of agreeing to license and implement Epic EHR systems enterprise wide. This implementation of Epic is expected to start in early 2011, and will take four years to complete. The vision is to make Epic the EHR of all YNHHS physicians and provide HIE connectivity to the statewide HIE and NHIN.

### **The William W. Backus Hospital**

The William W. Backus Hospital is creating a regional health HIE in eastern Connecticut. The hospital and its medical staff have been planning this exchange for over two years. Implementation started in January 2010. The HIE is expected to support over 300 physicians in the area.

The strategic plan of The William W. Backus Hospital calls for investments in information technology and e-health to improve connectivity between the hospital and physicians and to advance the implementation of a community-wide electronic health record system in the greater Norwich area.

The proposed project includes the enhancement of a broadband infrastructure to support secure, confidential and interoperable electronic health records. The local community health information exchange includes patient information from The William W. Backus Hospital, Backus outpatient facilities, outreach laboratories, schools, the local community college, private physician practices, several community health centers, adult daycare centers, a home health agency, and citizens.

### **Charlotte-Hungerford Hospital**

Charlotte-Hungerford Hospital and upper Litchfield County physicians are currently reviewing various EHR, PM and HIE vendors, configurations and pricing models. This group has set aside considerable funds for this year to build an integrated community of providers sharing patient data and using hospital services (lab, radiology, referrals, etc.). The group is also looking at using the HIE to connect to a shared billing service.

They expect to conclude a market review of options, approve a configuration and operational plan and begin phasing in ambulatory EHR implementation and a functioning HIE configuration (with possible billing services) over the second half of 2010 and into 2011 as they collectively move toward meaningful use and clinical integration. The hospital is also expanding its in-house EHR and HIE capabilities to achieve meaningful use in 2011/2012.

### **NHIN Direct – Pilot Project**

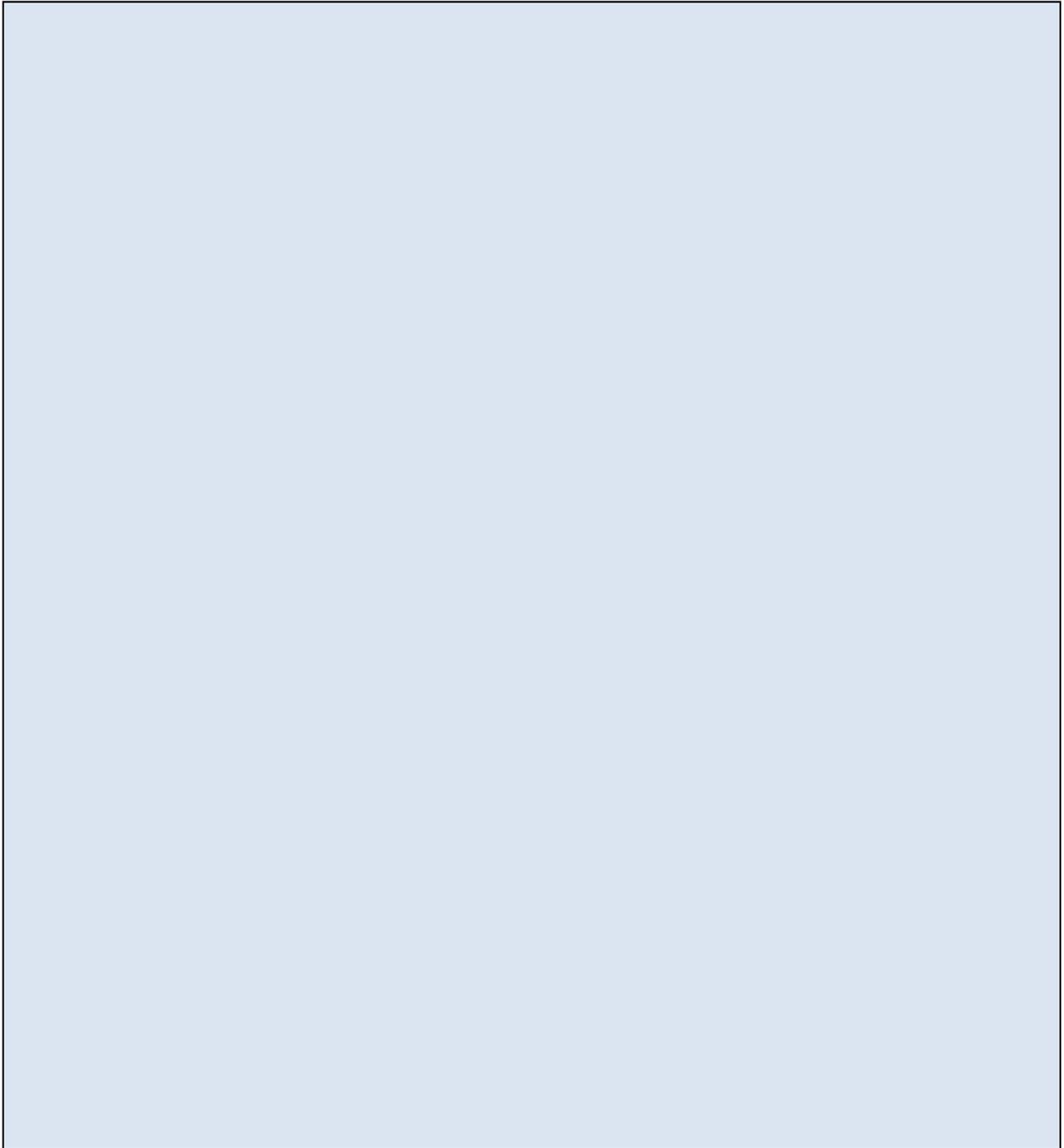
The Nationwide Health Information Network (NHIN) is a set of standards, services and policies that enable secure health information exchange over the Internet. The project itself will not run health information exchange services. The NHIN Direct project develops specifications for a secure, scalable, standards-based way to establish universal health addressing and transport for participants (including providers, laboratories, hospitals, pharmacies and patients) to send encrypted health information directly to known, trusted recipients over the Internet. The NHIN Direct project will expand the standards and service descriptions available to address the key Stage 1 requirements for Meaningful Use, and is intended to provide an easy "on-ramp" for a wide set of providers and organizations looking to adopt.

Since mid-2010 a number of Connecticut organizations taking a leading interest in HIT and HIE have formed a group to sponsor one of the NHIN Direct pilots for the "Central Connecticut Geography". This project is being led by Medical Professional Services (MPS) Inc. and lists eHealthConnecticut as the major stakeholder. The following organizations are participating:

- Quest/MedPlus
- DocSite
- Middlesex Hospital
- The Kibbe Group, LLC
- American Academy of Family Physicians (AAFP)
- eClinicalWorks
- Microsoft Health Vault (MHV)
- Community Health Center, Inc. (CHC)

The objective of this project is to demonstrate the feasibility of using NHIN Direct protocols to connect and securely share clinical information among a diverse group of physicians in small practices in Connecticut who have a heterogeneous set of HIT tools (from web access with email, modular EHR components to fully functional EHRs), a hospital, a Federally Qualified Health Center (FQHC) and a large laboratory provider in support of Meaningful Use and the continuity of care.

## **2.2.7 Environmental Scan Summary**



## **2.2.8 Meaningful Use Gap Analysis**

With the onset of meaningful use adoption, the HITE assessment noted throughout this Chapter requires gap filling strategies for the next three years. The following gap analysis is intended as a guide for the HITE-CT, the REC, and the DSS to assure provider compliance with ONC and CMS requirements for meaningful use.

## Electronic Prescribing

To determine the state of electronic prescribing activities currently taking place in Connecticut requires an understanding of the following:

- Percent of physicians use of e-Prescribing tools;
- Percentage of eligible prescriptions routed electronically;
- Percentage of pharmacies have e-Prescribing capabilities activated;

Electronic prescribing, (e-prescribing) is the use of technology to improve prescription accuracy, increase patient safety and to reduce costs, as well as enable secure bi-directional electronic connectivity between physicians and pharmacies. In Connecticut, the implementation of e-prescribing has been extremely successful. At the fifth annual Safe-Rx Awards, Surescripts, the nation's largest e-prescribing network, Connecticut was ranked sixth in the country with the most e-prescribing activity.<sup>16</sup> States were ranked on three factors: percentage of e-prescriptions, electronic use of medication history and electronic use of prescription benefits information. This meant that a state with a higher percentage of electronic prescriptions could rank lower than a state with fewer electronic prescriptions, depending on their performance in the other measures.

The table below details the ePrescribing program for Medicaid and non-Medicaid users in the State. The Medicaid ePrescribing program is on track to exceed over 3.2 million new e-prescriptions in 2010, 1.2 million refill requests and 1 million refill responses. These statistics are growing at between 4% and 5% monthly in 2010 and this trend is expected to continue.

**Statewide ePrescriptions, Refill Requests and Refill Responses, Jan - Sep, 2010**

	<b>New ePrescriptions</b>	<b>Refill Requests</b>	<b>Refill Response</b>
January	219,047	90,038	77,620
February	215,698	88,042	77,979
March	261,472	106,516	96,478
April	265,758	96,845	85,525
May	264,555	89,877	73,096
June	294,952	99,256	86,273
July	272,034	113,198	95,688
August	296,815	120,605	104,764
September	318,682	126,631	108,994
<b>Total</b>	<b>2,409,013</b>	<b>931,008</b>	<b>806,417</b>

According to data compiled by Surescripts, one way to measure the increase in e-Prescribing adoption is to calculate the percentage of physicians who route their prescriptions electronically. The percentage of Connecticut providers routing e-Prescribing at year end were: 7% in 2007, 13% in 2008, and 16% in 2009. The percentage of eligible prescriptions routed electronically in Connecticut was 3% in 2007, 6% in 2008, and 14% in 2009.

DPH, working in collaboration with the Connecticut Department of Consumer Protection (DCP), identified a listing of all pharmacies licensed in Connecticut including chain and independent pharmacies as well as non-resident pharmacies.<sup>17</sup> As of November 1, 2010, this list identified approximately 660 licensed pharmacies across the state as well as approximately 510 non-resident pharmacies. Appendix 4.6 lists both in-state and non-resident pharmacies. Pharmacies and prescribers must have a Drug Enforcement Administration (DEA) certified system in order to send and retrieve e-prescriptions for controlled substances. DEA will provide an approved list of vendors for e-prescription in the near future. Additionally, Surescripts estimates that over 90% of pharmacies have e-Prescribing capabilities activated for accepting electronic prescribing and refill requests. This estimate for eligible prescriptions does not include controlled substance since that is not eligible under 2009 DEA Regulations.

Additionally, as part of the Medicaid Transformation Grant, DSS established the ePrescribing program for Medicaid providers as noted earlier. The program was launched in 2009. It accommodates over 1,400 providers and transmits over 80,000 e-prescribing transactions, 50,000 medication histories and 25,000 formulary requests monthly. This technology allows providers with a Surescripts-enabled e-prescribing system to access preliminary information for clients enrolled in Medicaid fee-for-service, HUSKY A, HUSKY B, State Administered General Assistance (SAGA), Connecticut Pharmaceutical Assistance Contract to the Elderly and Disabled (ConnPACE), Connecticut AIDS drug Assistance Program (CADAP) and Charter Oak programs. The e-prescribing system allows access to: medications requiring prior authorization; preferred drug list and alternatives; resource links; quantity and age limits; gender restrictions for medications; and benefit co-pay information.

### ***Gap Filling Strategies***

The University of Connecticut Health Center (UCHC), under contract with DPH, is conducting multiple surveys that will be used to obtain baseline data about HIE readiness, HIE preparedness, overall capacity for electronic exchange among pharmacies within the state and barriers for achieving success. Surveys will be administered at baseline (expected February 2011), twelve months post-baseline, and 24 months post baseline. These surveys will be distributed as web-based surveys and will be further administered via the telephone if response rates are low. Additionally, professional organizations, such as the REC, medical societies, and HITE-CT, will be enlisted to encourage survey participation.

Additionally, DPH will work with the Connecticut State Medical Society, county medical societies, the REC, the DCP, the Connecticut Pharmacists Association, and the Connecticut Pharmacies Association to ascertain and overcome remaining barriers.

Each of the gap filling strategies will, at a minimum, require:

- A clear and viable strategy to ensure that all eligible providers in the state have at least one viable option in 2011;
- A project timeline;
- An estimate of funding required – depending upon congressional actions, state deficit mitigation and private sector support – with cost estimates determined through finance model; and
- The desired technical support and coordination from ONC to support the state strategy.

### Goals and Tracking Progress

Activity	Current State (Nov. 2010)	Goal (Nov. 2011)	Goal (Nov. 2012)	Goal (Nov. 2013)
% Eligible physicians use of e-Prescribing	TBD	TBD	TBD	TBD
Routing of Scripts	14%	20%	25%	30%
Pharmacy Access	90%	TBD	TBD	TBD

### Receipt of Structured Laboratory Results

To determine the state of structured laboratory results activities currently taking place in Connecticut requires an understanding of the following:

- Percent of labs able to produce and deliver structured labs results;
- Percent of labs able to receive orders electronically;
- Percent of lab results currently being delivered electronically; and
- Percent of providers receiving structured lab results.

There are a number of challenges that face integrating laboratory results into a clinician's system. First, the data formats utilized to send lab results are not standardized. The second challenge is that lab results are transmitted using different modalities, including, secure emails, facsimiles, portals and direct interfaces into EHRs.

DPH began the environmental scan of the laboratories by identifying where and how many licensed laboratories were in the state through the Facilities Licensing and Investigations Program. As of November 1, 2010 there are: 5 public health laboratories, 32 blood bank laboratories, 77 hospital laboratories, 91 independent clinical laboratories and 192 physician office laboratories. A list of laboratories can be found in Appendix 4.7.

### Gap Filling Strategies

The University of Connecticut Health Center (UCHC), under contract with DPH, is conducting multiple surveys that will be used to obtain baseline data about HIE readiness, HIE preparedness, overall capacity for electronic exchange among laboratories within the state and barriers for achieving success. Surveys will be administered at baseline (expected February 2011), twelve months post-baseline, and 24 months post baseline. These surveys will be distributed as web-based surveys and will be further administered via the telephone if the response rates are low. Additionally, professional organizations will be enlisted to encourage compliance including the REC, medical societies, HITE-CT among others. Additionally, DPH will work with the REC to survey providers' receipt of laboratory results.

DPH is considering revising the § 19a-36-D32 of the Connecticut State Regulations, which is the regulatory authority, regarding "State Law on Laboratory Reports" to ensure alignment with current Clinical Laboratory Improvement Amendments (CLIA) regulatory guidance as well as compliance with national electronic health information standards by a specific date. Currently Section § 19a-36-D32 states:

*(a) Laboratory findings on a specimen shall be reported directly to the licensed provider who ordered the testing pursuant to authority granted to such provider by chapter 370, 372, 373, 375,*

377, 378, 379, 380 or 400j of the Connecticut General Statutes, and may be provided by laboratories other than the department's laboratory to lay persons upon the **written** request of the provider who ordered the testing. Laboratories other than the department's laboratory may also provide findings upon the **written** request of providers who did not order the testing, so long as the requesting provider is also statutorily authorized to order such testing pursuant to chapter 370, 372, 373, 375, 377, 378, 379, 380 or 400j of the Connecticut General Statutes, and is providing care to the patient who is the subject of the testing. Nothing in this section shall prohibit the issuance of reports of laboratory findings to town, city or state health officials as required by the Regulations of Connecticut State Agencies or the inspection or impounding of records of such reports by a representative of the department.

(b) No report shall be worded to convey or simulate a diagnosis or prognosis or to specify or suggest specific medication, surgical manipulation or other form of treatment unless signed by a physician licensed to practice in Connecticut or in the state in which the laboratory performing the examinations is located. This subsection shall not prohibit the laboratory from furnishing the normal ranges for the methods of analysis employed in such laboratory nor shall it prohibit the laboratory from identifying patient values that are outside the normal ranges for the methods of analysis employed. When the specimen has been referred for examination to an out-of-state laboratory, the report shall bear or be accompanied by a clear statement that such findings were obtained in such laboratory and shall specify its name and location. (Effective June 4, 1996; amended effective October 3, 2005.)

### Goals and Tracking Progress

Activity	Current State (Nov. 2010)	Goal (Nov. 2011)	Goal (Nov. 2012)	Goal (Nov. 2013)
% of labs able to produce and deliver structured labs results	TBD	TBD	TBD	TBD
% of labs able to receive orders electronically	TBD	TBD	TBD	TBD
% of lab results currently being delivered electronically	TBD	TBD	TBD	TBD
% of providers receiving structured lab results	TBD	TBD	TBD	TBD

## Sharing Patient Care Summaries Across Unaffiliated Organizations

There are several instances of HIE initiatives in Connecticut as well as other related efforts for sharing information between organizations. HITE-CT plans to incorporate practical lessons into the Statewide HIE regarding “transfer of care” summaries and work on data sharing agreements and educational material from the existing and planned provider-based HIEs. The linkage between these systems is limited and approved technology to assure interoperability has not been assessed at this time.

### Gap Filling Strategies

In order to determine the transmission of summary care documents in accordance with national standards, DPH will work with the REC to develop a survey that will assess the current level of adoption of EHR technology that is capable of producing and receiving summary care records and will work with Connecticut’s Hospital Association and HIE and HIE-like organizations within the state to survey transmittal capabilities as well as methods utilized.

### Goals and Tracking Progress

Activity	Current State (Nov. 2010)	Goal (Nov. 2011)	Goal (Nov. 2012)	Goal (Nov. 2013)
# or eligible hospitals with certified EHR technologies capable of preparing, transmitting and receiving summary care records	TBD	TBD	TBD	TBD
# of eligible professionals with certified EHR technologies capable of preparing, transmitting and receiving summary care records	TBD	TBD	TBD	TBD
# of qualified organizations with capabilities to transport summary care records	TBD	TBD	TBD	TBD

## Electronic Eligibility and Claims Transactions

Exact provider HIT adoption numbers are not available for Connecticut providers. To estimate the adoption rates for providers, statistics from statewide and national adoption rates and estimations based on provider claims data have been used. Data from Connecticut hospitals is more readily available and was analyzed with assistance from the Connecticut Hospital Association (CHA), which represents twenty nine (29) of the State’s thirty-two (32) acute care and children’s hospitals in the state.

To further understand the level of EHR adoption in potentially eligible providers, DSS has launched a HIT survey that is targeting over 1,200 providers that met a threshold of 1,000 Medicaid claims in 2009. Once the survey results are collected, DSS anticipates using the responses to obtain a better set of HIT adoption numbers from providers in the foreseeable future and to direct providers to reach out to the REC for additional information.

Additionally, as the insurance capital of the world, there are six Health Maintenance Organizations (HMOs) that provide services statewide, eight companies with approved individual health insurance policies, three state sponsored individual health programs, six with approved dental policies, nine with cancer policies' insurance companies, and 19 companies with approved small employer health insurance policies. DPH is working with the Connecticut Department of Insurance to determine the number of commercial health plans supporting electronic eligibility and claims transactions.

**Gap Filling Strategies**

As part of the evaluation of Physician's adoption levels of EHRs, we will track health plans support of electronic eligibility and claims transactions. Professional organizations, such as the REC, the state and county medical societies, and the HITE-CT, will be enlisted to encourage survey participation.

**Goals and Tracking Progress**

Activity	Current State (Nov. 2010)	Goal (Nov. 2011)	Goal (Nov. 2012)	Goal (Nov. 2013)
% health plans supporting electronic eligibility and claims transactions	TBD	TBD	TBD	TBD

**Public Health**

The relevant status, environmental data, strategies to meet meaningful use requirements are documented in the Strategic and Operational Plan related to electronically receiving immunizations, syndromic surveillance and notifiable laboratory results.

Connecticut is a "home rule" state with 169 municipalities managing the 77 health departments, 52 of which are full-time and 25 of which are part-time. The full-time health departments include 32 individual municipal health departments and 20 health district departments (containing two to 18 towns, each). The local health departments are critical providers of population-based public health services. The health departments are local agents of the DPH and mandated to carry out critical public health functions, including infectious disease control.

Currently, no local health departments receive immunization, syndromic surveillance or notifiable laboratory results electronically. The local health departments communicate with DPH either verbally, via email or via facsimile. However, DPH is migrating disease-related screening and surveillance to MAVEN, a commercial off-the-shelf package, to support disease surveillance systems. Once MAVEN is fully established, it will allow for the electronic exchange of information between health care entities including hospitals, laboratories, local health departments and DPH.

**Gap Filling Strategies**

The State's Medicaid Agency, DSS, through their State Medicaid HIT Plan, is supporting DPH in providing planning and infrastructure funds to support public health databases to meet meaningful use requirements by 2012.

### Goals and Tracking Progress

Although Public Health is not part of Phase 1 Meaningful use requirements; DPH is fully committed to ensure that public health is a priority for the State.

Activity	Current State (Nov. 2010)	Goal (Nov. 2011)	Goal (Nov. 2012)	Goal (Nov. 2013)
% Health Departments receiving immunizations data	0	TBD	TBD	TBD
% Health Departments receiving syndromic surveillance	0	TBD	TBD	TBD
% health departments receiving notifiable laboratory results	0	TBD	TBD	TBD

### Enabling Clinical Quality Reporting to Medicaid and Medicare

Connecticut has determined the initial prioritization of HITE-CT products and services as guidance for the operational planning process in three releases:

- Release 1 – Continuity of Care Documents (CCDs) and Public Health Registries and Reporting, to address components of Meaningful Use, provide benefits to all State residents and build a foundational infrastructure and data set.
- Release 2 – Quality/Gaps in Care Reporting, to develop and implement metric-based Quality Reporting and the “care gaps” and provide access to and integration with data from multiple sources. This release also includes integrating data from auxiliary services (e.g. lab results).
- Release 3 – Personal Health Records (PHRs), to allow all residents the ability to help manage their own care through the management of their health records.

HITE-CT will lead the effort to define a comprehensive enterprise architecture (including standards considerations) and document the full scope of required HITE-CT technology infrastructure and services. The architecture will permit the exchange of data between entities that house patient data and authorized health care providers in a manner that will accommodate users at various stages of technology adoption. HITE-CT will work with DSS, eHealthConnecticut, and CHA to encourage and support the adoption of EHRs and the HIE.

### Goals and Tracking Progress

Activity	Current State (Nov. 2010)	Goal (Nov. 2011)	Goal (Nov. 2012)	Goal (Nov. 2013)
% hospitals that provide quality measures electronically	TBD	TBD	TBD	TBD
% Eligible professionals that provide quality measures electronically	TBD	TBD	TBD	TBD

## **2.3 Coordination with Federally-funded Statewide Programs**

Formal coordination with ARRA-funded HIE programs includes the “3C3” Team, so named for its emphasis on ‘communication, collaboration and cooperation’ among DPH, DSS, eHealthConnecticut and Capital Community College. The 3C3 team meets monthly to share progress and barriers to successful implementation of HIE. In addition, the 3C3 seeks opportunities to leverage the works of each individual participating organization for the purpose of economy and efficiency. The 3C3 prepared a transition brief for the incoming state administration and is included in Appendix 4.14.

### **2.3.1 Medicaid Coordination**

The DSS Medical Care Administration has gained approval of its Planning-Advance Planning Document (P-APD) from the Center for Medicare and Medicaid Services (CMS) in order to proceed with the planning phase for the development of Connecticut’s State Medicaid HIT Plan (SMHP) and road map. It is DSS’s intention that the SMHP will align with and exercise opportunities for economy and efficiency with Connecticut’s HIE efforts; support provider adoption, including technical assistance and provider incentives; leverage the availability of clinical data for administrative efficiencies; and implement reporting for healthier Medicaid members and Connecticut residents. At the same time, a robust and viable state HIE is essential to the success of the SMHP.

Once the SMHP and road map, and required Implementation Advanced Planning Document (IAPD) are developed and approved by CMS, HITE-CT will move forward with the implementation of the SMHP to address the specific integration requirements between Connecticut’s HIE and Medicaid to promote and achieve widespread adoption and meaningful use of HIT, including the use of the HIE for the exchange of health information by eligible providers. This Strategic Plan describes the ongoing collaboration and coordination efforts with the State’s Medicaid Agency (DSS).

DSS has been an active participant in health information technology workgroups and collaborative efforts, including but not limited to:

- Contributing to the development of the statewide 2009 Health Information Technology Plan as a member of the Steering Committee overseeing the initiative;
- Collaborating with eHealthConnecticut to implement a health information exchange pilot with a targeted group of hospitals and FQHCs;
- Participating in meetings of the Health Information Technology & Exchange Advisory Committee (HITEAC), and as an active member of the HITE-CT Strategic Plan project team for the development of the Strategic and Operational Plan.

The following list includes the initial set of activities that DSS plans will be in the SMHP to support the integration of the statewide HIE with the Medicaid program’s HIT adoption efforts:

- Through December 31, 2010, continue to be a member of HITEAC to help ensure Connecticut’s HIE supports Medicaid needs in terms of program activities promoting HIT adoption and meaningful use;
- Beginning October 1, 2010, as a member of HITE-CT Board of Directors to provide oversight of the HIE initiative to promote the long term sustainability of HITE-CT;
- Ensure that clinical data is shared across Connecticut’s health care system, including Medicaid;

- Administer the Medicaid HIT adoption and meaningful use incentive program and link providers into the Connecticut HIE.

### 2.3.2 Public Health

The Connecticut State Government HIT Coordinator has begun to coordinate with a number of the federally funded programs across the state. Some of these programs are summarized in Table 1.

**Table 1. HITE-CT Public Health Coordination**

Program	HITE-CT Coordination
<b>Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement Program</b>	The State Epidemiologist has expressed interest in collaborating even further to develop capabilities that would support ELC efforts.
<b>Connecticut Prescription Monitoring and Reporting System</b>	Significant coordination already exists between this program and the HITEAC. The Connecticut Commissioner of the Department of Consumer Protection is a member of the HITEAC and the HITE-CT Board of directors and the manager of the CPMRS is a HITEAC attendee.
<b>Maternal and Child Health State Systems Development Initiative programs</b>	There is currently collaboration between this program and DSS, DCF, UCONN and the Connecticut State Department of Education. All have expressed interest in integrating further with the HIE for increased data availability
<b>State Office of Rural Health Policy</b>	The Office has connections to DPH and is eager to collaborate with HITE-CT to promote HIT and HIE services to rural providers.
<b>State Offices of Primary Care</b>	The State Office of Primary Care in Connecticut is part of the Department of Public Health and has been involved in the development of this Strategic and Operational plan, and will be seeking opportunities to work further with the HIE.
<b>State Mental Health Data Infrastructure Grants for Quality Improvement (SAMHSA)</b>	The Connecticut Department of Mental Health & Addiction Services (DMHAS) is the recipient of Federal SAMHSA grants. Through past grants, DMHAS has strong working relationships with other State agencies, and will consistently evaluate opportunities to integrate with the HIE.
<b>State Medicaid/CHIP Programs</b>	The Department of Social Services is the provider for State Medicaid and CHIPS programs. DSS has been an active participant in the planning of the HITE-CT and is including all programs in its purview in the planning for the HIE.
<b>Indian Health Service (IHS) and tribal activity</b>	The State has working relationships with the two Indian tribal nations in Connecticut. As part of the interaction with the nations, the HITE-CT will work with the nations to enable information exchange with the tribal care providers.

### 2.3.3 Regional Extension Centers

The goal of eHealthConnecticut's Health Information Technology Regional Extension Center (HITREC) is to help the state's providers select, implement, and achieve meaningful use of EHR systems. This includes connecting them to a statewide HIE to enable sharing of patient data. The commitment is to help a minimum of 2,500 of the state's 8,000 practicing physicians during the next four years as part of the overall state strategy.

### **2.3.4 Broadband Access**

Connecticut is a relatively compact State geographically with access to broadband in an estimated 95% of the geographical area. There are, however, some municipalities in the northeast and northwest corners of the states that have limited access to high speed Internet connectivity. The Connecticut Department of Utility Control (DPUC) is currently engaged in a comprehensive mapping of broadband connectivity for Connecticut as part of an ARRA funded program. Both HITE-CT and DSS planning efforts will coordinate with both the DPUC and DOIT to extend the Connecticut Education Network to include health care providers, as appropriate.

### **2.3.5 Community Health Centers**

As Connecticut FQHCs achieve “Meaningful Use” requirements over the next months, they will be fully prepared to participate in the State HIE Program as it becomes activated. Community Health Center Association of Connecticut (CHCACT) has already reached out to the State, to initiate discussions on how the FQHCs may leverage technology to exchange immunization data as well as the direct submission of syndromic surveillance reporting from the EHR system to the State system. These initiatives are vital to improving public health in Connecticut through the leveraging of EHR technology.

## **2.4 Governance**

The vision, strategic goals and principles described in Section 2.1 will guide the governance for the HITE-CT. Governance for the HITE-CT must be highly transparent and maintain high standards of accountability to ensure that the full network of stakeholders and participants are able to build the vital consensus and trust necessary for this kind of information sharing enterprise. DPH is moving forward with creating a governance framework that will support the development and facilitation of collaboration among the initiative’s stakeholders, ensure compliance with legal and policy requirements and provide for the appropriate degree of accountability to the residents of Connecticut.

There is already demonstrated support for the HITE-CT concept and vision across a variety of stakeholders in Connecticut, including the major medical provider representative organizations. Productive relationships have been developed among State of Connecticut agencies that operate in the Health IT arena. Considerable progress has been made in the collaborative development of the original State HIT Plan in 2009 and the establishment of the 2010 legislation in support of the current interim governance and the sustainable ongoing governance for the HITE-CT.

The governance structure will continuously work to maintain and enhance support for the HIE concept from within the Connecticut medical provider community, patient advocacy groups, and most importantly patients themselves.

The governance model for HITE-CT will also address collaborative relationships beyond Connecticut. This will involve establishing the mechanisms necessary to ensure effective coordination with the Nationwide Health Information Network (NHIN). It will also include defining and supporting HIE collaboration across state lines, particularly in areas with shared populations and health care markets in Rhode Island, Massachusetts and New York.

Interstate collaboration is critical to the success of Connecticut’s HIE. Connecticut has initiated communication with a number of neighboring states through team conference calls, ONC regional and national grantee meetings, CMS and ONC calls and regular participation in the New England States Consortium Systems Organization’s (NESCSO) Health Information

Exchange Collaborative. Connecticut continues to seek new ways to work collaboratively across state lines.

Connecticut's introduction last summer to NESCSO's HIE collaborative has proven to be a particularly strong area for interstate collaboration with Maine, Massachusetts, New Hampshire, the New York ehealth Collaborative, Rhode Island and Vermont.

The purpose of this project is to provide a forum for information exchange on health Information technology (HIT) and health information exchange (HIE) projects in New England. Project members are invited to share status updates as well as any documents that will assist the New England states as they develop HIE/HIT initiatives. Monthly phone calls are facilitated by NESCSO and several collaborative projects are under discussion. One of the projects is the development of a regional Master Provider Index and the federal HIT Policy Committee work on provider directories is being monitored. Another project is the identification of core architecture components states are planning to use. Both projects are in the early stages and no timeframe has been established.

## **2.4.1 Current State Assessment**

Starting in 2008, the State of Connecticut established a team representative of health care stakeholders and led by the Department of Public Health to address Connecticut's strategy for HIT. The result of this was the Connecticut State Health Information Technology Plan published in June 2009. This Plan articulated Connecticut's need for a statewide HIE and recommended, among other things, the formation of the CT State RHIO to include ... "a diverse governing body representative of its key constituencies"<sup>18</sup> to be responsible for implementing the other recommendations of the Plan.

Subsequent legislation assigned the Department of Public Health as the lead health information exchange organization for the State with responsibility for the creation of ... "an integrated state-wide electronic health information infrastructure for the sharing of electronic health information among health care facilities, health care professionals, public and private payers and patients"<sup>19</sup>.

### **2.4.1.1 Interim Governance**

Initial legislation established the current interim governance structure, the HITEAC, which includes wide stakeholder representation with the purpose of advising DPH in HIE activities. Members and their appointing authorities are as follows:

- The Lieutenant Governor
- (a) A representative of a medical research organization, (b) an insurer or health plan representative, and (c) an attorney with experience in privacy, health data security, or patient rights, each appointed by the governor
- (a) A person with experience with a private sector health information exchange or HIT entity and (b) a person with expertise in public health, each appointed by the Senate President pro tempore
- (a) A representative of hospitals, an integrated delivery network, or a hospital association and (b) one person with expertise with federally qualified health centers, each appointed by the House speaker
- A primary care physician whose practice uses electronic health records, appointed by the Senate majority leader

- A consumer or consumer advocate, appointed by the House majority leader
- A person with experience as a pharmacist or other health care provider that uses electronic health information exchange, appointed by the Senate minority leader; and
- A large employer or business group representative, appointed by the House minority leader.
- The Commissioners of Public Health, Social Services, Consumer Protection, and Health Care Access, the Chief Information Officer, the Office of Policy and Management Secretary, and the Health Care Advocate, or their designees, are ex-officio, non-voting Committee members.

Since its inception in October 2009, the HITEAC has been meeting in public sessions monthly. In December 2009, it formed several subcommittees to increase stakeholder participation and buy-in and increase the experience and expertise available to the Committee on the many subjects the Committee has under consideration.

In the short term, HITEAC subcommittees were responsible for making recommendations to the full Advisory Committee with respect to development of the HIE Strategic and Operational Plans.

#### **2.4.1.1.1 Finance Subcommittee**

The Finance Subcommittee is responsible for making recommendations to the HITEAC Advisory Committee regarding the identification and management of financial resources necessary to fund the health information exchange. This domain includes public and private financing for building HIE capacity and sustainability. This also includes, but is not limited to, pricing strategies, market research, public and private financing strategies, financial reporting, business planning, audits and controls.

As part of the short term strategic and operational planning processes, the Finance Subcommittee makes recommendations addressing the following objectives:

- Developing the capability to effectively manage funding necessary to implement the State Strategic Plan. This capability should include establishing financial policies and implementing procedures to monitor spending and provide appropriate financial controls
- Developing a path to sustainability, including a business plan with feasible public/private financing mechanisms for ongoing information exchange among health care providers and with those offering services for patient engagement and information access

#### **2.4.1.1.2 Technical Infrastructure Subcommittee**

The Technical Infrastructure Subcommittee is responsible for making recommendations to the Committee on the statewide architecture, hardware, software, application, network configuration and other technological aspects that physically enable the technical services for HIE in a secure and appropriate manner. All recommendations to the Committee need to address the long term (> 2 years) and the short term (6 months–2 years) goals to support the planning and implementing phases of the overall project. Short term goals will identify the local and State level requirements that can be achievable by the end of year 2 and long term goals that will address interoperability with the NHIN.

Specifically, this Subcommittee must address, but is not limited to addressing, the following objectives:

- Establish mechanisms for ensuring and establishing interoperability with the NHIN

- Ensure adherence to HHS adopted standards and certifications
- Define and develop the technical architecture approach to support statewide HIE

#### **2.4.1.1.3 Business and Technical Operations Subcommittee**

To achieve successful interoperability at the local, state and national levels, statewide business practices necessary to support the delivery of HIE services must be developed. The Business and Technical Operations Subcommittee is responsible for making recommendations to the Committee regarding how the project will be managed, evaluated and reported. This domain also includes activities such as procurement, requirements, identification, process design, functionality development, help desk establishment, system maintenance, change control and others as deemed necessary to fulfill its objectives. This Subcommittee will recommend a process that prioritizes all necessary HIE services and proposes how the State will leverage existing regional and state efforts.

For example, the Subcommittee must review and describe the planning and implementation phases necessary to recommend to the Committee on topics including:

- Determine the current state of readiness and how it will build capacity
- Map a critical path to develop HIE services for all health care providers throughout the State
- Define and describe the incremental progress of each domain and how it will be evaluated and reported on
- Identify the potential barriers and describe how resolution/agreement will occur

Specifically, the Subcommittee must address, but is not limited to addressing, the following objectives:

- Support meaningful use EHR adoption in collaboration with the Regional Extension Center
- Leverage existing statewide and regional capacity
- Leverage statewide services and directories
- Establish the HIE infrastructure and interoperability with the NHIN

#### **2.4.1.1.4 Executive/Governance Subcommittee**

The Executive/Governance Subcommittee consists of the chairs of each of the other subcommittees, as well as the Chair of the HITEAC. The subcommittee recommends ways to will build a comprehensive governance model to address:

- Advocating for HITE-CT and encouraging public participation
- Encouraging stakeholder participation in HITE-CT including individuals, enterprises and stakeholder representative bodies such as associations
- Promoting health information technology adoption across all health care providers, payers, and patients to provide the structured health information that will be the life blood of HITE-CT
- Strategic planning to ensure HITE-CT is at the forefront of Health IT in Connecticut and Nationwide

- Managing the HIE utilities by overseeing technical operations to ensure availability, adaptability, and usability and the organization required to support that
- Conducting business operations including financing and accountability mechanisms
- Providing accountability and oversight of the exchange of health information to ensure legal and policy requirements are satisfied
- Fostering nationwide and interstate collaboration on health information exchange and related standards development

#### **2.4.1.1.5 Legal/Policy Subcommittee**

The Legal/Policy Subcommittee is responsible for making recommendations to address privacy and security issues related to health information exchange within the State, and between states. Such recommendations should address the need to:

- Analyze and/or modify State laws
- Develop policies and procedures
- Develop trust agreements such as data sharing, data use and reciprocal support agreements necessary to enable information exchange

The recommendations should also address how non-compliance with Federal and/or State law or policy applicable to HIE will be addressed.

This Subcommittee is also charged with making recommendations regarding how the statewide HIE will comply with all applicable Federal and State legal and policy requirements, including how policy requirements will be developed and implemented to enable appropriate and secure HIE statewide as well as on an interstate basis.

#### **2.4.1.1.6 Special Populations Subcommittee**

This Subcommittee is responsible for making recommendations regarding how to involve community based service providers in the development of the statewide HIE. The Subcommittee will also make recommendations specific to the following:

- Medically underserved populations
- Newborns, children and youth, including those in foster care
- Elderly
- Persons with disabilities
- Limited English Proficiency persons
- Persons with mental and substance abuse disorders
- Persons in long term care

### **2.4.2 Role of the Governance Entity HITE-CT**

The HITE-CT governance structure will balance competing objectives and allow for the appropriate exchange of health information for State agencies and health care providers. Governance for achieving the HITE-CT vision will effectively support planning and startup, HITE-CT development and implementation and the oversight and governance of HITE-CT ongoing management and operations. Three critical principles drive the governance requirements for the HITE-CT: 1) clarity and transparency of the decision making processes and

responsibilities; 2) inclusiveness of stakeholder participation from the onset, and 3) strong interdependency between the governance of the HITE-CT and its financing mechanisms.

#### **2.4.2.1.1 HITE-CT Board of Directors**

In June 2010, Governor M. Jodi Rell signed legislation creating the HITE-CT as a quasi-public agency that will take over responsibility for the implementation and management of the statewide HIE from DPH in January 2011. The HITE-CT has a governing Board of a similar structure to the HITEAC but with some expansion of stakeholder representation. The new Board includes a second consumer or consumer advocate, and a physician from a small practice. It also provides full voting Board membership to representatives from the Connecticut Departments of Public Health, Social Services, Consumer Protection and Information Technology, and eliminates membership from the Office of Health Care Access, as this office has been subsumed under the DPH.

The names and affiliations of the Board of Directors are included in Appendix 4.3. The Board held its inaugural meeting on October 18, 2010 to adopt Bylaws and establish five standing Committees in association with the ONC five domains (Appendix 4.4). The Board established a monthly meeting schedule and met again on November 15, 2010 to review transition efforts of DPH to the HITE-CT and finalize Board Resolutions proposed at the inaugural meeting. The Board is working with DPH to form the new HITE-CT with appropriate business operations.

The Commissioner of Public Health serves as the chair of the Board and has designated a Search Committee to develop meaningful experience criteria and compensation package for the Chief Executive Officer to be hired and managed by the Board of Directors. The HITE-CT CEO will be responsible for building an organization and administering the agency's programs and activities in accordance with policies and objectives established by the Board including:

- Implementation and periodic revisions of the HITE Plan, including the implementation of an integrated statewide electronic health information infrastructure for the sharing of electronic health information among health care facilities, health care professionals, public and private payers, State and federal agencies and patients;
- Appropriate protocols for health information exchange;
- Electronic data standards to facilitate the development of a statewide integrated electronic health information system for health care providers and institutions.

HITE-CT has the ability to create subsidiaries which will also be quasi-public agencies with their own boards and at least 50% representation from the HITE-CT Board.

#### **2.4.2.1.2 Governance Model**

HITE-CT will build a comprehensive governance model that expands upon the legislative definition and description of the HITE-CT Board roles and responsibilities. This model will categorize HITE-CT decision making into a number of "decision domains." The model will address specific decision makers by role (e.g., HITE-CT CEO) and decision making groups (e.g., HITE-CT Board and Committees) and specify the roles and responsibilities of the decision makers in each domain.

The governance model for HITE-CT addresses all possible areas of decision making including:

- Advocating for HITE-CT and encouraging public participation;
- Encouraging Stakeholder participation in HITE-CT;

- Promoting health technology adoption across all health care providers, payers, and patients to provide the structured health information;
- Strategic planning;
- Managing the HIE utility by overseeing technical operations to ensure availability, adaptability, and usability, and organizational support;
- Conducting business operations, including financing and accountability mechanisms;
- Providing accountability and oversight of the exchange of health information to ensure legal and policy requirements are satisfied; and
- Fostering nationwide and interstate collaboration on health information exchange and related standards development.

### **2.4.3 Accountability and Transparency**

The governance of HITE-CT will operate in a highly open, accountable and transparent fashion to maintain the high levels of trust and consensus necessary to create and maintain HITE-CT. HITE-CT will be accountable to all stakeholders, including participants, supporters (including funders), and the residents of Connecticut. The HITE-CT will place significant effort to meet the ONC, CMS, and CDC requirements by identifying and building consensus on the appropriate measures needed across all stakeholders. This will include developing measures that align with HITE-CT strategic objectives, and providing a clear means for the evaluation of the HITE-CT that will allow for the ongoing updating of strategic and operational plans. An effective accountability approach will require the adoption of business intelligence capabilities within the technical solution for HITE-CT.

In addition a process has been put in place by contracting with the University of Connecticut Health Center to conduct continuous and structured evaluation of the HITE-CT activities and governance model to ensure effectiveness of decision making and accountability.

### **2.4.4 State Government Leadership Changes**

In November 2010, Connecticut elected a new Governor Dannel P. Malloy and Lieutenant Governor Nancy S. Wyman to take office on January 5, 2011. The Connecticut General Statute naming the HITE-CT Board of Directors designates the sitting Lt. Governor, or her designee, as a full voting member of the Board. Transition from the current administration to that of Governor-elect Malloy has begun, but there remains a level of uncertainty as a number of key leadership positions in Connecticut State government could change during a critical time in the development and transition of HITE-CT's governance structures and processes.

In order to mitigate problems during these dual transitions, it is important to communicate effectively with the new administration about the state's HIE efforts. To this end, DPH, DSS, eHealthConnecticut and Capital Community College have worked together to complete a briefing paper for review and consideration by the governor's transition team. The paper includes recommendations to support a collaborative HIE development and implementation process, post the State HIT Coordinator at the Office of the Governor, and support the finance model to sustain the Connecticut HIE.

The communications process has begun to ensure newly elected and appointed leadership are fully briefed in a timely manner. Part of this communications process includes the development of a State Leadership Awareness, Education and Participation Plan. The process will include:

- Understanding of stakeholder groups, viewpoints and needs of newly elected and appointed leadership;
- Tailoring communication around the HIE value proposition to each stakeholder group;
- Developing and sharing case studies that demonstrate the value of the HIE; and
- Coordinating with the Strategic and Operational planning process to ensure strong, compelling and fully aligned messages are presented.

## 2.4.5 Governance Summary

### ■ HITE-CT Legislation

- An interim governance structure has been well established under the leadership of DPH and a transition is planned to occur between the first HITE-CT board meeting in October and hand-over of responsibilities from DPH to HITE-CT in the beginning of January 2011.

### ■ Roles of Governance

- The founding principles of HITE-CT include ensuring the clarity of decision making processes, inclusiveness, and that those organizations that will support HITE-CT are provided a voice in governing HITE-CT.

### ■ Quasi-public Agency

- The long-term governance of health information exchange in Connecticut will be completed by a quasi-public agency, the HITE-CT, that will reflect the interests of all stakeholders and ensure the efficient and effective management of the HIE.

### ■ Accountability and Transparency

- HITE-CT must be governed and operated in a clear and accountable manner to ensure stakeholder support and that the promise of health information exchange is realized in Connecticut. This will mean meeting, and going above and beyond, all State and Federal reporting requirements. A process has been put in place by contracting with the University of Connecticut Health Center to conduct continuous and structured evaluation of the HITE-CT activities and governance model to ensure effectiveness of decision making and accountability.

## 2.5 Finance

Connecticut is focused on the core issue of securing and maintaining adequate long term financial sustainability, as it presents a key risk for the development of the HIE. The ONC HIE grant goes a long way to help set the foundation necessary to get HITE-CT initiative moving forward, as it will provide \$7.29M plus approximately \$1.16M in matching funds or in-kind services for a total of \$8.45M over four years. Ensuring that the required matching funding for the cooperative agreement is available will be a key priority for HITE-CT, along with establishing an effective cost allocation methodology, where necessary, to meet Federal requirements.

### 2.5.1 Current State Assessment

Connecticut has begun to address the issue of financial sustainability of the HIE. The plan to address this issue has the following key components:

- To address the need for long term sustainability, Connecticut studied other state's approaches to providing ongoing sustainable funding for health information and constructed a number of scenarios
- Connecticut has developed a proposed, multi-phase approach to funding. Each phase is aligned to the products and services being provided by the HIE, the value being provided, the extent of participation and the overall level of maturity
- The proposed model will seek income from various stakeholders in the form of assessed fees, subscription fees and transaction fees (based on services provided) to support its financial needs and the growth of its HIE capabilities
- It will be necessary to establish clear financial controls and reporting so as to ensure that the financing of HITE-CT is economical and sustainable over time
- Connecticut believes that the financial sustainability plan must be coordinated with the deployment of the HIE functionality that in turn is connected directly to the value proposition (e.g., providing secure transmission of clinical results will be a cost saving for hospitals, providers and laboratories)

### 2.5.2 Value Proposition of HITE-CT

There is a broad agreement among HITE-CT stakeholders that there needs to be a strong and compelling value proposition for the HIE that sets realistic expectations and that is articulated in both qualitative and quantitative benefits. This value proposition must demonstrate economic and health outcome specific benefits, include performance indicators for reporting requirements and more importantly, enable tailoring of communication around the value of the HIE to each stakeholder group.

Table 2 provides an initial view of the future users of the HIE with examples of corresponding benefits they can expect to obtain from the HIE. This table will be revised and maintained as new stakeholders are identified and new services created.

**Table 2. Initial Mapping of Users and Value Proposition**

Connecticut HIE Stakeholder/User	Examples of Value/Benefit
<ul style="list-style-type: none"> <li>■ Patient or Caregiver</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved quality in care delivery and health outcomes, including:                             <ul style="list-style-type: none"> <li>□ Fewer visits through better disease management</li> <li>□ Shortened length of stays</li> <li>□ Fewer adverse drug events</li> <li>□ Reduction of duplicative and unnecessary tests, visits, referrals</li> </ul> </li> <li>■ Reduced health care expense</li> <li>■ Support devices in patients' homes</li> <li>■ Improved health care services to rural and underserved populations</li> </ul>
<ul style="list-style-type: none"> <li>■ Nurses</li> <li>■ Primary Care Physicians</li> <li>■ Specialty Care Physicians (behavioral, mental health, therapists, etc.)</li> <li>■ Pharmacists</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved quality of patient care through:                             <ul style="list-style-type: none"> <li>□ Improved transition of care</li> <li>□ Medical errors avoided</li> <li>□ Reduction of unnecessary clinical tests</li> <li>□ Remote monitoring and telehealth</li> <li>□ Improved communications with other providers</li> </ul> </li> <li>■ Lives saved (mortality reduction)</li> <li>■ Improved reimbursement rates</li> <li>■ Improved customer service/patient loyalty</li> <li>■ Hospitalization avoided</li> <li>■ Productivity and efficiency gains</li> </ul>
<ul style="list-style-type: none"> <li>■ Hospitals and Health Systems</li> <li>■ Community Health Centers</li> <li>■ Clinics</li> <li>■ Ambulatory Surgery</li> <li>■ Skilled Nursing Facilities</li> <li>■ Long-Term Care Facilities</li> <li>■ Department of Correction Provision of Health Care</li> <li>■ Pharmacies</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved quality of patient care through:                             <ul style="list-style-type: none"> <li>□ Improved transition of care</li> <li>□ Medical errors avoided</li> <li>□ Reduction of unnecessary clinical tests</li> <li>□ Remote monitoring and telehealth</li> <li>□ Improved communications with other providers</li> </ul> </li> <li>■ Improved reimbursement rates</li> <li>■ Improved customer service/patient loyalty                             <ul style="list-style-type: none"> <li>□ Improved competitive market position</li> <li>□ Lives saved (mortality reduction)</li> <li>□ Hospitalization Avoided</li> <li>□ Productivity and efficiency gains</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>■ Independent Laboratories</li> <li>■ Independent Radiology Centers</li> <li>■ Independent Pharmacies</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved quality of patient care</li> <li>■ Improved customer service/patient loyalty</li> <li>■ Improved competitive market position</li> </ul>
<ul style="list-style-type: none"> <li>■ Employer/Plan Administrator</li> <li>■ Health Plans</li> <li>■ Pharmacy Benefits Managers (PBMs)</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved regional health quality</li> <li>■ Reduced expense in delivering care</li> <li>■ Improve quality in care delivery</li> </ul>

Connecticut HIE Stakeholder/User	Examples of Value/Benefit
<ul style="list-style-type: none"> <li>■ CMS/Medicare</li> <li>■ State Medicaid</li> <li>■ State Agencies (Department of Public Health, DMHAS, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>■ Support achieving meaningful use measures</li> <li>■ Improved public health services</li> <li>■ Improved regional health quality</li> <li>■ Reduced expense in delivering care</li> <li>■ Improved quality in care delivery</li> <li>■ Availability of data for various purposes</li> <li>■ Compliance achieved with productivity and efficiency gains</li> </ul>
<ul style="list-style-type: none"> <li>■ Federal Agencies and Care Providers (Department of Veterans Affairs, Department of Defense, Indian Health Services, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>■ Improved regional health quality</li> <li>■ Reduced expense in delivering care</li> <li>■ Improved quality in care delivery</li> <li>■ Availability of data for various purposes</li> </ul>

### 2.5.3 Short Term Startup Funding for the HITE-CT

Connecticut has developed a proposed multi-phased approach to funding. The first phase consists of the startup funding required to implement limited HIE functionality. The State plans to leverage the ARRA funding as the foundation and funds from fees levied on potential for profit and non-profit HIE users or contributors. In addition, HITE-CT will make a priority to identify the required matching funding for the cooperative agreement is available along with other short term funding sources as required.

### 2.5.4 Long Term Sustainability for HITE-CT

Connecticut's HITEAC has agreed on a key set of principles for creating a clear plan for sustainability as the State's initial funding source will eventually become depleted. These principles require the HIE to: 1) offer services that the future HIE users will want, 2) at a price they will be able to bear, 3) in a way that revenue exceeds expenses to further invest in ongoing value creation initiatives, and 4) deliver services at a level that health care organizations and other stakeholders have come to expect from suppliers. In addition, once funding has been invested in the development of the HIE infrastructure, these assets must be leveraged and reused to deliver as many value-added services as necessary to achieve sustainability.

Connecticut's multiphase approach to funding was arrived at after evaluation of different long term funding options for HITE-CT operations that may require various combinations of legislative mandates and voluntary participation by stakeholders. These potential revenue sources include continuation of direct funding from sponsoring government and/or charges, fees, and payments based on the actual utilization of HITE-CT by participants. The funding structure has been developed to encourage, not discourage, participation by as many health providers and organizations as possible. The funding structure needs to be adaptable to increases in HITE-CT network participants and the maturity increases of the HITE-CT network.

#### 2.5.4.1 Working Assumptions

A number of key working assumptions were made when developing the proposed multiphase approach. These are listed below:

- The State will require all Providers of Care that participate in the HIE to be able to submit PHI to the HIE or retrieve PHI from the HIE

- Technically challenged providers unable to electronically provide or receive PHI should be able to obtain technical assistance from the Regional Extension Center
- Incentives to participate include a Phase 1 mandatory universal assessment fee<sup>20</sup> and ties to meaningful use
- Legislation must be enacted to establish the universal assessment fee
- Providers of Care include Payers
- Patient consent will be captured, stored and transmitted to the HIE by the provider
  - The HIE will require a Uniform State policy on restrictions within the consent policy
  - The HIE will also need additional administrative capacity within HIE to handle restrictions
- There will be a “break the glass” capability
- PHR capabilities should be offered through commercial products
  - The PHR capability has the potential to generate a significant revenue stream for providers of care
  - This capability will require administrative oversight
  - Consent will be handled at the patient level
  - Oversight will be required for public protections
  - Education will be critical to successful utilization and roll out of PHRs
- All information that flows through the Connecticut HIE needs to identify sources
  - Updates can only be made at the source
  - Need administrative process to update information if source is no longer available
- Value generated in Year 1 will be insufficient to achieve sustainability of health information exchange
- Proposed funding model will mature over time in concert with the maturing value of the exchange

### 2.5.4.2 Multi-Phased Funding Model

The details of the current proposed multi-phased funding model are included in Table 3.

**Table 3. Multi Phased Funding Model**

Phase	Funding Overview
<p><b>Phase 1: Public Health Reporting</b></p> <ul style="list-style-type: none"> <li>■ Exchange based on the development of All Providers of Care Database and a Records Locator Service—all constituents submit identified data directly to DPH</li> <li>■ Value Proposition: Improved monitoring of population based health data, improved mandatory reporting, enhanced public health research</li> </ul>	<ul style="list-style-type: none"> <li>■ Federal ARRA and State Funding, (including State match)</li> <li>■ Flat and/or %- based fees from all Connecticut Health Plans (Claims %), Hospitals (Bed or Discharge), Physicians (Flat Licensure Fee), CHCs (% claims), Pharmacies, Labs, LTC facilities and other potential for profit and non-profit HIE users or contributors</li> <li>■ No fee to consumers or patients</li> <li>■ Legislation required mandating assessments</li> <li>■ Assessment to sunset at TBD date</li> <li>■ The HITEAC Finance subcommittee will continue to explore the possibility of foundation/grant funding to reduce the need for Assessment funds</li> </ul>
<p><b>Phase 2a: Continuity of care documents/records (CCD/CCR)</b></p> <ul style="list-style-type: none"> <li>■ Exchange based on further development of HIE, including Master Patient Index and Master Provider Index, Record Locator and Security.</li> <li>■ Value Proposition: Clinical user access to current summary patient data, follows patient through health care delivery system, improved communication between care providers, continued enhancement of public health reporting</li> </ul>	<ul style="list-style-type: none"> <li>■ Hybrid Funding Model <ul style="list-style-type: none"> <li>□ Plan to sunset the assessment fees at TBD date during Phase 2</li> <li>□ Transition to a Subscription Model</li> </ul> </li> <li>■ Potential users have incentive to connect to HIE since they already pay to support it</li> <li>■ Requires more robust HIE</li> </ul>
<p><b>Phase 2b: Quality Reporting</b></p> <ul style="list-style-type: none"> <li>■ Exchange approach and data topology of the HIE depends on the granularity of Quality Reporting required</li> <li>■ Value Proposition: Improved patient outcome at the practice or patient level. This might enable pay for performance, which, when implemented, might result in further improved outcomes</li> </ul>	<ul style="list-style-type: none"> <li>■ As per Phase 2a—Continue Hybrid funding mechanisms</li> <li>■ Expect to complete the transition to a Subscription Model</li> </ul>
<p><b>Phase 3: Personal Health Records (PHR) Enabled</b></p> <ul style="list-style-type: none"> <li>■ Value Proposition: Improved patient outcome at the patient level, patient centered health care. Significant Potential Revenue Stream for Providers of Care</li> </ul>	<ul style="list-style-type: none"> <li>■ Continuation of the Subscription Model</li> <li>■ Add payment for services where possible (e.g., may be possible to charge PHR vendors transaction fees) <ul style="list-style-type: none"> <li>□ PHRs to be generated through commercial products</li> <li>□ Consent to be handled at the patient level, personal choice of PHR provider</li> <li>□ Oversight required to protect public</li> <li>□ Education required</li> </ul> </li> </ul>

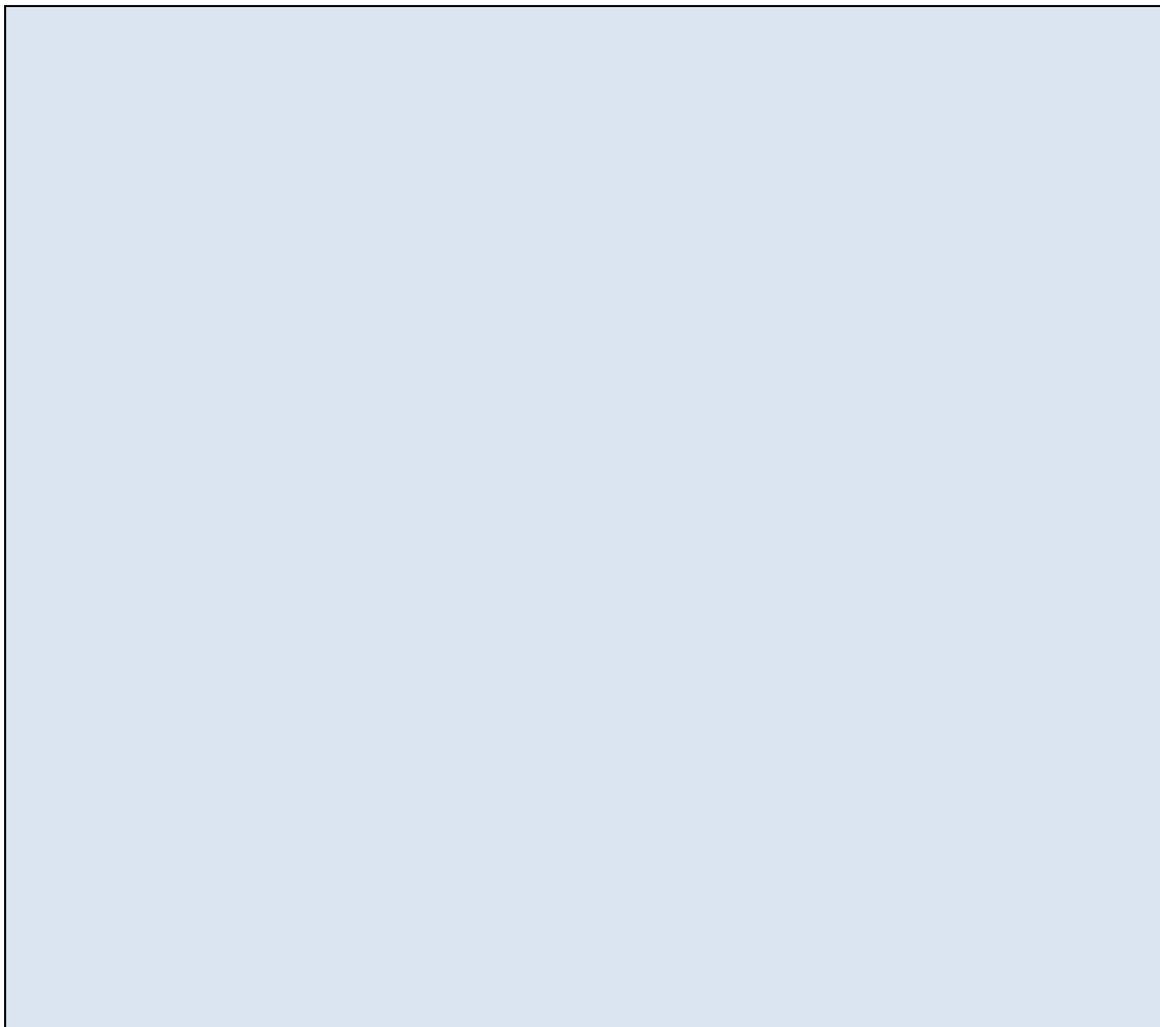
Before HITE-CT moves forward on this approach, the Finance Subcommittee will work collaboratively to develop a four year financial sustainability model based on estimates of the level implementation of services and ongoing support.

### **2.5.5 Financial Management and Reporting**

Connecticut will establish and maintain the necessary financial accounting of the HIE project, the appropriate organizational reporting structure and ensure that the required audit and control mechanisms are established and sustained as ongoing operations of HITE-CT. HITE-CT will ensure that mechanisms are in place and maintained to:

- Comply with audit requirements of the Office of Management and Budget (OMB)
- Submit annual Financial Status Reports
- Submit semi-annual progress reports to ONC
- Submit quarterly reports as specified in section 1512(c) of the Recovery Act, including detailed information on any subcontracts or subgrants awarded

### **2.5.6 Finance Summary**



## 2.6 Technical Infrastructure

HITE-CT is envisioned as providing the connecting network for the exchange of health information across Connecticut, connectivity with other states and with the NHIN platform. The infrastructure will be built on a secure, service-oriented architecture that enables health care data transfer using recognized Federal and State health information technology standards. The technical design will enable connection to regional HIEs and integrated health systems to leverage existing investments in their HIE efforts.

Connecticut's approach to defining and establishing the technical infrastructure for HITE-CT is focusing on key areas:

- Defining at a high level the complete set of products, capabilities and services that the HITE-CT infrastructure will provide in support of the overall vision
- Establishing the appropriate authentication, credentials and consent management mechanisms to ensure the protection of consumer privacy
- Augmenting the understanding of Connecticut's HIE readiness, including HIT adoption across health care providers
- Ensuring HITE-CT meets the security, integrity, availability and reliability requirements
- Considering the integration with existing and planned State agency infrastructure, such as Maven®, Public Health Information Network (PHIN) and Medicaid Management Information System (MMIS)
- Investigating the interstate linkages that will be necessary for the effective development of the HIE to connect across state lines
- Leveraging existing patient and provider directories to avoid redundant work and costs

### 2.6.1 Current State Assessment

Planning for a Connecticut statewide HIE began in 2008 and resulted in the publication of the State HIT Plan in June 2009. During the development of the State HIT Plan, Connecticut achieved broad agreement that true transformation of the Connecticut health care system will depend on the conversion of a traditional, disparate, paper based system into the Nationwide Health Information Network based on the electronic exchange of data and compatible with national data standards in order to allow for interstate interoperability, serving the needs of patients, providers and health care decision makers.

Connecticut is committed to build upon the State HIT Plan by leveraging progress made to date in developing multiple local HIE and HIE-like systems, provider information surveys and various registries. The State realizes, however, that much work still needs to be done to gain a better understanding of the level of EHR adoption in physicians' practices—especially smaller practices (more than 60% of practices have less than five physicians)—to develop a collaborative process with strong technical representation from stakeholders to achieve a consensus based, practical HIE architecture and to define the resulting infrastructure requirements.

### 2.6.2 EHR Adoption

Increasing the use of EHRs by primary care practitioners, hospitals and other health care providers is a critical ingredient for achieving successful statewide exchange of health care information, including supporting the meaningful use requirements for eligible providers.

As highlighted in the Plan's environmental scan and gap assessment, there is a variety of maturity levels among health care providers with respect to HIT and EHR readiness and adoption. Therefore, it is important to conduct a robust readiness assessment that will inform a transition plan aligned with EHR adoption. This will support the change management necessary for successful HIT adoption and HIE utilization in Connecticut.

To improve the current level of understanding of Connecticut's health care provider's HIT adoption level and to supplement the data currently available, HITE-CT will work with the DSS SMHP project to leverage any additional HIT adoption knowledge uncovered.

Connecticut is a relatively compact state geographically, with an estimated 95% of the geographical area having access to Broadband. To support and promote HIE adoption across the state, the REC will assess individual providers' levels of EHR use, and readiness to participate in an HIE. Because EHR adoption is a fundamental building block for achieving the exchange of health information, HITE-CT is committed to working closely with the REC to define the mechanisms needed to encourage and support the adoption of certified systems in Connecticut. In addition, HITE-CT will work in partnership with DSS to support eligible providers' adoption of EHRs and achieving meaningful use requirements through the use of the statewide HIE.

### **2.6.3 Interoperability**

HITE-CT will adopt nationally recognized standards and protocols to enable the interoperability and connectivity with existing investments of current HIEs (e.g., Danbury Hospital's HealthLink), envisioned future regional and local community health information exchanges, health care providers, and integrated health delivery systems and hospitals. HITE-CT will connect to, accommodate, and/or assist the operations of these participants through an array of services.

HITE-CT will be able to provide essential services to physicians and patients, including, in the short term:

- Clinical summary (e.g., discharge summary) exchange for care coordination across health care settings
- Clinical data sharing between disparate systems containing patient data via those connected to the Statewide HIE, other local HIEs, other HIEs connected to the NHIN and systems connected to NHIN using NHIN Direct standards
- EHR interfacing with the ability to provide data to Personal Health Records for patient engagement
- Electronic public health and quality reporting
- HITE-CT will also provide focused outreach and support for providers to use connectivity and EHR-related services in the following areas in support of Meaningful Use objectives:
  - Subscription and service for e-Prescribing
  - Direct connection to auxiliary service providers to obtain and integrate structured data from Lab results

Key public health information systems can benefit from HITE-CT's ability to access disparate information sources such as:

- MAVEN® (a package being used to collect an expanding set of disease related screening and surveillance) which gets data via HL7 messages using the PHIN messaging infrastructure including Orion Rhapsody integration engine and the CDC NEDSS brokering tool

- Other CDC standardized and legacy registry systems
- Electronic Lab Reporting (ELR)
- Lab Information Management Systems (LIMS)
- Other DPH systems including: HIV/AIDS, EMS/Trauma and Cancer incidence monitoring systems, Newborn Hearing and Screening, Vital Records Birth/Deaths systems,

HITE-CT will provide the opportunity to streamline these data collection and data sharing efforts and make the approved and appropriate utilization of health information more efficient and effective. The statewide HIE should make it easier for providers to analyze health care indicators on an individual patient level and a statewide level to support the continuous improvement of health care practices and outcomes in Connecticut, and provide a streamlined and consistent source of data for UCONN's Connecticut Health Information Network health research data capability and other health research facilities.

There are also a number of future interoperability opportunities for State agency systems:

- Connecticut's e-License system (which includes all State medical licenses) to be a key source of HITE-CT data
- The Connecticut Prescription Monitoring and Reporting System for key prescription information
- Medicaid Eligibility and Claims Systems (EMS and MMIS)
- Medicaid e-Prescribing
- Medicaid Meaningful Use Incentives System
- State agency systems for Connecticut's various behavioral health programs

#### **2.6.4 Standards Adoption Process**

HITE-CT will specify and adopt health care related interoperability and data interchange standards for use within Connecticut. This will facilitate consistent and appropriate use of HITE-CT services. HITE-CT will be responsible for ensuring these standards and related guidelines are widely disseminated and understood.

#### **2.6.5 HITE-CT Architecture Approach**

HITE-CT will be the State authority for defining a comprehensive enterprise architecture (including standards considerations) and document the full scope of required HITE-CT technology infrastructure and services. HITE-CT will be required to have the expertise and correct skill sets at the leadership level in order to ensure that the architecture is in alignment with the Connecticut Enterprise Architecture—Technology Architecture (CTEA-TA) Standards.

The architecture will permit the exchange of data between entities that house patient data and authorized health care providers in a manner that will accommodate users at various stages of technology adoption.

To achieve the vision for the statewide HIE architecture, HITE-CT will follow the principles listed below in addition to the Connecticut Department of Information Technology (DOIT) published "Conceptual Architecture Principles."

- **Open Process:** Establish an open and inclusive process for defining the statewide HIE architecture, identifying the needs of the community (patients, providers, payers, government, etc.) and clearly stating the value proposition of HITE-CT.

- **Minimum Redundancy:** Build a data sharing/exchange environment where redundancies are minimized and the:
  - Level of data collected will be patient/event focused
  - Data collection process will be organization focused
  - Data aggregation for analysis and reporting will be objective/metric focused.
- **Incentives:** Support eligible providers “meaningful use” of EHRs.
- **Service Oriented:** The target architecture should consist of a number of services that are compliant with industry standards for service-oriented architecture to facilitate reuse, adaptability and interoperability.
- **Standards:** Build upon Federal standards and implementation efforts, including the ONC HIT Standards Committee and those for the NHIN, and comply with emerging national interoperability standards from connectivity to semantic reconciliation.
- **Investment Protection:** Provide the ability to integrate with existing platforms and health information exchanges.
- **Independence:** Keep architecture skills separate from product and implementation vendors’ dependencies to maintain vendor and technology neutrality in the development of architecture.
- **Ease of Use:** The future Connecticut health systems infrastructure will meet user defined criteria for ease of learning, use, and support.
- **Real Time Integrated Enterprise:** The future Connecticut health systems infrastructure will allow providers, payers and the State to have current and up to the second information regarding all health care interactions.
- **Scalable and Extensible:** Provide incremental expansion of data exchange functionality over time on a base that is scalable to accommodate additional users and expanding capabilities to meet future business needs and Federal and State mandates.

Starting with the requirements and technical conceptual architecture developed as part of the State HIT Plan, HITE-CT will follow the Connecticut Enterprise Architecture-Technology Architecture (CTEA-TA) processes and develop a “Common Requirements Vision” or a similar process that will create an Enterprise Solution Architecture described from the following viewpoints:

- **Business Architecture**
  - Business Architecture represents the requirements, principles and models for the enterprise’s people, financials, processes and organizational structure.
  - The goal of describing Business Architecture is to ensure that changes and enhancements to business functions, processes, financials, people and organizational structure are fully optimized along with information and technology, in support of the business strategy.
- Information Architecture is that part of the architecture process that describes (through a set of requirements, principles and models) the current state, future state, and guidance necessary to flexibly share and exchange information assets to achieve effective enterprise change.
- Technology Architecture describes how technology components from multiple technology domains are deployed within technology patterns to provide the required technology services and that compliance to technology standards is upheld.

Systems that are built to change are more valuable than systems that are built to last, and, in reality, are the only ones that last. Service Oriented Architecture (SOA) is used to build systems that are intended to change. Connecticut has determined that the HITE-CT system requirements will only be properly satisfied by an SOA solution. Specifically, the proposed solution must adhere to the following five principles:

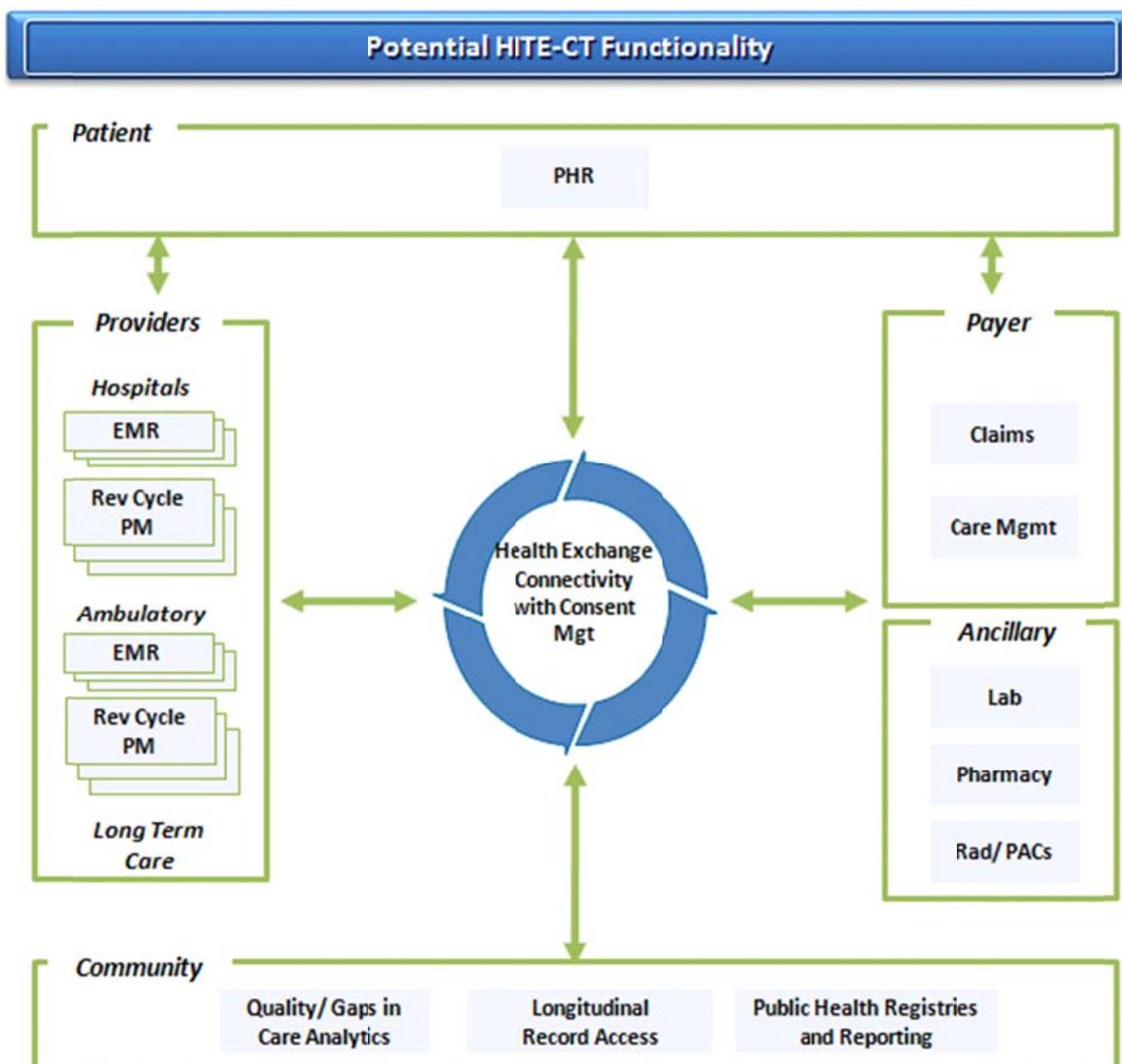
- **The system must be modular**—Each component is a service consumer, service provider or both. Modules will exist at a variety of levels of granularity e.g., at a business process level such as certification and benefits issuance to simplify alignment with key business processes and at lower levels such as data services for a single database table to enable reuse across the application and the whole architecture. As with business services, the capabilities to specialize, mix and match, and swap components are key benefits.
- **The modules must be distributable**—Each module must be able to run on disparate computers and communicate with each other by sending messages over a network at runtime. This will enable edge servers on providers’ and other HIE sites.
- **Module interfaces must be clearly defined and documented**—Software developers write or generate interface metadata that specifies an explicit contract so that another developer can find and use the service (this helps enable loose coupling).
- **Modules must be swappable**—A module that implements a service can be swapped out for another module that offers the same service and interface. This is an aspect of loose coupling and it enables incremental maintenance and enhancements and means that HITE-CT’s technology capabilities can be easily evolved over time.
- **Service provider modules must be shareable**—Modules are designed and deployed in a manner that enables them to be invoked successively by disparate service consumer modules engaged in somewhat diverse, although partially related, business activities.

The fundamental concepts of modularity, reuse of in-house or externally developed IT modules and services and ubiquitous connectivity through the Internet position HITE-CT to continuously adapt and evolve the HIE capability as the Connecticut health care needs of the diverse customer community evolves.

### 2.6.6 Products and Services Portfolio

HITE-CT will enable authorized users to view and exchange relevant patient data and information over a secure Internet-based connection. Ultimately this will become a "full service" HIE where information from different sources, such as physician offices, laboratories, pharmacies, hospitals, health systems, payers and other HIE systems, can be used regardless of source. Additionally, consumers of health care may also elect to connect their PHRs offered by various entities. The diagram below provides a high level view of HITE-CT's initial target functional capabilities.

**Figure 5. HITE CT Initial (First 3 Years) Target Functionality**



Connecticut plans phased deployments of the statewide HIE and considered the following drivers in establishing the phased plan for the first three years of the HITE-CT:

- **Meaningful use**—providing services aligned to the needs of Connecticut’s eligible providers in qualifying for Medicare and Medicaid meaningful use incentive payments;
- **Critical mass**—considering the potential level of HIE usage and resultant dependencies;
- **Customer variety**—balancing stakeholder capability differences and competing stakeholder needs; and
- **Existing investments**—leveraging what the hospitals provide locally.

The high level of the phased planning process made the following assumptions.

- The following services are well established and widely available outside of the statewide HIE and therefore not considered a useful focus for HITE-CT infrastructure capabilities in the immediate term, but will be considered in future phases:
  - E-Prescribing services
  - Health care plan eligibility and claims processing.
- EHR adoption by physicians and demand for HIE use will rise above 50% of physicians by 2015; HITE-CT will be poised to support an increased number of users even if this assumption is too conservative.
- In the short term, the HITE-CT will provide outreach and support for certified EHR adoption in general and, in particular, help providers make use of commercially available e-Prescribing services, connect directly to their main Lab service providers, and integrate their EHR systems with laboratory results provided electronically in compliance with related Connecticut standards.
- PHR services should be offered in the later releases when there is a critical mass of data to make available, the demand exists and the revenue to support development has been accrued during the previous releases.
- Services to integrate ancillary services (e.g., laboratory, pharmacy and radiology) orders and results needs harmonization across providers before it should be considered part of the HITE-CT services. This may be in Releases 2, 3 or later. Consideration of whether this can be included earlier will continue as part of the transparent planning process.

Connecticut has determined the initial prioritization of products and services and has grouped these into a number of releases as guidance for the operational planning process shown in Table 4.

**Table 4. HITE-CT Initial Service Releases**

<b>Planned Service Releases</b>	<b>Services Planned</b>
<b>Initiation</b>	<ul style="list-style-type: none"> <li>■ Procurement of services to build, maintain and operate the statewide HIE infrastructure</li> <li>■ Initial phase to build a statewide infrastructure that will support connections to local HIEs, the NHIN including Network Services, Master Patient/Provider Indexes and Record Locator Service</li> </ul>
<b>Release 1: Continuity of Care and Public Health Registries and Reporting</b>	<ul style="list-style-type: none"> <li>■ Ability for connecting providers, payers and ancillary service providers to exchange Continuity of Care Documents</li> <li>■ Clinical data within the statewide HIE automatically feeds Public Health Registries and Reporting needs</li> <li>■ Interfaces to main EHRs supported and subsidized by the HIE</li> </ul>
<b>Release 2: Quality/Gaps in Care Reporting</b>	<ul style="list-style-type: none"> <li>■ Main focus of this phase is development and deployment of metric-based Quality Reporting and the “care gaps”</li> <li>■ Will include access to and integration with data from other sources, e.g., State systems, the RxHub</li> <li>■ Will include a methodology that uses information from pharmacies, EHRs and other sources to ensure a complete and up-to-date medication record is available via the HIE</li> <li>■ Further strengthening of the underlying infrastructure services, including additional EHR interfaces</li> <li>■ Further develop the various dimensions of CCD/CCR to allow for additional useful data interchange</li> <li>■ Include ancillary services orders/results, offering integration with those service providers in the State with standards compliant systems that subscribe to the HITE-CT statewide HIE</li> </ul>
<b>Release 3: Personal Health Records</b>	<ul style="list-style-type: none"> <li>■ Main focus of this phase is to support consumer (patient) access to their information by harmonizing interfaces to PHR services</li> <li>■ May include ancillary services orders/results—to be decided based on a common approach across enough providers</li> </ul>

### 2.6.7 Procurement Approach

HITE-CT will work in collaboration with the State to review the State’s procurement processes to determine their suitability as processes to support HITE-CT’s procurement needs.

HITE-CT will review Connecticut State procurement vehicles and existing contracts to identify any suitable for HITE-CT.

HITE-CT will work in collaboration with the Connecticut State HIT Coordinator, the Connecticut Department of Administrative Services, the Connecticut Department of Information Technology and the Office of Policy and Management to develop a suitable procurement strategy/road map.

## 2.6.8 Technical Infrastructure Summary

### ■ Solution Architecture

- HITE-CT will lead a broadly participative effort to define a comprehensive Enterprise Architecture.
- HITE-CT will acquire an SOA and standards-based, secure, feature-rich application that will enable providers to achieve meaningful use of EHRs.
- This solution will require a scalable technical platform and network capable of working with all providers, hospitals, and other care settings in the State.

### ■ HITE-CT Products and Services

- Connecticut has determined the initial prioritization of HITE-CT products and services as guidance for the Operational planning process in 3 Releases:
  - **Release 1—Continuity of Care Documents (CCDs) and Public Health Registries and Reporting**, to address components of meaningful use, provide benefits to all State residents and build a foundational infrastructure and data set.
  - **Release 2—Quality/Gaps in Care Reporting**, to develop and implement metric-based Quality Reporting and the “care gaps” and provide access to and integration with data from multiple sources. This release also includes integrating data from auxiliary services (e.g., Lab results).
  - **Release 3—Personal Health Records (PHRs)**, to allow all residents the ability to help manage their own care through the management of their health records.

### ■ Standards

- The nature of solution will require numerous interfaces to inpatient and ambulatory EHR products, hospital clinical information systems, laboratory systems, and other clinical and State Agency systems. HITE-CT will take a leadership role in Connecticut in using and encouraging the use of standards for interoperability, privacy and security.

### ■ HIT and HIE Adoption

- HITE-CT will work with DSS as the State Medicaid agency and eHealthConnecticut as the Regional Extension Center to encourage and support the adoption of EHR and HIE.

## **2.7 Business and Technical Operations**

Connecticut is establishing strategies for supporting 'meaningful use' EHR requirements developed by the Federal government, integrating with existing state and local HIE capacity, and leveraging statewide shared services and directories. In consultation with a broad set of stakeholders, Connecticut has defined an overall implementation strategy that enables the connectivity of existing health information exchanges along with integrated delivery networks/health systems/point to point connections through HITE-CT. Capabilities and capacity will also be created for an interface with NHIN.

Connecticut realizes that full service HITE-CT deployment to all targeted participants will not be possible at initial deployment due to differences in participants' varying levels of adoption and readiness. The preferred option, developed by the State agencies and private sector stakeholders, is to initially ensure that the services delivered address at a minimum the requirements for 'meaningful use.' HITE-CT will continue to add incremental capabilities in phases based upon participant's needs and recommendations in support of fuller adoption. Finally, Connecticut will develop a deployment strategy that incrementally rolls out HIE services by provider type and geography based on their readiness levels.

Working collaboratively with Connecticut State agencies and private sector HIE stakeholders, the HITE-CT will continue to refine the implementation strategy and determine the full range of HIE participants.

### **2.7.1 Current State Assessment**

Across Connecticut there are a number of HIE initiatives already under way at various stages of planning and development. The HITE-CT planning process is coordinating with the furthest advanced of these efforts to learn from their experiences and to leverage initiatives where possible.

There is sufficient information available regarding potential user readiness to participate in the HIE to inform the planning process and allow for planning the level of support to be provided by HITE-CT. The planning process is open and transparent causing considerable public interest and information flow. The need for communication strategy and planning is understood, but execution is at a very early stage.

### **2.7.2 HITE-CT Communication Strategy**

Goals of the HITE-CT communication strategy include:

- Educating health care consumers and providers about how electronic medical records and their exchange can improve the quality and efficiency of health care for Connecticut residents, drawing on what has been learned during the DSS Transformation initiatives and Danbury HealthLink;
- Gathering inputs on how to best govern, coordinate and enable HIE activities throughout the state;
- Providing a forum to discuss systems for safeguarding personal health information;
- Engaging consumers about their preferred options for exercising control over their personal health information;
- Gathering suggestions and reactions to options for ongoing funding of HIE activities across the state; and

- Ensuring that providers are aware of funding and technical assistance opportunities and are knowledgeable about the Regional Extension Center.

HITE-CT will use all communication means at its disposal to communicate information to the public about plans for promoting and supporting adoption of EHRs and the HIE. These include:

- Continuing work with the HITEAC to expand the understanding of unique stakeholder needs, current and proposed capabilities, and potential barriers to implementing health information exchange;
- Publishing the Strategic and Operational Plan components for comment and making them available through the DPH website;
- Attending numerous stakeholder meetings, such as the associations and societies of Hospitals, facility based and home health providers, nursing homes, consumers and others;
- Using all traditional and new media resources for communication with all publics; and
- Coordinating and synchronizing where possible, the overall State HIT strategic planning and communication activities with the DSS health information technology planning activities.

### **2.7.3 HIE Infrastructure Procurement and Implementation**

HITE-CT will develop a full set of requirements based on the established architecture that will support the HIE products and services that may be deployed over the project's first three years, thus retaining flexibility to support the actual deployment plans.

HITE-CT will conduct a full and open procurement process to acquire:

- Software, hardware, and services to design, build and implement components to support HIE and its required ongoing maintenance; and
- Services and facilities required to host and operate the systems and related services enabling HIE across the state.

The resulting contract will retain flexibility for the future allowing HITE-CT to change vendors or bring these capabilities in-house in subsequent years.

### **2.7.4 Technical Operation Approach**

HITE-CT will design and create an operational organization reporting to the HITE-CT Chief Executive Officer including, but not limited to, performing the following key functions. These functions are not meant to dictate the structure of the HITE-CT organization.

- Identify Participants and Plan Deployment.
- Coordinate Standards and Adoption.
- Administer and Manage Utility.

#### **2.7.4.1 Identify Participants and Plan Deployment Processes**

HITE-CT will enable the exchange of information across existing local health information exchanges, integrated delivery networks, health systems, individual hospitals and health centers. It is fundamental to consider the diverse and complex health care delivery system in Connecticut and to be strategic in the technical implementation of HITE-CT.

Local HIEs, health systems and hospitals that have provided HIE-like connectivity to their community physicians should have opportunities for connection to HITE-CT infrastructure and share services in order to take advantage of these already established networks of providers. The best strategy for connecting health systems and other organizations that have established HIE capacity will be identified during implementation planning in partnership with the engaged implementation vendor. The implementation strategy must include encouraging early adopters who will be able to assist in driving acceptance of HITE-CT and to ensure that there will be HIE access for all Medicaid providers. The early adopters are likely to include DSS Medicaid Operations (as a payer), several community hospitals, health centers and physician groups. Where possible, the HITE-CT implementation will leverage existing directories and shared services such as the Master Patient indexes from the DSS's MMIS and Danbury's HealthLink.

Full deployment to all participants will not be possible, or even desirable at the initial launch of the first release – therefore, an incremental implementation is necessary. This is due to several factors including differences in users' levels of HIT adoption and the time required to connect each regional HIE, health system, hospital, practice and other health care entity. The strategy is to initially ensure that the HIE services address the requirements for meaningful use with simple interoperability in 2011 and continue to add incremental capabilities in well-articulated phases based upon user's needs. This incremental approach will also allow HITE-CT to apply lessons learned from early experiences and continually adapt its approach to changing conditions.

The following criteria will be used to devise a comprehensive phased implementation plan:

- HITE CT customer segmentation analysis;
- Priorities determined by the HITE CT Board of Directors for the implementation of HITE CT portfolio of product and services;
- State Medicaid HIT Plan (SMHP);
- Available readiness information; and
- Utility administration and management.

The implementation roll-out plan, under the direct control of the HITE-CT Board of Directors, will be adjusted during the early phases of deployment based on the levels of success achieved and changing market circumstances.

#### **2.7.4.2 Coordinate Standards and Adoption**

A key aspect of implementation will be HITE-CT's ability to identify, agree and promulgate information sharing, privacy/security and interoperability standards required for the smooth operation of the HIE and the ability to connect to existing HIE and HIE-like systems and the Nationwide Health Information Network. Standards will include those adopted by both State and Federal entities involved in information exchange. This work will be driven by policy decisions taken by the HITE-CT Board of Directors within the context of the legal and policy framework.

Connecticut will follow a coordinated approach to provide technical assistance and broad support for the HIE initiative to its participants. The approach will consist of building technical advisory capability using existing surveys and data from the SMHP planning process. In addition, Connecticut will work directly with larger providers and with the Regional Extension Center to determine HIT readiness.

The readiness assessment will be based on a maturity model that will position integration with HITE-CT in each provider's ongoing plans—immediate or later. The model will have various levels related to the size and complexity of the provider (e.g., small practice [5 or less

physicians] with minimal support staff; a large multi-physician practice with shared nursing and other support staff; a community based clinic; a small general hospital; a large acute care hospital; etc.) and address the following questions.

- **Vision and Strategy**—How is HITE-CT participation perceived and valued in the provider organization? How well does HITE-CT participation support the provider's strategic initiatives and plans? Does the provider have an EHR strategy across the enterprise?
- **Governance and Organization**—Are decision rights and controls in place within the provider organization to manage and secure clinical information assets? What HIE-centric roles and departments exist?
- **Process Automation**—Is the clinical information life cycle within the provider organization managed and what types of clinical information is managed by automated systems? What is the level of systems certification?
- **Enabling Infrastructure**—What information management technologies are in place in the provider organization to support current needs? What clinical information interchanges are already in place? Is there a technology strategy and plan to address the specific needs of HITE-CT participation?
- **Metrics**—Are there specific metrics within the provider organization to determine the impact of HIE on the bottom line? How much clinical information is redundant? How much poor quality clinical information exists and what impact does it have on the business and outcomes?

As the role of Health IT expands in the delivery of health care services in Connecticut, it will be important to monitor the availability of the IT skills required. The availability of highly skilled practitioners in areas such as database management and health informatics is especially important. Ensuring Connecticut's workforce is able to support and benefit from the developments in Health IT will require a comprehensive approach that engages medical providers, educational institutions and the resources of the State.

### **2.7.4.3 Administer and Manage the Utility**

HITE-CT staff will conduct day-to-day management of a number of critical functions.

- Relationship Management designed for each participant type to ensure each participating organization is ready and able to live up to their side of working with the HIE. This function will also provide extensive support for important connectivity needs of participants that will not be immediately be served directly by the HIE (e.g., e-Prescribing, structured lab results and local transfer of care summaries. These are connected services required to meet meaningful use requirements).
- Customer service functions to support users and resolve problems as they occur, analyze root causes and implement lasting solutions to operational problems and effectively communicate service levels attained.
- Provide training and education to HIE service users on a timely basis to ensure efficient implementation and continuing operations.
- Administration of security and access control and provide reporting to demonstrate compliance with all privacy and security policies.
- Contract and service-level agreement management with service providers to ensure the providers live up to their contracts and service levels are maintained.

## 2.7.5 Business and Technical Operations Summary

### ■ Deployment Strategy for HITE-CT

- Connecticut will create an incremental approach to deploying HITE-CT with an initial focus on ensuring the HITE-CT can support meaningful use requirements both by providing HIE services and by providing advice and guidance when these services are not yet available via the HIE. HITE-CT will work closely with stakeholders to develop a detailed deployment approach that will use the experiences and, where possible, assets of early adopters to ensure a successful deployment of HITE-CT across Connecticut.

### ■ HITE-CT Communications Strategy

- HITE-CT will create a detailed communications strategy designed to educate consumers and providers about how electronic records and electronic record exchange can improve the quality and efficiency of health care for Connecticut residents. This communication strategy will take advantage of multiple communications methods to spread the word about HITE-CT and its benefits.

### ■ HITE-CT Technical Implementation Approach

- Deployment Planning—The technical deployment of HITE-CT will build upon deployment planning to ensure that the right technologies and services are developed, deployed and eventually maintained to high standards with appropriate levels of support and training.
- Infrastructure Procurement—
  - HITE-CT will initiate an open procurement process for the acquisition of HITE-CT infrastructure as an immediate priority. Technical deployment will be achieved by a combination of HITE-CT and vendor resources.
  - HITE-CT will look to select a vendor with a proven HIE product who can ensure that Connecticut health care providers are able to qualify for Medicare and Medicaid incentive funding within federal time-lines.
  - HITE-CT will look to select a vendor with a proven HIE product who can ensure that Connecticut health care providers are able to qualify for Medicare and Medicaid incentive funding.

## 2.8 Legal/Policy

Connecticut's approach to establishing the appropriate legal and policy framework and requirements consists of working toward adopting and harmonizing Federal and State legal and policy requirements, creating the legal and policy framework to ensure policies meet standards of definition and consistency and are comprehensive across the needs of the HITE-CT (e.g., privacy and security, patient consent, data sharing and indemnification), and establishing the enforcement mechanism necessary to enable a successful adoption and implementation of HIE services in the State. To accomplish this, the State plans to leverage emerging national interoperability standards and protocols for data exchange, lessons learned from Connecticut's existing HIEs and from other states as well as the expertise of the HITE-CT Board of Directors' Legal and Policy Committee.

### 2.8.1 Current State Assessment

Connecticut's HIE, will encourage adoption by its participants and will itself comply with those principles related to HITE-CT's role in health information exchange. Specifically, these principles will:

1. Include provisions relating to security, privacy, data content, structures and format, vocabulary and transmission protocols;

2. Limit the use and dissemination of an individual's Social Security number and require the encryption of any Social Security number provided by an individual;
3. Require privacy standards no less stringent than the "Standards for Privacy of Individually Identifiable Health Information" established under HIPAA<sup>21</sup>;
4. Require that individually identifiable health information be secure and that access to such information be traceable by an electronic audit trail;
5. Be compatible with any national data standards in order to allow for interstate interoperability;
6. Permit the collection of health information in a standard electronic format; and
7. Be compatible with the requirements for an electronic health information system.

Connecticut, to develop the current legal framework, reviewed the approaches taken by other states in the development of their HIEs and debated the advantages and disadvantages of each of the various models. While some of the state's closest geographically to Connecticut have employed an opt-in model, an opt-out model is the consent model used by the most states in the country who have adopted HIEs. An opt-out consent model is generally recognized as the model most likely to result in a successful, viable HIE over time, since requiring patients to take affirmative action in the form of consent before PHI can be collected by the HIE has proven to be a significant impediment in other states.

### **2.8.2 Consent and Disclosure Model**

In accordance with the principles laid out above, the proposed consent model for the HIE is consistent with current federal and Connecticut laws and regulations regarding confidentiality. The only major change to the handling of PHI is the addition of the HIE as a mechanism to move the PHI. In some respects, the consent model provides patients greater control over the use and disclosure of their PHI through the HIE, above and beyond what the law current requires for the use and disclosure of PHI generally. The HITEAC has deliberately refrained from labeling the consent model as "opt-in" or "opt-out," or some variation of the two, in order to avoid confusion and to focus on the functions of the HIE as it relates to patient consent. The consent model allows for all PHI to be indexed or collected in the HIE, but gives an individual the right to prohibit disclosure of his/her PHI by the HIE to others. This means that all or some pre-defined set of data (e.g., labs, summary record information) will be eligible automatically for exchange (i.e. collected), with a provision that patients must be given the opportunity to opt out of the exchange (i.e. disclosure) of the data. The benefits of this model include, but are not limited to:

- Respecting patients' right to privacy by giving patients the right to prevent the disclosure of their PHI through the HIE--even with respect to disclosures for treatment, payment or health care operations, which HIPAA permits without patient authorization or the right to opt out;
- Improving the quality and efficiency of care provided to patients by increasing a health care provider's access to health information on a real-time basis and reducing redundancy;
- Creating a robust database of health information which can be used on a de-identified basis to develop policy and new programs or to conduct research; and
- Facilitating public health activities.

The Legal & Policy Committee is actively working on the consent model to enhance, clarify and strengthen its foundation as described. Much additional work must be done to address the details that accompany the model, including but not limited to, addressing certain existing federal and Connecticut laws. The Committee is in the process of performing a HIPAA preemption analysis to identify the Connecticut laws that provide more stringent privacy and/or security requirements than HIPAA with respect to the use and disclosure of PHI. The results of the preemption analysis may lead to recommendations for changes in Connecticut legislation.

The details of the proposed consent model are described below.

1. Collection of Health Information into HIE

- Participation in the HIE will be optional for providers; providers will not be able to submit PHI to the HIE or retrieve PHI from the HIE unless they agree to participate in the HIE. PHI will flow from all participating providers for all of the providers' patients into the HIE with no exceptions.
- The HIE will enter into a business associate agreement with each participating provider that addresses all HIPAA and federal and State law issues, including but not limited to, inappropriate and appropriate use of the HIE and consequences of misuse. The business associate agreement will meet the requirements of HIPAA but will also serve as a participation or data use agreement, setting forth the terms and conditions for participation in the HIE.
- The HIE will maintain a Master Patient Index and a Patient Registry maintained on separate servers for security reasons.

2. Disclosure of Health Information from the HIE

- HIPAA allows a provider to disclose PHI for treatment, payment and health care operations without patient authorization, except for 1) certain information subject to heightened confidentiality (HIV, alcohol and drug abuse, mental health, etc.) ("Sensitive PHI") and 2) information subject to a restriction requested by a patient and agreed to by a provider. HIPAA allows a patient to request restrictions on disclosure of the patient's PHI to a person or entity. A provider is not required to agree to the requested restrictions, except in very limited circumstances.
- Unless a patient has signed a form requesting that his or her PHI not be disclosed by the HIE, the HIE will disclose PHI that is not Sensitive PHI ("Generic PHI") for treatment, payment and health care operations as permitted by HIPAA, subject to a specific restriction on disclosure agreed to by a provider. Disclosure of Generic PHI will be determined in accordance with existing federal and State laws governing such disclosure.
- If a patient signs a form requesting that his or her PHI not be disclosed by the HIE, the patient's opt-out of HIE disclosures is global. No PHI of a patient who has opted out will be disclosed to any party by the HIE, except as required by law (i.e. public health reporting requirements, etc.). In addition, even if the patient has opted out of HIE disclosures, the HIE may allow for disclosures of Generic PHI in emergency treatment situations. Any disclosure of Generic PHI in an emergency treatment situation will be accompanied by heightened auditing to ensure an emergency situation existed.
- Disclosure of Sensitive PHI (for HIV, alcohol and drug abuse, mental health, etc.) will be determined according to existing federal and State laws governing such disclosure. Sensitive PHI will be disclosed by the HIE only if a proper authorization is on file with the

HIE. A standard form authorization that is compliant with applicable federal and State law will be developed for the HIE.

- The provider who transmits the PHI to the HIE will be responsible for identifying any Sensitive PHI prior to transmission. Under current law, prior to disclosing PHI from the medical record, providers must identify any Sensitive PHI in the medical record and determine whether disclosure of such Sensitive PHI is permitted by law. The identification of the Sensitive PHI prior to transmission to the HIE, and therefore in advance of disclosures from the HIE, is comparable to the review that the provider is required to undertake prior to disclosure from a medical record today. The HIE will not determine which health information is Sensitive PHI. The HIE will adopt the provider's identification of Sensitive PHI.
- A provider who agrees to a restriction requested by a patient must convey such restriction to the HIE.
- The different purposes for disclosing PHI from the HIE have been categorized. The priority for disclosure of PHI collected in the HIE is as follows (based on disclosing PHI from the HIE within 1 year, 3 year and 5 year timeframes) Note that some of the disclosures identified below may require a separate authorization covering the specific disclosure (e.g., research):
  - Patient Care and Services (need to access data to reduce redundancy and improve care) - Within 1 year;
  - Public Health - Within 1 year but recognize could be 3 years due to feasibility issues - Timing of submission of public health data should be split with some data having a higher priority than others;
  - Quality Reporting - Within 3 years;
  - Research - 5 years;
  - Legal Investigation or inquiry - Future to be determined; and
  - Other authorized uses.

### 3. Patient Education

- Each patient will receive a notice from their provider explaining the HIE and the patient's rights regarding disclosure of PHI from the HIE ("Special Notice") at the patient's first visit following the provider's participation in the HIE. The Special Notice will:
  - be required to be provided by a provider to a patient only one time (like a Notice of Privacy Practices ("NPP") under HIPAA);
  - be combined with a form for a patient to elect not to have his or her PHI disclosed by the HIE; and
  - include a telephone number and website to obtain more information.

### 4. Privacy and Security Measures

- The HIE will develop detailed privacy and security policies and procedures which will address without limitation, auditing, access controls, integrity controls and enforcement mechanisms to provide privacy and security protections for PHI that is transmitted to and through the HIE.

### 2.8.3 Development of Policies, Rules and Trust Agreements

Connecticut feels that it is imperative to develop widely accepted legal and business rules and uniform consent forms and procedures that will enable the exchange of health information for clinical purposes while assuring confidentiality and security. HITE-CT will establish a process for development of statewide policy guidance in the area of privacy and security, and a contractual framework for assuring adherence to the legal, business and technical rules that are developed through that process.

HITE-CT will manage data quality and integrity by implementing a proactive, ongoing data quality strategy. Data will be managed according to institutionalized rules, policies and continual monitoring and published information will be accurate and clear with a demonstrable audit trail. HITE-CT will provide a more complete proposal that addresses data collection and data access by purpose. In addition, Connecticut is considering providing enhanced obligations upon participants in the HIE by contractually binding the participants to comply with its terms and conditions, including encryption and breach notification requirements.

### 2.8.4 Framework for Enforcement of Privacy and Security Policy

The HITECH Act establishes new security and privacy requirements for notifying patients in the event a breach does occur. Under HITECH, these requirements and previous HIPAA requirements are specifically extended to include providers' business associates, such as HIEs, vendors of Personal Health Records, and other service providers.

During the next nine months, HITE-CT plans to leverage ONC guidance on 'nationally recognized standards' and on creation of HIE policies and regulations (e.g., Health Information Security and Privacy Collaboration, March 2009), and develop policies and legal agreements to govern the oversight of HITE-CT and enforcement and to guide technical services prioritized by the State. In addition, HHS Privacy and Security framework and HIPAA provides a well-established existing body of law for HITE-CT. The HIPAA preemption analysis, which is currently being updated in light of HIE needs, will provide input for a future legal framework for HITE-CT.

### 2.8.5 Legal/Policy Summary

- **Privacy and Security is a High-Priority for the HITE-CT**
  - The privacy and security of patient health information is of the highest possible concern in the development of HITE-CT, as reflected in Connecticut's Public Act 10-117.
  - The Legal and Policy Sub-committee has designed the framework for a consent model that is based on a presumptive inclusion of all PHI in the HIE with an individual having the right to prohibit disclosure of his/her PHI by the HIE to others.
- **HITE-CT Policies, Rules and Trust Agreements**
  - The policies, rules and agreements that will define how the HITE-CT operates must be created within the boundaries of all applicable laws and national standards. Of particular importance will be determining patient consent. The HITE-CT plans to review and leverage the work done by eHealthConnecticut in certain policy areas.
- **Enforcement Framework**
  - HHS Privacy and Security framework and HIPAA provides a well-established existing body of law for HITE-CT. The HIPAA preemption analysis, which is currently being updated in light of HIE needs, will provide input for a future legal framework for HITE-CT.

## 2.9 Evaluation Approach

Connecticut is committed to demonstrating the progress to be achieved through HITE-CT by employing a robust evaluation program. The goal of the evaluation effort is to demonstrate the economic and quality value of health information exchange investments. Evaluation will also show the effects of these investments on providers and consumers, determine what is working and what needs to be improved, disseminate these lessons learned broadly within the State and establish processes for continuous improvements.

HITE-CT will work to define the details of the evaluation process as part of the Operational Plan. At a minimum, the evaluation process will include the following

- A review of, and periodic revisions to the Connecticut Strategic and Operational Plan after being submitted to ONC.
- An annual evaluation coordinated with the national program evaluation.
- Compliance with reporting requirements specified in the State HIE Cooperative Agreement program plus additional reporting requirement identified during the development of the Operational Plan.
- Reporting of performance metrics specified in the State HIE Cooperative Agreement program plus additional performance metrics identified during the development of the Operational Plan.
- Coordination with national program evaluation and leverage of technical assistance from the Federal government in an effort to implement lessons learned that will ensure appropriate and secure HIE, resulting in improvement in quality and efficiency.

### 2.9.1 Reporting Requirements

The American Recovery and Reinvestment Act (ARRA) calls for the HITE-CT to submit program performance reports consistent with the HIE Cooperative Agreement Program. Table 5 shows the initial reporting requirements for HITE-CT. This list will be augmented with program guidance and technical assistance from ONC on specific reporting requirements, performance and evaluation measures and methods to collect data and evaluate project performance.

**Table 5. Reporting Requirements**

ONC Domain	Reporting Requirement
<b>Governance</b>	<ul style="list-style-type: none"> <li>■ Proportion of HITE-CT organization represented by public stakeholders</li> <li>■ Proportion of HITE-CT represented by private sector stakeholders</li> <li>■ HITE-CT representation including: government, public health, hospitals, employers, providers, payers and consumers</li> <li>■ Designated governance role of the State Medicaid agency (DSS) in HITE-CT</li> <li>■ HITE-CT's adoption of a Strategic Plan for statewide HIT</li> <li>■ HITE-CT's approval/implementation of Operational Plan for statewide HIE</li> <li>■ Status of HITE-CT meetings (minutes posted and meetings open to the public)</li> <li>■ Designated governance role of regional HIE initiatives in HITE-CT</li> </ul>
<b>Finance</b>	<ul style="list-style-type: none"> <li>■ Development/implementation status of financial policies and procedures consistent with state and federal requirements</li> <li>■ Revenue received from both public and private organizations</li> </ul>

ONC Domain	Reporting Requirement
	<ul style="list-style-type: none"> <li>■ Proportion of the sources of funding to advance statewide HIE obtained from Federal assistance, State assistance, other charitable contributions and revenue from HIE services</li> <li>■ From the charitable contributions listed above, proportion of funding that comes from health care providers, employers, health plans and others</li> <li>■ Development of a business plan that includes a financial sustainability plan</li> <li>■ HITE-CT's budget review with the oversight board on a quarterly basis</li> <li>■ Compliance with the Single Audit requirements of OMB</li> <li>■ Secure revenue stream to support sustainable business operations throughout and beyond the performance period</li> </ul>
<b>Technical Infrastructure</b>	<ul style="list-style-type: none"> <li>■ Development/implementation of statewide technical architecture for the HIE according to HIE model(s) chosen by the HITE-CT</li> <li>■ Integration of Connecticut's technical infrastructure with state specific Medicaid management information systems</li> <li>■ Integration of Connecticut's technical infrastructure with regional HIE</li> <li>■ Proportion of health care providers in the State able to send electronic health information using components of the statewide HIE technical infrastructure</li> <li>■ Proportion of health care providers in the State able to receive electronic health information using components of the statewide HIE Technical infrastructure</li> </ul>
<b>Business and Technical Operations</b>	<ul style="list-style-type: none"> <li>■ Technical assistance available to those developing HIE services</li> <li>■ HITE-CT's monitoring and planning activities for remediation of HIE as necessary throughout the State</li> <li>■ Percent of health care providers have access to broadband</li> <li>■ Development/implementation of statewide shared services or other statewide technical resources to address business and technical operations</li> </ul>
<b>Legal/Policy</b>	<ul style="list-style-type: none"> <li>■ Development/implementation of privacy policies and procedures consistent with State and Federal requirements</li> <li>■ Number of trust agreements that have been signed</li> <li>■ Incorporation of provisions in privacy policies, procedures and trust agreements allowing for public health data use</li> </ul>

## 2.9.2 Performance Measures

Table 6 shows the measures applicable to the implementation phase of the cooperative agreement as defined in the ONC State HIE Cooperative Agreement Program. Connecticut understands that these are an initial set of measures intended to provide a state specific and national perspective on the degree of provider participation in the HIE and the degree to which pharmacies and clinical laboratories are active trading partners in the HIE. E-Prescribing and laboratory results reporting are two of the most common types of an HIE within and across states. Additional performance measures will be identified as part of the development of the operational plan.

**Table 6. Initial Implementation Performance Measures**

<b>Performance Measures</b>	<ul style="list-style-type: none"> <li>■ Percent of providers participating in HIE services enabled by Connecticut's statewide directories or shared services<sup>22</sup></li> </ul>
	<ul style="list-style-type: none"> <li>■ Percent of pharmacies serving people within Connecticut that are actively supporting electronic prescribing and refill requests</li> </ul>
	<ul style="list-style-type: none"> <li>■ Percent of clinical laboratories serving people within Connecticut that are actively supporting electronic ordering and results reporting</li> </ul>

Connecticut will also be required to report on additional measures indicating the degree of provider participation in the HITE-CT, particularly those required for meaningful use. Future areas for performance measures will include but are not limited to:

- Providers' use of HIE to exchange Continuity of Care Documents (CCD)
- Exchange of clinical data within the statewide HIE automatically feeding public health registries and reporting needs
- Access to, and integration with, data from multiple sources, (e.g., State systems, RxHub, etc.)
- User access to personal health records

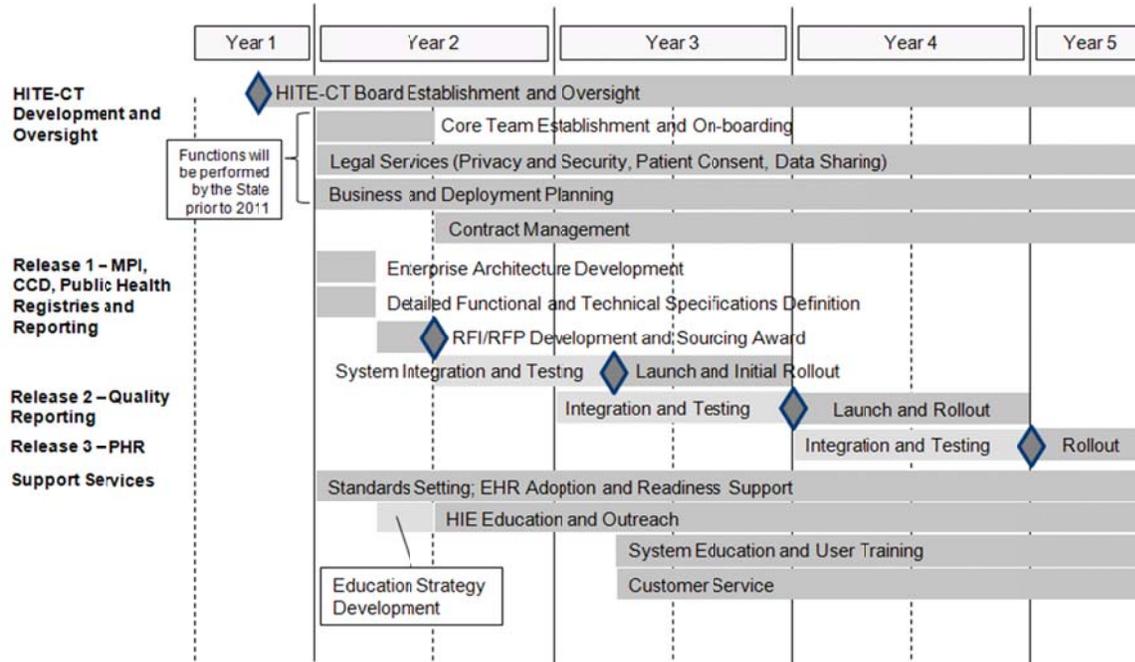
### 2.9.3 Evaluation Approach Summary

<ul style="list-style-type: none"> <li>■ <b>Reporting Requirements</b> <ul style="list-style-type: none"> <li>□ HITE-CT must be able to meet all reporting requirements for the cooperative agreement program and also other Federal and State requirements</li> </ul> </li> <li>■ <b>Evaluation and Performance Measures</b> <ul style="list-style-type: none"> <li>□ The implementation, operation, and impact of HITE-CT will be monitored closely and continuously in order to demonstrate deployment, effectiveness and results. Performance measures will be selected, continuously refined and augmented to meet Connecticut's vision and strategic goals for health information exchange</li> </ul> </li> </ul>
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## 2.10 HITE-CT Strategic Plan Road Map and Recommendations

After the formal commencement of the HITE-CT in January 2011, the Agency is planning an aggressive integration and rollout schedule with three releases in three years. The Strategic Plan proposed schedule is shown in the diagram below and further described in the 0 below. The Operational Plan will further refine the schedule into a detailed work plan.

**Figure 6. HITE CT Strategic Plan Road Map**



**Table 7. HITE-CT Strategic Plan Road Map Details**

<b>HITE-CT Development and Oversight</b>
<b>HITE-CT Board of Directors Establishment and Oversight</b>
<ul style="list-style-type: none"> <li>■ Per the legislation enabling the HITE-CT, establish the HITE-CT to develop and support the HIE</li> <li>■ Define HITE-CT's governance structure, including roles, responsibilities and processes to: provide oversight for entire HITE-CT initiative; establish the appropriate mechanisms for stakeholder input; provide oversight for planning and operations, and make operational decisions; and establish channels for existing or future organizations, e.g., REC, HIEs, hospital organizations to provide stakeholder representation</li> </ul>
<b>Core Team Establishment and Onboarding</b>
<ul style="list-style-type: none"> <li>■ Staff the Agency with leadership and employees in anticipation of system development and deployment</li> </ul>
<b>Legal Services (Privacy and Security, Patient Consent, Data Sharing)</b>
<ul style="list-style-type: none"> <li>■ Create an HIE policy framework that will ensure policies: <ul style="list-style-type: none"> <li>□ Meet standards of definition and consistency</li> <li>□ Are comprehensive across the needs of the Agency and HITE-CT (e.g., privacy and security, patient consent, data sharing etc.)</li> <li>□ Are reviewed and refreshed in a timely manner, and have suitable and effective enforcement methods and compliance metrics defined</li> </ul> </li> <li>■ Define principles for data ownership by type of data and population impacted (including special populations) and determine: <ul style="list-style-type: none"> <li>□ Usage allowed by type of data and population</li> <li>□ Type of consent model</li> <li>□ When sharing agreements are required</li> <li>□ Privacy and security requirements</li> </ul> </li> <li>■ Create an oversight and enforcement framework, and identify compliance metrics and associated sanctions</li> <li>■ Identify requirements to meet security and privacy policies and ensure compliance with Federal and State policies for data protection</li> </ul>
<b>Business Deployment Planning</b>
<ul style="list-style-type: none"> <li>■ Establish standards governance structure and supporting processes to identify requirements for review of established and adopted standards for leveragability, and monitoring of adoption of these standards</li> <li>■ Determine priorities for the implementation of HITE-CT portfolio of products and services, and use readiness information available to devise a phased implementation strategy</li> <li>■ Conduct segmentation analysis of the customer base and markets for each service area</li> <li>■ Build measurement capability into the HITE-CT that would enable the State to report on Government Performance Reporting Act (2003) and ARRA specific measures and Cooperative Agreement specific reporting aligned with demonstrating meaningful use</li> </ul>
<b>Contract Management</b>
<ul style="list-style-type: none"> <li>■ Establish the appropriate processes and mechanisms to conduct oversight and management of vendor contracts and performance</li> </ul>
<b>Enterprise Architecture Development</b>
<ul style="list-style-type: none"> <li>■ Create enterprise architecture and associated processes for the HITE-CT using industry standards and identify the skill sets required</li> </ul>

<b>HITE-CT Development and Oversight</b>
<b>Detailed Functional and Technical Specifications Definition</b>
<ul style="list-style-type: none"> <li>■ Develop detailed specifications to define the technical and functional aspects of the technology</li> </ul>
<b>RFI/RFP Development and Sourcing Award</b>
<ul style="list-style-type: none"> <li>■ In collaboration with the State's Procurement Office, develop procurement strategy/road map that includes identification of existing usable contracts by HITE-CT</li> </ul>
<b>HIE Infrastructure Stand-up</b>
<ul style="list-style-type: none"> <li>■ Vendor planning and foundational services such as Master Provider Index, Master Patient Index and a Record Locator Service created to enable subsequent releases of HIE functionality and services</li> </ul>
<b>Release 1—MPI, CCD/CCR, Public Health Registries and Reporting</b>
<b>System Integration and Testing; Launch and Initial Rollout</b>
<ul style="list-style-type: none"> <li>■ Develop the technology necessary to support the HIE, test and roll the system out to all clients</li> </ul>
<b>Release 2—Quality Reporting/Gaps in Care Reporting</b>
<b>Integration and Testing; Launch and Rollout</b>
<ul style="list-style-type: none"> <li>■ Develop additional functionality on the system as part of the second phase of the HIE development, including Quality and Gaps in Care Reporting, and rollout the system to current and new users</li> </ul>
<b>Release 3—PHR</b>
<b>Integration and Testing; Launch and Rollout</b>
<ul style="list-style-type: none"> <li>■ Develop additional functionality on the system as part of the third phase of the HIE development, including Personal Health Records, and rollout the system to current and new users</li> </ul>
<b>Support Services</b>
<b>EHR Adoption and Readiness Support</b>
<ul style="list-style-type: none"> <li>■ Establish collaboration between HITE-CT and Connecticut's Regional Extension Center, eHealthConnecticut, to create awareness and education, provide certification of interfaces and support, provide education on meaningful use to future HIE participants and build readiness understanding and outreach.</li> <li>■ Build tools for determining and improving readiness of potential participants</li> </ul>
<b>HIE Education and Outreach</b>
<ul style="list-style-type: none"> <li>■ Concurrent with the development of the HIE and with other education channels, proactively educate providers, hospitals and the public about the existence, benefits of, and use of, the HIE</li> <li>■ Develop timely public education/communication for a successful HIE implementation and the sustainability of the HIE. Key activities for consideration include: defining audience, types of communication channels and sequencing of communication artifacts; identifying trusted messengers (e.g., patients tend to trust their health care providers); researching major concerns and potential legal challenges to understand and develop mitigation strategy, and working with legislators to establish strategy for diffusing potential issues</li> <li>■ Design a Public Awareness, Education and Participation Plan that includes understanding of stakeholder groups, viewpoints and needs; tailoring of communication around the value proposition of the HIE to each stakeholder group; developing and sharing case studies that demonstrate the value of the HIE; and coordinate with legal and policy domain to ensure strategy is in alignment with consent decision</li> </ul>
<b>User Education and Training</b>
<ul style="list-style-type: none"> <li>■ Concurrent with release rollouts, start training programs for users.</li> </ul>

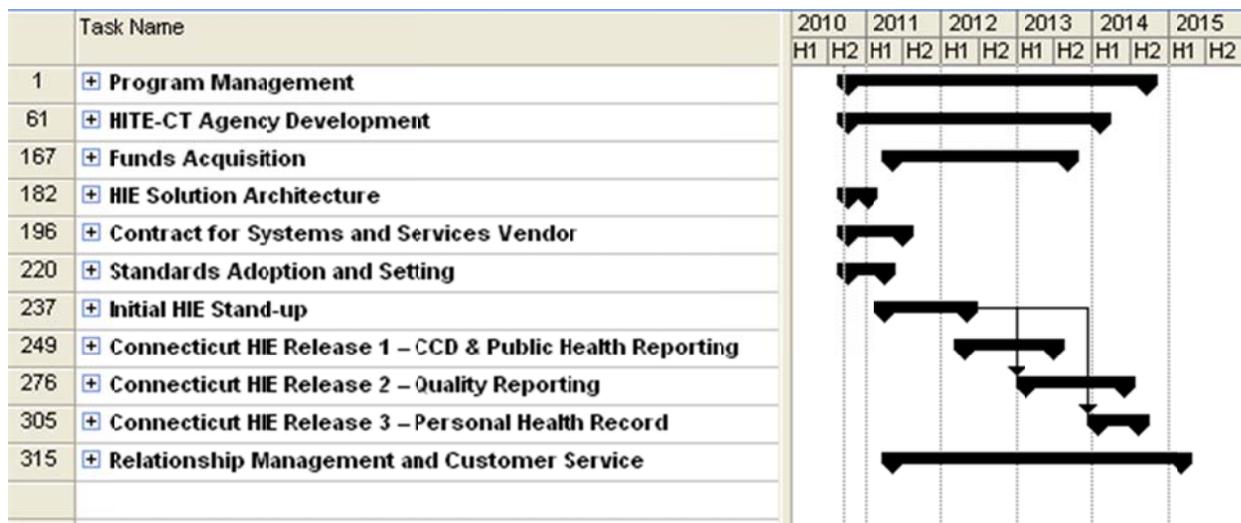
### 3.0 Operational Plan

#### 3.1 Operational Plan Summary

The HITE-CT Strategic Plan, developed through a collaborative endeavor, will be implemented through this Operational Plan, which outlines a corresponding and comprehensive set of activities to achieve statewide HIE in Connecticut. Execution of the HITE-CT Operational Plan will enable and support Connecticut’s health care providers to achieve and demonstrate meaningful use of HIT to improve the effectiveness and efficiency of health care. In Connecticut, the HITE-CT will continue to share information and coordinate with the HIE initiatives in other states, as well as supporting the NHIN initiatives.

In the following sections, HITE-CT’s Operational Plan is described in substantial detail. The Operational Plan Master Schedule has been developed using Microsoft Project® and is provided as a companion document with this document. A list of all the tasks in the Master Schedule is included in Section 3.9.1 of this document. The Operational Plan is organized into 11 sub-projects illustrated and described below.

**Figure 7. Operational Plan Master Schedule Top Level Summary**



**Table 8. Subproject Overview and Goals**

<b>Subproject</b>	<b>Overview</b>	<b>Primary Goal</b>
<b>Program Management</b>	<ul style="list-style-type: none"> <li>■ Overall Program Management, Project Status and Risk Assessment and Project Milestone Review</li> <li>■ Producing the business plans required to enable the HITE-CT Board to 1) make investment decisions, 2) provide the planning information required by ONC and 3) maintain the plans required to drive the business of HITE-CT</li> </ul>	Ensure Program Quality and Compliance with the Requirements of the Cooperative Agreement and support Project Assessment and Project Modifications as necessary to ensure success
<b>HITE-CT Agency Development</b>	<ul style="list-style-type: none"> <li>■ Establishing the organization, staffing and processes that are required for the effective operation of the HITE-CT Agency</li> </ul>	Resource and Organizational Readiness and Oversight
<b>Funds Acquisition</b>	<ul style="list-style-type: none"> <li>■ Processes and operations required to access and secure the funds identified in the sustainable funding plan</li> </ul>	HITE-CT Sustainability
<b>HIE Solution Architecture</b>	<ul style="list-style-type: none"> <li>■ Creating an enterprise solution architecture and associated processes for the HITE-CT using industry standards in alignment with the Connecticut Enterprise Architecture—Technology Architecture (CTEA-TA) standards</li> </ul>	Validating the Feasibility and Compatibility with Industry Standards of Connecticut's HIE Approach
<b>Contract for Systems and Services Vendor</b>	<ul style="list-style-type: none"> <li>■ Open competitive procurement of the software, hardware and services required to operate Connecticut's HIE</li> <li>■ Contract finalization</li> </ul>	Get the Best Value for Connecticut
<b>Standards Adoption and Setting</b>	<ul style="list-style-type: none"> <li>■ Managing the CT adoption of a variety of standards required to effectively operate Connecticut's HIE and support the NHIN initiative</li> </ul>	Investment Protection and Compatibility with Other HIE Efforts
<b>Initial HIE Stand-up</b>	<ul style="list-style-type: none"> <li>■ Vendor planning and foundational services such, as Master Provider Index, Master Patient Index and a Record Locator Service created to enable subsequent releases of HIE functionality and services</li> </ul>	HIE Infrastructure Stability
<b>Connecticut HIE Release 1— CCD/CCR &amp; Public Health (PH) Reporting</b>	<ul style="list-style-type: none"> <li>■ Implementation of Services for Connecticut HIE Release 1—Continuity of care documents/records (CCD/CCR) and Public Health Registries and Reporting</li> <li>■ For each major area of functionality (CCD/CCR and PH Reporting) the schedule assumes there will be 5 “waves” of releases based on the characteristics of the functionality being rolled out</li> </ul>	Improved Continuity of Care and Public Health Outcomes

Subproject	Overview	Primary Goal
<b>Connecticut HIE Release 2—Quality Reporting</b>	<ul style="list-style-type: none"> <li>■ Implementation of services for Connecticut Release 2—Quality Reporting</li> <li>■ For each major area of functionality (Quality Reporting and Ancillary Service Results) the schedule assumes there will be five (5) “waves” of releases based on the characteristics of the functionality being rolled out</li> </ul>	Improved Coordination of Care, Quality of Care, Medical Outcomes and Patient Experience
<b>Connecticut HIE Release 3—Personal Health Record (PHR)</b>	<ul style="list-style-type: none"> <li>■ Implementation of services for Connecticut Release 3—Integration with Commercially available Personal Health Record (PHR) offerings</li> <li>■ The schedule assumes there will be an implementation “wave” for each PHR product integrated. Total number of “waves” not defined as number of PHR products remains an unknown at this stage.</li> </ul>	Improved Patient Access to and Control of Health Records
<b>Relationship Management and Customer Service</b>	<ul style="list-style-type: none"> <li>■ Introduction of the required level of customer service and provided to participants aligned with the implementation of new services and participants</li> </ul>	Leadership for Improvement in Health Information Exchange

## 3.2 Coordination with ARRA and other State and Federal Programs

### 3.2.1 Coordination with ARRA Programs

HITE-CT has established effective coordination efforts with other ARRA programs supporting HIE. The 3C3 will continue its efforts to share information, lessons learned, and implementation strategies.

To improve the current level of understanding of Connecticut’s health care provider’s HIT adoption and to supplement the data currently available, HITE-CT and the 3C3 will continue to support coordination activities between the three organizations by:

- Creating communications and evaluation subcommittees that focus on specific aspects of coordination for the programs;
- Coordinating communications to providers, hospitals and the public on health exchanges, meaningful use, incentive programs and REC activities;
- Developing and aligning key messages to serve all entities;
- Updating the Environmental Scan of HITE in Connecticut;
- Creating a coordinated master workplan for all activities;
- Sharing of contacts, channel partners and stakeholders;
- Sharing of key audiences from the HIE, REC and incentive programs; and
- Planning and executing conferences for providers, health care entities and the public on meaningful use, HIE and other HIT topics.

### 3.2.2 Coordination with State Programs

Due to its size compared with other U.S. states, Connecticut has the benefit of being able to share information comparatively easy between its government agencies, commercial organizations and non-profit groups. This easy of access, open communication and collaboration is evidenced by the large number of leaders, from diverse groups, that have contributed to the development of this Plan. DPH and the HITE-CT plan to fully utilize the close relationships that have been built to continue the current level of communication and collaboration and expand it as much as possible.

The Connecticut State Government HIT Coordinator has begun to coordinate with a number of the federally funded programs across the State. Some of these programs are summarized in Table 9.

**Table 9. HITE-CT Coordination**

Program	HITE-CT Coordination
<p><b>Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement Program</b></p>	<p>The State Epidemiologist has expressed interest in collaborating even further to develop capabilities that would support ELC efforts. Current processes for the collection of reportable diseases, studies including data outside of these data sources, and the dissemination of information electronically have historically been challenging in Connecticut. The State Epidemiologist will be pursuing opportunities to work with the HIE for collection and dissemination of data for effectiveness and efficiency.</p>
<p><b>Connecticut Prescription Monitoring and Reporting System</b></p>	<p>Significant coordination already exists between this program and the HITEAC. The CT Commissioner of the Department of Consumer Protection is a member of the HITEAC and the HITE-CT Board of directors and the manager of the CPMRS is a HITEAC attendee. It is being proposed that this program will be extended to include non-controlled substance prescriptions (within Connecticut and on an inter-state basis). If the plan is approved this will be considered by HITE-CT as a potential source of prescription history that can be supplied by the Statewide HIE to providers EHR systems.</p>
<p><b>Maternal and Child Health State Systems Development Initiative programs</b></p>	<p>The programs that are part of this initiative currently collaborate with DSS, DCF, UCONN, the Department of Education and the State Laboratory. The programs use data and systems such as the Connecticut Pregnancy Risk Assessment Tracking System (PRATS), the Pregnancy Risk Assessment Monitoring System (PRAMS), WIC program data, pregnancy related mortality surveillance data, the child health profile database, children &amp; youth with special health care needs data, fetal and infant mortality, vital records data, newborn lab screening and Medicaid program data including Health care for Uninsured Kids and Youth (HUSKY). The programs are prepared to integrate as possible with the HIE to better leverage data sources and systems.</p>
<p><b>State Offices of Rural Health Policy</b></p>	<p>The Connecticut State Office of Rural Health supports 65 of 169 towns in the State that are listed as rural, as defined by the 2000 Census. The Office has been providing support for providers in the rural areas of the State, among other entities, and will likely be providing support for foundational broadband Internet access in parts of the State that do not currently have access.</p> <p>The Office has connections to DPH and is eager to collaborate with the Agency to promote HIT and HIE services to rural providers.</p>

Program	HITE-CT Coordination
<b>State Offices of Primary Care</b>	The State Office of Primary Care in Connecticut is part of the Department of Public Health. The Office is currently developing databases of physicians in underserved areas and, in coordination with the HITE-CT, will look for opportunities to leverage the data gathered by the Office in the HIE and for the Office to leverage the statewide connection to providers in underserved areas.
<b>State Mental Health Data Infrastructure Grants for Quality Improvement (SAMHSA)</b>	The Department of Mental Health & Addiction Services is the recipient of Federal SAMHSA grants. Through past grants, DMHAS has strong working relationships with other State agencies, and will consistently evaluate opportunities to integrate with the HIE.
<b>State Medicaid/CHIP Programs</b>	<p>The Department of Social Services is the provider for State Medicaid and CHIP programs. DSS has been an active participant in the planning of the HITE-CT and is including all programs in its purview in the planning for the HIE.</p> <p>They are actively pursuing the Medicaid Incentive Program planning and are coordinating with both DPH and eHealthConnecticut to complete enhanced environmental scans and plans for outreach and maximized program impacts within the State.</p> <p>DSS is also the recipient of a Medicaid Transformation Grant, part of which funded the HIE pilot, also run by eHealthConnecticut. As part of this initiative, members of DPH and State providers have been coordinating with DPH.</p>
<b>Indian Health Service (IHS) and tribal activity</b>	<p>The State has working relationships with the two Indian tribal nations in Connecticut. The Mashantucket Pequot Tribal Nation Tribal Health Services, funded in part by IHS, have installed EHRs and are connected to the IHS HIE.</p> <p>As part of the interaction with the nations, the HITE-CT will work with the nations and the IHS to enable information exchange with the tribal care providers, through both direct interaction with the nations and the IHS.</p>
<b>Connecticut Partnership for Public Health Workforce Development</b>	<p>DPH is an active member of the Connecticut Partnership for Public Health Workforce Development to promote and facilitate collaborative education and training programs among academic institutions, state and local public health agencies and organizations to enhance the quality of public health services, especially for underserved areas and populations in the region.</p> <p>The regional training centers work to improve the Nation's public health system by strengthening the technical, scientific, managerial, and leadership skills for the current and future public health workforce.</p> <p>The HIT Coordinator and HITE-CT will coordinate with the Partnership to drive further health care workforce training in Connecticut and in other neighboring states.</p>

### 3.2.3 Participation with Federal Care Delivery Organizations

The State of Connecticut is exploring opportunities to work with and integrate with EHRs and HIEs that Federal Care Delivery Organizations are currently utilizing. The VA, Indian nation's health services within and the Department of Defense (DoD) all operate functional EHRs and have connections to Federal HIEs. The State is proactively seeking opportunities to understand

the structure of these systems and collaborate on ways to develop interconnections to them, either directly, or through the NHIN.

### **3.2.4 Coordination with Other States**

DPH has initiated informal and formal conversations with HIE colleagues in other states, including Maine, Vermont, and New York to discuss lessons learned, strategies, barriers, and the potential for coordinated activities. In addition, the ONC Conferences provide the opportunity for state colleagues to meet and discuss options for success.

The HITEAC is an active participant in the New England States Consortium Systems Organization (NESCSO) a New England and New York collaborative with the stated purpose to exchange information, share ideas and plans and promote coordination in matters pertaining to the development of a Health Information Exchange Architecture and related initiatives that include, but are not limited to, the development of a Regional Master Provider Index. The benefits of this collaborative include:

- Established conduits for information between all of the states instead of the one-off communications that might happen otherwise;
- Coordinated standards that can be adopted in all states preventing the adoption on incompatible standards, requiring future rework;
- Consistency in content and format between states for ease of interoperability;
- Pre-planned consistency in technology between states for ease of technical interconnections in syntax, semantics and metadata;
- Connection to the Nationwide Health Information Network (NHIN);
- Coordination Medicaid MITA architectures to reduce conflicting requirements.

DSS is also coordinating with several states, as part of the Medicaid Incentives Program including the working with other states that are using HP's (formerly EDS') MMIS solution. The states that are collaborating in this effort are Connecticut, Pennsylvania, New Hampshire, Rhode Island, Vermont, Delaware, Alabama, Florida, Kentucky, North Carolina, Tennessee, Indiana, Wisconsin, Arkansas, California, Oklahoma, Kansas, Idaho and Oregon.

The purpose of this collaboration includes:

- Sharing HIT plans;
- Coordinating requirements around development and planning;
- Leveraging technical work done to the MMIS's across states;
- Working together on NLR interfaces;
- Sharing "best practices" and lessons learned;
- Bringing forward new information regarding program developments; and
- Collectively building knowledge.

### **3.2.5 Coordination Action Items**

Table 10 summarizes the actions included in the Operational Plan that relate specifically to Coordination.

**Table 10. Coordination Action Items**

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
1. Develop formal links to REC.	41—Stakeholder Coordination	4/29/2011
2. Assist REC with assessing providers' levels of EHR use and readiness.	41—Stakeholder Coordination	4/29/2011
3. Coordinate with DPUC and DOIT to understand broadband connectivity issues.	41—Stakeholder Coordination	4/29/2011
4. Coordinate with DPUC and DOIT to extend the Connecticut Education Network and build further health care broadband access	41—Stakeholder Coordination	4/29/2011
5. Work with DSS SMHP project to leverage and uncover HIT adoption knowledge.	41—Stakeholder Coordination	4/29/2011
6. Align with the DSS Medicaid HIT Plan	41—Stakeholder Coordination	4/29/2011
7. Develop collaborations with:	50—Develop collaborations with the following Programs	1/7/2011
a. Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement Program		
b. Connecticut Prescription Monitoring and Reporting System		
c. Maternal and Child Health State Systems Development Initiative programs		
d. State Offices of Rural Health Policy		
e. State Offices of Primary Care		
f. State Mental Health Data Infrastructure Grants for Quality Improvement		
g. State Medicaid/CHIP Programs		
h. Indian Health Service		
i. Connecticut Partnership for Public Health Workforce Development		
j. Capital Community College in Hartford		

## **3.3 Governance**

### **3.3.1 Governance and Policy Structures**

As of January 1, 2011, the HITE-CT, a quasi-public agency will be the State Designated Entity (SDE) for HIE in Connecticut. Governance for the HITE-CT will be provided by its legislatively appointed Board of Directors responsible for implementing and sustaining a private, secure and robust statewide HIE in Connecticut.

With respect to direct and specific oversight of a health information exchange, it is important to note that the HITE-CT Board, in consultation with its Committees, other stakeholders, and the public, will oversee the development of policies for privacy and security. In particular, the HITE-CT Board will establish policies regarding consumer authorization and consent, user access and control, provider access, financing, and secondary uses of data. The HITE-CT Board will develop policies that ensure a high level of protections for the statewide HIE.

As described in the Strategic Plan, HITE-CT will build a comprehensive governance model to:

- Advocate for shared governance mechanisms and encouraging public participation;
- Encourage stakeholder participation in HITE-CT, including individuals, enterprises and stakeholder representative bodies such as associations;
- Promote health information technology adoption across all health care providers, payers, and patients to provide the structured health information that will be the key to achieving improvement goals;
- Oversee the HIE utilities by managing technical operations to ensure availability, adaptability, and usability;
- Conduct business operations, including financing and accountability mechanisms;
- Provide accountability and oversight of the exchange of health information to ensure legal and policy requirements are satisfied; and
- Foster intrastate and interstate collaboration on health information exchange and related standards development.

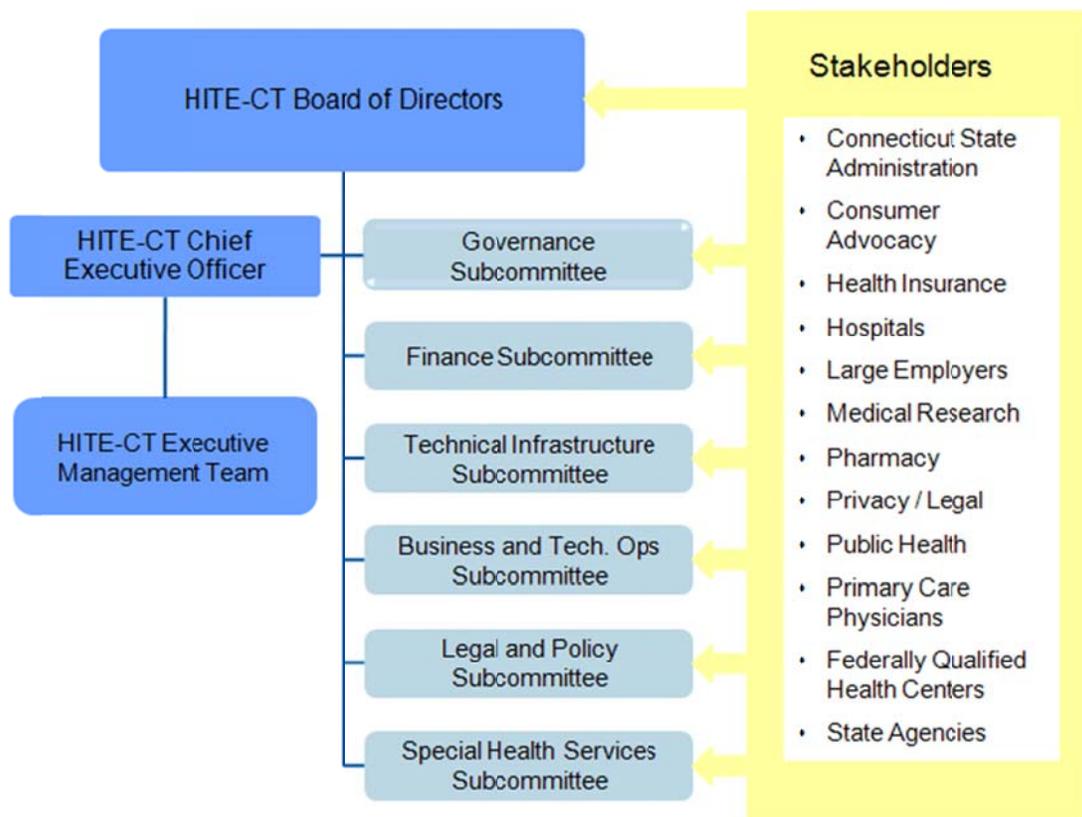
#### **3.3.1.1 HITE-CT Board of Directors and CEO**

The Board shall select, appoint and determine remuneration for a Chief Executive Officer (CEO). The HITE-CT CEO will be responsible for building an organization and administering the agency's programs and activities in accordance with policies and objectives established by the Board including:

- Implementation and periodic revisions of the health information technology plan, including the implementation of an integrated statewide electronic health information infrastructure for the sharing of electronic health information among health care facilities, health care professionals, public and private payers, state and federal agencies and patients;
- Appropriate protocols for health information exchange; and
- Electronic data standards to facilitate the development of a statewide integrated electronic health information system for use by health care providers and institutions that receive state funding.

The figure below provides an organization chart of HITE-CT Governance structure.

**Figure 8. Stakeholder Interaction with HITE CT Governance**



### **3.3.1.2 Reporting and Success Measures for Accountability**

The CEO of the HITE-CT will report annually in writing, to the Governor and the General Assembly, on funding and the status of health information exchange and health information technology in Connecticut.

The federal government mandates strict accountability measures on the part of ARRA funded programs, including HITE-CT. Consistent with the ONC Cooperative Agreement, DPH will continue ARRA reporting on a quarterly basis for the duration of the four year Cooperative Agreement.

In addition, as part of the Cooperative Agreement, DPH is engaging the University of Connecticut Health Center (UCHC) in a four year Memorandum Of Agreement (MOA) for the purpose of conducting a comprehensive evaluation of the DPH compliance with the Cooperative Agreement.

Finally, Connecticut has made significant in-roads toward stakeholder engagement. At the present time, approximately 150 individuals from 53 distinct agencies/entities<sup>23</sup> are involved in one or more aspect of HITE-CT planning. These individuals represent consumers, governmental agencies, hospitals, payers, non-profit groups, for profit businesses, providers, educational/research institutions, community health centers and, in some cases, themselves as individuals.

Stakeholders participate in the HITE-CT building process in a variety of ways: membership in the full Board (by appointment only), membership in Board Committees, attending meetings and/or providing feedback to the Board and its Committees with regard to its work. All meetings of the Board and its Committees are publicly noticed, with agendas and minutes for each meeting posted on a publically accessible website.

**3.3.1.3 Public Awareness, Education and Participation Plan**

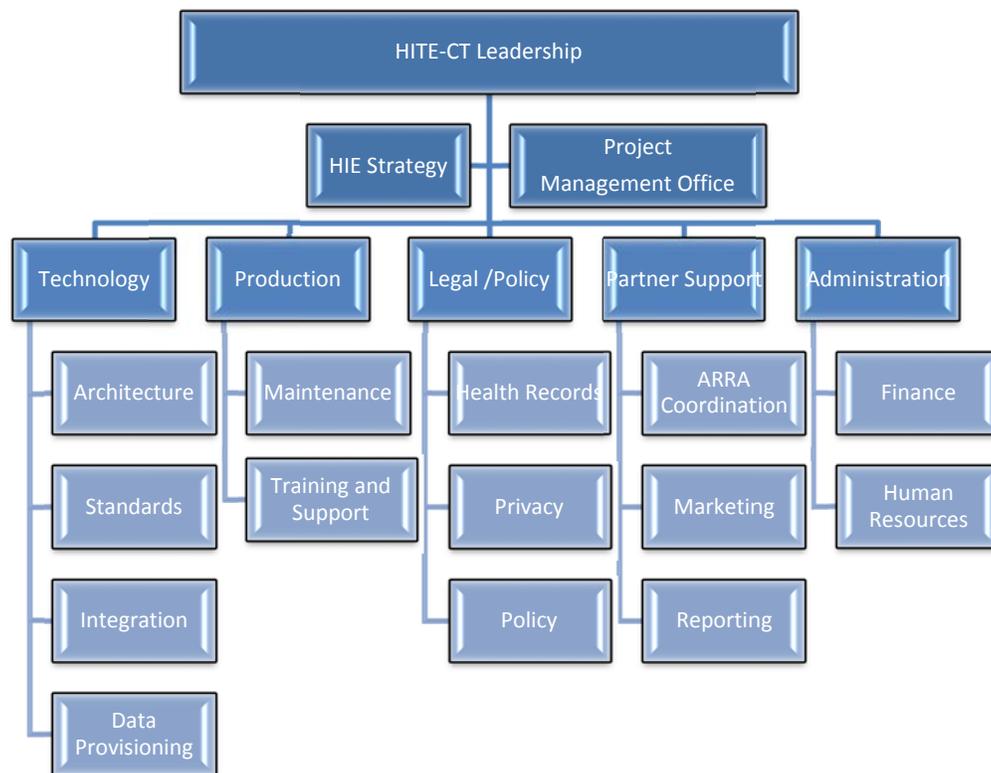
The communications strategies will continue to be coordinated among DPH, DSS, and the REC. Such coordination ensures that messaging is disseminated in a consistent fashion. The communications plan (Appendix 4.13) shall include, but not be limited to, the following:

- Understanding of stakeholder groups, viewpoints and needs;
- Tailoring of communication around the value proposition of the HIE to each stakeholder group;
- Developing and sharing case studies that demonstrate the value of the HIE; and
- Developing education materials regarding the legal consent model.

**3.3.2 HITE-CT Organization Structure**

For the purposes of operational planning and budgeting, an operational organization structure has been developed and is illustrated below and described in Table 11 in terms of the key functional roles and their reporting relationships.

**Figure 9. HITE CT Key Functional Roles and Organizational Hierarchy**



**Table 11. HITE-CT Organizational Structure Functional Roles**

Role	Description
<b>HITE-CT Leadership</b>	<ul style="list-style-type: none"> <li>■ Strategic road map and business plan (project) approval</li> <li>■ Multiyear budget development and approval</li> <li>■ Major project oversight and accountability</li> <li>■ Integration and culture</li> <li>■ Standards approval</li> <li>■ HITE-CT Scorecard, satisfaction, quality and value review and accountability</li> <li>■ HITE-CT Board relationship</li> </ul>
<b>HITE-CT Strategy</b>	<ul style="list-style-type: none"> <li>■ Annual Business Plan development</li> <li>■ Requirements analysis</li> <li>■ HITE-CT road map development</li> <li>■ Health Informatics and NHIN Lead</li> <li>■ Clinical Informatics leadership</li> <li>■ Performance scorecard development, usage and user satisfaction survey</li> <li>■ Evaluation and benefits demonstration</li> <li>■ Standards process development</li> </ul>
<b>Project Management Office</b>	<ul style="list-style-type: none"> <li>■ Project portfolio oversight</li> <li>■ Project management</li> <li>■ Project reporting</li> <li>■ Contractor management</li> <li>■ Vendor management</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>■ Application architecture development</li> <li>■ Data architecture development</li> <li>■ Product Procurement Lead</li> <li>■ Interface and integration design</li> <li>■ IT Security</li> <li>■ Standards development</li> </ul>
<b>Production</b>	<ul style="list-style-type: none"> <li>■ Implementation Lead</li> <li>■ Change management</li> <li>■ Data load</li> <li>■ Data quality management</li> <li>■ Maintenance</li> <li>■ Interface maintenance</li> <li>■ Subscriber support</li> <li>■ Partner training</li> </ul>
<b>Legal/Policy</b>	<ul style="list-style-type: none"> <li>■ Legal Officer</li> <li>■ Chief Privacy Officer</li> <li>■ Health records</li> <li>■ Contracting</li> <li>■ External policy and regulation development and coordination</li> </ul>

Role	Description
	<ul style="list-style-type: none"> <li>■ Enterprise Risk Management</li> </ul>
<b>Partner Support</b>	<ul style="list-style-type: none"> <li>■ Relationship Management with Partners (information suppliers and consumers)</li> <li>■ HIE marketing and outreach</li> <li>■ ARRA coordination</li> <li>■ Communications</li> <li>■ Quality Reporting and Analytics</li> </ul>
<b>Administration</b>	<ul style="list-style-type: none"> <li>■ Long term sustainability model development</li> <li>■ HIE financial management</li> <li>■ Human Resources</li> <li>■ Administration</li> </ul>

### 3.3.3 Governance Action items

Table 12 summarizes the actions included in the Operational Plan that relate specifically to Governance.

**Table 12. HITE-CT Governance Action Items**

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
1. Select, determine remuneration for, and hire the CEO (HITE-CT Board)	80—Recruit and hire HITE-CT Chief Executive Officer	1/6/2011
2. With Board oversight and approval, the CEO will build the HITE-CT organization	67—Develop Organizational Structures	1/27/2011
3. CEO will administer the agency’s programs in accordance with policies and objectives established by the Board, including:		
4. Implementation and periodic revisions of health information technology plan	16—Revise and Update Strategic and Operational Plans on a regular basis	Ongoing
5. Appropriate protocols for health information exchange	118—(Policy and Processes) Standards Adoption and Setting 220—Standards Adoption and Setting	2/3/2011 3/31/2011
6. Electronic data standards to facilitate the development of a statewide integrated electronic health information system for use by health care providers and institutions that receive State funding	221—Create CT HIT Operability and Data Management Standards Governance Structure and Processes	2/3/2011
7. CEO will report annually to the Governor the General Assembly and the Board on the overall status of health information exchange and health information technology in Connecticut	89—State Legislature Annual Reporting	Annually

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
8. CEO will build comprehensive governance model that expands upon the legislative definition and description of the HITE-CT Board roles and responsibilities	64—Define the Governance Model	10/14/2010
9. Advocate for HITE-CT and encourage public participation	142—Marketing & Communication	6/22/2011
10. Encourage Stakeholder participation in HITE-CT	142—Marketing & Communication 65—Establish Governance Entities and Subcommittees (develop charters and appoint members) 315—Relationship Management and Customer Service	6/22/2011  10/28/2010  Ongoing
11. Promote health technology adoption across all health care providers, payers and patients to provide the structured health information that will be enable improvement statewide	142—Marketing & Communication 108—Ongoing Coordination with other Agencies and Programs	Ongoing  Ongoing
12. Engage in strategic planning to ensure Connecticut is at the forefront of Health IT Nationwide	16—Revise and Update Strategic and Operational Plans on a regular basis	Ongoing

### 3.4 Finance

This section describes activities required to finalize and operationalize the funding model included in the Strategic Plan, and provides a cost estimate for the implementation of the Strategic Plan for a period of four years. It includes an analysis of HITE-CT staffing needs used in creating these estimates. In addition, this section describes activities to implement financial policies, procedures, and accounting controls and risk management.

#### 3.4.1 Finalize the Funding Model

The Finance Committee is currently working to finalize the most viable financing model for the State's HIE for both the initial investment and ongoing sustainability of the HIE. The Committee will report to the full Board of Directors as it completes the following tasks:

- Identify the quantifiable value of the HIE to various constituencies;
- Finalize the HIE revenue estimates for the design, development and implementation of the HIE and for its ongoing sustainability;
- Identify the universe of potential funding mechanisms for the State's HIE financial sustainability;

- Develop detailed funding scenarios and assessment formulas for the viable alternatives for initial development and implementation and ongoing financial sustainability for the HIE;
- Conduct an alternatives analysis of viable funding alternatives; and
- Finalize and institutionalize the finance mode for funding the initial development and deployment of the HIE and for its ongoing financial sustainability.

### **3.4.2 HITE-CT HIE Cost Estimates**

The approach to estimating the costs for overseeing, implementing, operating, and improving the HITE-CT statewide HIE was developed using a Total Cost of Ownership (TCO) approach. The estimated costs include the costs of the HITE-CT organization and the costs of the statewide HIE solution infrastructure and operations. It is expected that the HIE solution will be provided, implemented, and possibly operated by one or more vendors. HITE-CT will contract with one or more vendor(s) for the required products and services, and such vendor costs are reflected in the cost estimates below.

The intent of the TCO approach was to identify all costs associated with HITE-CT and the implementation and operation of the statewide HIE over a four year period. The costs include direct costs such as staff salaries and benefits, as well as indirect costs such as facilities and staff supplies. The costs also include one-time costs such as associated with the purchase and implementation of a technology solution, as well as ongoing costs such as associated with vendor provided support and maintenance of the solution.

The four year cost estimates were developed using the following inputs:

- Rule of thumb guidelines for HIE costs based on level of participation across resident and physician communities;
- Observations of other State reported costs of planned and implemented HIE initiatives; and
- Input from the HIE vendor community on establishing budgetary estimates for a statewide HIE with the size and characteristics of HITE-CT.

When developing these cost estimates the state assumed it would follow a Software-as-a-Service (SaaS) model which is likely to have the advantage of providing a fast implementation. This does not impact the total cost estimate but tends to spread the costs more evenly over the time periods under consideration.

The results of the four year costs estimates are provided in Table 13.

**Table 13. HITE-CT Four Year Costs**

<b>HITE-CT Four-Year Cost Estimates</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>TOTAL</b>
<b>HITE-CT Organization</b>					
<b>Direct Costs</b>					
Staff Salaries- 10 FTE positions	\$ 1,200,000	\$ 1,236,000	\$ 1,273,080	\$ 1,311,272	\$ 5,020,352
Benefits (35% of Salaries)	\$ 420,000	\$ 432,600	\$ 445,578	\$ 458,945	\$ 1,757,123
<b>Indirect Costs</b>					
Rent and Utilities	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 300,000
Office Equipment	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 60,000
Outreach and Communications	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 200,000
Travel	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 80,000
Legal	\$ 75,000	\$ 50,000	\$ 50,000	\$ 25,000	\$ 200,000
Supplies and Miscellaneous	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 80,000
<b>Sub-Total HITE-CT Organization</b>	<b>\$ 1,875,000</b>	<b>\$ 1,898,600</b>	<b>\$ 1,948,658</b>	<b>\$ 1,975,218</b>	<b>\$ 7,697,476</b>
<b>HITE-CT HIE Software as a Service (SaaS) Solution</b>					
<b>One-Time Costs</b>					
Implementation	\$ 1,000,000	\$ 1,000,000	\$ 500,000	\$ -	\$ 2,500,000
Interfaces	\$ 750,000	\$ 500,000	\$ 500,000	\$ -	\$ 1,750,000
Oversight	\$ 500,000	\$ 500,000	\$ 300,000	\$ -	\$ 1,300,000
<b>Ongoing Costs</b>					
Hosted Solution	\$ 2,000,000	\$ 3,000,000	\$ 4,000,000	\$ 4,000,000	\$ 13,000,000
Technical Operations	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 4,000,000
User Support	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,000,000
Enhancements	\$ -	\$ -	\$ -	\$ 500,000	\$ 500,000
<b>Sub-Total HITE-CT HIE SaaS Solution</b>	<b>\$ 5,750,000</b>	<b>\$ 6,500,000</b>	<b>\$ 6,800,000</b>	<b>\$ 5,500,000</b>	<b>\$ 24,550,000</b>
<b>Total</b>	<b>\$ 7,625,000</b>	<b>\$ 8,398,600</b>	<b>\$ 8,748,658</b>	<b>\$ 7,475,218</b>	<b>\$ 32,247,476</b>

### 3.4.3 HITE-CT Staffing Plan

A fully functional HIE Organization can require up to 24 staff to manage both operations and administration. Some of the responsibilities can be resourced by partners, while others can be resourced by contractors or vendors. The HITE-CT Board of Directors will determine the appropriate and affordable staffing for the agency during the initial establishment and subsequent operation of an HIE. Table 14 presents the levels of responsibilities and detailed functions associated with an operational HIE.

**Table 14. HITE Staffing Recommendations**

Level	Function	FTEs
<b>HITE-CT Leadership</b>		1
	Strategic road map and business plan (project) approval	
	Multiyear budget development and approval	0.5
	Major project oversight and accountability	0.5
	Integration and Culture	
	Standards approval	
	HITE-CT Scorecard, Satisfaction, Quality and Value Review and Accountability	
	HITE-CT Board relationship	0.5
<b>HITE-CT Strategy</b>		1
	Annual Business plan development	0.5
	Requirements analysis	1
	HITE-CT Road map development	
	Health Informatics and NHIN lead	0.5
	Clinical Informatics Leadership	0.5
	Performance Scorecard Development, Usage and User Satisfaction Survey	0.5
	Evaluation and Benefits Demonstration	
<b>Project Management Office</b>		1
	Project Portfolio oversight	
	Project Management	1
	Project Reporting	0.5
	Contractor Management	0.5
	Vendor Management	0.5
<b>Technology</b>		1
	Application Architecture Development	0.5
	Data Architecture Development	1
	Product Procurement lead	0.5
	Interface and Integration Design	

Level	Function	FTEs
	IT Security	0.5
	Standards Development	0.5
<b>Production</b>		1
	Implementation Lead	
	Change Management	0.5
	Data load	1
	Data Quality Management	
	Maintenance	1
	Interface Maintenance	
	Subscriber Support	0.5
	Participant training	
<b>Legal/Policy</b>		1
	Legal Officer	
	Chief Privacy Officer	1
	Health Records	0.5
	Contracting	
	External Policy and Regulation Development and Coordination	
	Enterprise Risk Management	0.5
<b>Participant Support</b>		1
	Relationship Management	
	HIE Marketing and Outreach	0.5
	ARRA Coordination	0.5
	Communications	
	Quality Reporting and Analytics	
<b>Administration</b>		1
	Long Term Sustainability Model Development	
	HIE Financial Management	0.5
	Human Resources	0.5
<b>Totals</b>		<b>25</b>

### 3.4.4 Controls and Reporting

HITE-CT Connecticut will establish and maintain the necessary financial & reporting structure and audit & control mechanisms required for establishing and sustaining the operation of the statewide HIE. HITE-CT will manage and track spending for the HIE and will put in place policies, procedures, and controls compliant with Generally Accepted Accounting Principles (GAAP) and relevant OMB circulars.

HITE-CT will engage an independent auditor annually. The auditor will perform an annual audit to ensure proper procedures and controls are in place and to ensure compliance with GAAP and OMB circulars. HITE-CT will be responsible for tracking and reporting all spending associated with the statewide HIE efforts. HITE-CT will monitor spending through budget process, monthly financial reporting, and review and approval of all invoices.

HITE-CT will complete reports due to ONC as related to the overall progress of the HIE, use of funding, and other reports as required. HITE-CT will ensure that mechanisms are in place to:

- Comply with audit requirements of the Office of Management and Budget;
- Produce and submit annual quarterly and annual financial reports;
- Produce and submit progress reports to ONC; and
- Produce and submit quarterly reports as specified in section 1512(c) of the Recovery Act, including detailed information on any subcontracts or sub-grants awarded.

### **3.4.5 Risk Management**

The HITE-CT will be responsible for managing risks of the statewide HIE implementation and operations, including management of vendors associated with the implementation and operation of the HIE solution. Risks will be managed at every major phase of HIE life cycle, including strategy, planning, implementation and operations phases. HITE-CT may choose to bring in an independent third-party advisor to provide program assurance services in addition to the evaluation services described in the Evaluation Approach section. The third-party advisor would bring experience and insight to managing large, complex programs in the health care and public health environments to help ensure critical risks are proactively managed and that the project remains on track to achieve its desired outcomes.

The broad categories of risks to be managed by the PMO include the following.

- **Benefit Risk:** Defined as risks, that when the program is complete, of not delivering the benefits as expected at the outset of the effort and/or as revised over the course of the project. Mismanagement of these risks results in a large amount of money spent without the expected benefits.
- **Budget Risk:** Defined as risks that prevent the project from being completed on time, on scope, and on budget. Mismanagement of these risks results in projects that are significantly over budget or projects that run out of funding before addressing the project objectives in full.
- **Execution Risk:** Defined as risks arising from not performing the correct tasks, performing them in the wrong order, and/or performing them incorrectly. There are known best practices for executing complex programs and technology projects. Assessing completed, in process, and planned tasks for completion and quality ensures what is done is truly complete and what is planned for is on track. When mismanaged, these risks often present significant issues at the point of a “go live” for the new HIE solution.
- **Stakeholder Risk:** Defined as risks associated with stakeholder disengagement. Understanding and managing the impact to each distinct stakeholder community is critical. When mismanaged, stakeholder views and needs are often not taken into account, resulting in dissatisfied and disengaged stakeholders, which in turn has a significant impact on successfully meeting program objectives and desired outcomes.

- **Organizational Risk:** Defined as the risks associated with organizations not being ready to benefit from a new solution or capability once it is deployed. Most of the risk has to do with effectively managing the complexities of change within organizations so they are in a position to benefit from newly deployed capabilities. Mismanagement of these risks often leads to new solutions that are not adopted and put to use by the end user communities.

An initial analysis of risks is included in the Operational Plan Master Schedule and Risk Analysis section that follows.

### 3.4.6 Finance Action items

Table 15 summarizes the actions included in the Operational Plan that relate specifically to Finance.

**Table 15. HITE-CT Finance Action Items**

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
1. Consider scenarios and combinations for ongoing sustainability	18—Develop Full Multi-year Funding and Sustainability Model	12/10/2010
2. Develop a three year financial sustainability model based on a gradual implementation of services an ongoing support	18—Develop Full Multi-year Funding and Sustainability Model	12/10/2010
3. Establish clear financial controls and reporting to ensure that the financing of HITE-CT is economical and sustainable over time	74—(Develop Organizational Structures) Administration 87—(Reporting) Determine Requirements, Measures and Systems 115—(Policies and Processes) Finance	1/27/2011 2/17/2011 12/23/2010
4. Ensure required matching funding for the cooperative agreement is available along with other short and medium term funding sources as required	167—Funds Acquisition	8/29/2013
5. Establish and maintain necessary project financial and reporting structure, audit and control mechanisms required for establishing and sustaining HITE-CT	74—(Develop Organizational Structures) Administration 87—(Reporting) Determine Requirements, Measures and Systems 115—(Policies and Processes) Finance	1/27/2011 2/17/2011 12/23/2010
6. Ensure mechanisms are in place and maintained to:	74—(Develop Organizational Structures) Administration 87—(Reporting) Determine Requirements, Measures and Systems 115—(Policies and	1/27/2011 2/17/2011

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
	Processes) Finance	12/23/2010
a. Comply with audit requirements of the Office of Management and Budget		
b. Submit annual Financial Status Reports		
c. Submit semi-annual progress reports to ONC		
d. Submit quarterly reports as specified in section 1512(c) of the Recovery Act, including detailed information on any subcontracts or sub-grants awarded		
7. Continue to evolve the risk analysis included in the Operational Plan as part of the ongoing planning process	16—Revise and Update Strategic and Operational Plans on a regular basis	Ongoing

### 3.5 Technical Infrastructure

#### 3.5.1 Standards and Certifications

HITE-CT will specify and adopt health care related interoperability and data interchange standards for use within Connecticut. These standards will facilitate current and future use of HITE-CT services. The agency will also be responsible for ensuring these standards and related guidelines are widely disseminated, understood, and adopted.

HITE-CT will endeavor to ensure that all standards deployed by the statewide HIE are accepted by HHS and will support widespread interoperability among providers in Connecticut and with the NHIN. NHIN includes a collection of standards that will be interoperable between a wide range of entities, including standards such as ASC X12 for administrative transactions, NCPDP SCRIPT for ePrescribing, HITSP C32 construct including HL7 CDA, ASTM CCR and others, and terminologies such as ICD, CPT and SNOMED. HITE-CT will leverage this national agreement on structured communication and align with it as closely as possible.

As part of the technology evaluation and procurement process, HITE-CT will complete an assessment of the technology for compliance with HHS standards and will only integrate technology that meets these requirements. HITE-CT will be substantially influenced by the Standards and Certification criteria published in July 2010 as the Final Rule<sup>24</sup>.

Policies making any standards mandatory for HITE-CT users will be enacted by the HITE-CT Board of Directors in consultation with the DSS, REC and other partners. Lessons learned regarding the technical infrastructure and other aspects of data sharing will be communicated directly with ONC and through collaboration with the REC.

Connecticut will adopt Standards in the following categories:

- Vocabulary Standards—standardized nomenclatures and code sets used to describe clinical problems and procedures, medications, and allergies;
- Content Exchange Standards—standards used to share clinical information such as clinical summaries, prescriptions, and structured electronic documents;

- Transport Standards—standards used to establish a common, predictable, secure communication protocol between systems; and
- Privacy and Security Standards—authentication, access control, transmission security which relate to and span across all of the other types of standards.

The adopted standards are likely to include all those adopted in the ONC Final Rule and are expected to include:

- HITSP C32 construct;
- Health Level 7 (HL7);
- Digital Imaging and Communications in Medicine (DICOM);
- Electronic Data Interchange X12 (EDI X12);
- National Council on Prescription Drug Plans (NCPDP);
- Standard Object Access Protocol (SOAP);
- Representational State Transfer (REST);
- electronic business Extensible Markup Language (ebXML);
- Secure Sockets Layer (SSL);
- Transport Layer Security (TLS); and
- Connecticut Enterprise Architecture—Technology Architecture (CTEA-TA).

HITE-CT views some standards as having more relevance to the early phases of the HIE implementation than others. HITE-CT subscribes to the HL7 (HL7.org) Clinical Document Architecture (CDA), the HL7 standard that provides an exchange model for clinical documents (such as discharge summaries and progress notes). By leveraging the use of XML, the HL7 RIM and coded vocabularies, the CDA makes documents both machine readable, so they are easily parsed and processed electronically, and human readable, so they can be easily retrieved and used by the people who need them. The CDA is capable of informing decision support and other sophisticated applications, while retaining the simple rendering of legally authenticated narrative.

HITE-CT also views the HL7 Continuity of Care Document (CCD) as important to capture a patient's health summary. CCD adds content to the CDA structure by describing various document sections such as patient demographics, insurance information, diagnosis and problem list, medications, allergies and care plan that collectively can represent a snapshot of a patient's health data. The CCD is the result of a collaborative effort between the HL7 and ASTM organizations to harmonize the data format between ASTM's Continuity of Care Record (CCR) and HL7's Clinical Document Architecture (CDA) specifications. HITE-CT plans to cater to both CCD and CCR standards described in the Final Rule.

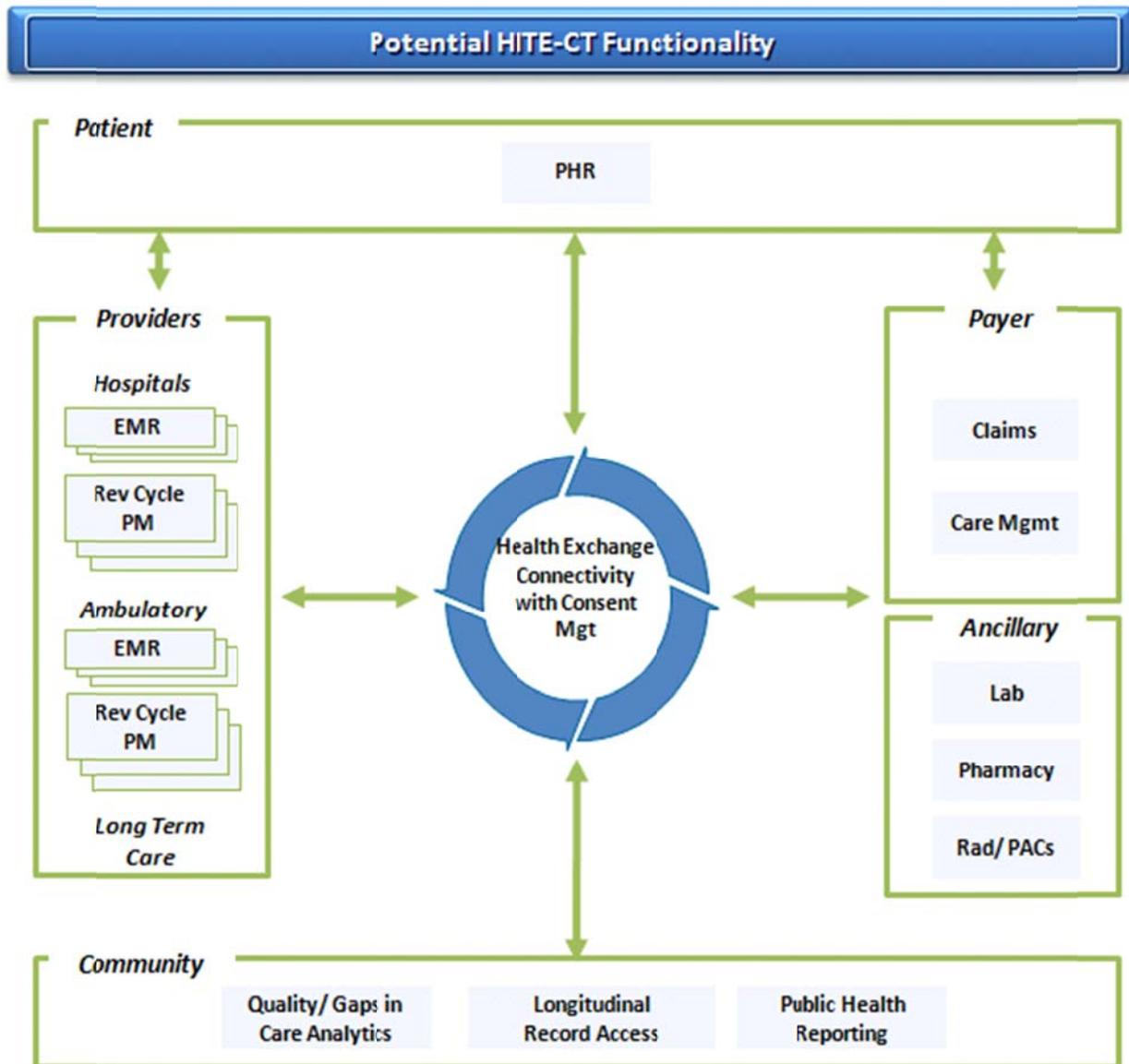
### **3.5.2 HITE-CT Technical Architecture**

There are a number of established HIE or data sharing systems in Connecticut that range from fully operational HIEs to remote systems operations. To include all of the established systems while developing consistent standards and processes, the health care community within Connecticut must collaborate to choose an appropriate architecture that meets current and future needs.

HITE-CT will lead the effort to define comprehensive enterprise architecture, including standards considerations, and document the full scope of required HITE-CT technology

infrastructure and services. The architecture will permit the exchange of data between entities that house patient data and authorized health care providers in a manner that will accommodate users at various stages of technology adoption. The figure below provides a high level view of HITE-CT's initial target functional capabilities.

**Figure 10. HITE CT Initial (First 3 Years) Target Functionality**



Starting with the requirements and technical conceptual architecture developed as part of the State HIT Plan, HITE-CT will follow the Connecticut Enterprise Architecture—Technology Architecture (CTEA-TA) processes and develop a "Common Requirements Vision" including the following:

- Statewide HIE and HIT Environmental Trends;
- HITE-CT Business Strategies;
- Environmental Trends/HITE-CT Business Strategies Relationship Matrix;
- HITE-CT Information Requirements;
- HITE-CT Business Strategies/HITE-CT Information Requirements Relationship Matrix;
- Information Technology Requirements;
- HITE-CT Information Requirements/IT Requirements Relationship Matrix; and
- Summary graphic Vision including Business, Information and Technology viewpoints.

This will provide an HITE-CT Solution Architecture described from the following viewpoints.

- **Business Architecture:** A representation of the requirements, principles and models for the enterprise's people, financials, processes and organizational structure. The goal of describing Business Architecture is to ensure that changes and enhancements to business functions, process, financials, people and organizational structure are fully optimized along with information and technology, in support of the business strategy.
- **Information Architecture:** That part of the architecture process that describes (through a set of requirements, principles and models) the current state, future state, and guidance necessary to flexibly share and exchange information assets to achieve effective enterprise change.
- **Technology Architecture:** How technology components from multiple technology domains are deployed within technology patterns to provide the required technology services and the technology standards complied with.

### **3.5.2.1 Technology Objectives and Guidelines**

The key objectives that will be pursued in the HITE-CT architecture will include the following.

- An open and standards-based architecture that can address the key performance, robustness, economic, semantic as well as the privacy and security challenges associated with the deployment of EHR solutions in Connecticut.
- A framework where solutions can evolve progressively to meet the ultimate goal of a network of interconnected HIE infrastructures. This framework needs to allow for solutions to concentrate first on sharing clinical information between a limited number of participants and then grow to include all health organizations within the state.
- Clearly delineated standards required for interoperability. Point of Service (PoS) applications must be able to rely on standards-based communications to connect and obtain services from the HIE.
- The exchange and interpretation of security, privacy, transactional, policy and administrative metadata similarly between systems connected to the HIE.

Systems that are built to change are more valuable than systems that are built to last, and, in reality, are the only ones that last. A Service Oriented Architecture (SOA) is used to build systems that are intended to change. Connecticut has determined that the HITE-CT system requirements will only be properly satisfied by an SOA solution. Specifically, the proposed solution must adhere to the following five principles.

- **The system must be modular**—Each component is a service consumer, service provider or both. Modules will exist at a variety of levels of granularity (e.g., at a business process level such as certification and benefits issuance to simplify alignment with key business processes and at lower levels such as data services for a single database table to enable reuse across the application and the whole architecture). As with business services, the capabilities to specialize, mix and match, and swap components are key benefits.
- **The modules must be distributable**—Each module must be able to run on disparate computers and communicate with each other by sending messages over a network at runtime. This will enable edge servers at providers' and HIE sites.
- **Module interfaces must be clearly defined and documented**—Software developers write or generate interface metadata that specifies an explicit contract so that another developer can find and use the service (which helps enable loose coupling).
- **Modules must be swappable**—A module that implements a service can be swapped out for another module that offers the same service and interface. This is an aspect of loose coupling and it enables incremental maintenance and enhancements and means that HITE-CT's technology capabilities can be easily evolved over time.
- **Service provider modules must be shareable**—Modules are designed and deployed in a manner that enables them to be invoked successively by disparate service consumer modules engaged in somewhat diverse, although partially related, business activities.

HITE-CT will need to continuously adapt and evolve the HIE capability as the Connecticut health care needs of the diverse customer community evolves. The fundamental concepts of modularity, reuse of in-house or externally developed IT modules and services, and ubiquitous connectivity through the Internet position will be maintained. The architecture and resulting requirements have not yet been defined. The HIE Services, Interoperability and Privacy described below provide only a flavor of what will be included and should not be seen as comprehensive or definitive.

### 3.5.2.2 HITE-CT HIE Services

Categories of services that will be represented in the HIE System Architecture will include but not limited to those described in Table 16.

**Table 16. Core HITE-CT Service Categories**

Service Category	Description
<b>Registries Data &amp; Services</b>	This category groups the services that manage the information about people, places, and resources that need to be identified uniquely in order to compile health event information in an EHR. It includes people acting as clients or providers of care, as well as locations where health events occur and terminologies as key resources required making normal the meaning of information kept about such health events.

Service Category	Description
	<p>Client registry services are integral to the successful operation of the HITE-CT to ensure that clients, whose information is recorded, are uniquely identified and their data is consistently managed and never lost.</p> <p>Provider registry services are primarily used to validate the unique identity of a provider that is involved in the provision care to a patient, usually in the context of a transaction emanating from a point of service application.</p>
<b>EHR Data &amp; Services</b>	<p>This category groups all the core EHR data repositories that make up an Electronic Health Record Solution. This includes the Shared Health Record repository that keeps the basic clinical profile information that any caregiver would expect to find in a clinical record such as blood type, allergy, immunization profile, critical observations, diagnosed chronic conditions, health encounter summaries, diagnosis, etc</p>
<b>Ancillary Data &amp; Services</b>	<p>This includes the data shared about orders and results for key clinical domains of information, such as diagnostic imaging, drug information, laboratory tests information and prescription data.</p>
<b>Community Data &amp; Services</b>	<p>This category groups services that generally require the presence of core EHR data and are able to bring added value to such data to support specialized functions that are part of the health system. Current examples include services related to Public Health Surveillance, like outbreak management and Communicable Disease Reporting. In the future, this group of services could incorporate capabilities such as enterprise scheduling services.</p>
<b>Data Warehouse Services</b>	<p>This category groups services that enable a separate data repository capability where data is compiled and classified based on diverse requirements for aggregation and consolidation. The objective of these services is to support data analysis research and reporting that could not otherwise be served directly by the operational data repositories that support online transaction processing, or where de-identification is required</p>
<b>Longitudinal Record Services (LRS)</b>	<p>The LRS capabilities orchestrate services that provide a coordinated and centralized view of the data in the HIE for any single patient/client and coordinate and execute any transaction that needs to have a longitudinal perspective of the clinical data of a patient/client. This category of services include:</p> <ul style="list-style-type: none"> <li>■ Services to manage and record patient data within the HIE repositories and registries</li> <li>■ Record Locator Services (RLS) to pull appropriate records from different repositories</li> <li>■ Business rules services to perform data validation</li> <li>■ Assembly Services to format HIE response information</li> <li>■ Normalization services to standardize data content</li> <li>■ Orchestration services to manage the process flow of an HIE interaction</li> </ul>
<b>Business Services</b>	<p>This category groups services that enable the HIE to function administratively. These services include:</p> <ul style="list-style-type: none"> <li>■ Identification services</li> <li>■ Authentication services</li> <li>■ Digital signature services</li> <li>■ Consent management services</li> </ul>

In addition to the core services, the HITE-CT architecture will include and describe the following components.

**Point of Service Application** is the clinical application software that operates at many locations where health care services are delivered to patients/clients. There are a myriad of PoS applications including:

- **Electronic Health Record (EHR)**—applications used by physicians for recording and recalling medical information for patients
- **Hospital Information Systems (HISs)**—transaction systems for running hospitals
- **Picture Archiving and Communications (PACs) systems**—Systems for storing and managing clinical images
- **Laboratory Information Systems (LIS)**—Systems to support the workflows of laboratories and integrate with EHRs

These applications may have human—computer interfaces or be medical equipment, generating or collecting data about a client. Some of this data is deemed relevant for sharing and is copied to the HIE by way of an active communication interface. It is expected that PoS applications will evolve to not only feed data to the HIE but also to be able to access, download and integrate HIE data into the data displayed in the PoS user interface.

HITE-CT will not fund or implement PoS applications. These are the responsibility of HITE-CT partners, including the REC, IDNs and operational health information exchanges. Considering the criticality of physician EHR adoption to the success of the HIE as a whole, HITE-CT will focus on understanding the actions it can take to promote certified EHR adoption in Connecticut.

**Repositories** store all kinds of data required by HITE-CT and its provider partners. Types of repositories that HITE-CT may implement include, but will not be limited the following.

- **XDS Repositories** that store all manner of documents, but is primarily focused on the storage of Continuity of Care Documents/Records (CCD/CCR).
- **Clinical Data Repositories (CDR)** that store discrete clinical information. Using an XDS parser, XDS documents can be parsed for discrete clinical information and stored in the CDR or made available to other applications. By maintaining or enabling CDRs, HITE-CT will create tremendous opportunities for discovery and learning. For example, discrete data can be used to generate patient utilization reports that help identify frequent ED utilization.
- **Domain repositories** that store, maintain and provide subsets of clinical information that pertain to the clinical picture of a patient/client such as drugs or medication profiles, laboratory orders and tests results, shared diagnostic imaging orders and results including image repositories.
- **Data Warehouse and Data Marts** that store clinical and administrative data integrated and aggregated to support quality reporting and analytical needs.

**Master Data Registries** provide unique and unambiguous identification of key entities in the HIE: clients, providers, service delivery locations, terminologies and documents. Registries can be used actively by both PoS applications (for their local use) and the different components of the HIE. Each registry has the ability to manage and resolve the identification of singular entities using multiple identifiers. The registries hold, as one of those unique identifiers, internal unpublished identifiers unique to a particular EHR instance, that are used to represent the specific client, provider, or location data (or any other key system entities) in the HIE repositories.

- **Client Registry** (sometimes known as Master Patient Index): The system where current patient health identification numbers, demographic information (i.e., name, address, etc.) is securely stored and maintained and made available to other systems and users that interact with an HIE infrastructure. The existence of an HIE Client Registry is predicated upon the definition and existence of State level strategies, plans and associated governance policies for assigning and managing unique identifiers to support the delivery of EHR services. The Client Registry plays two main roles in the HITE-CT HIE infrastructure.
  - It is the single authoritative source and, as to the extent possible and practical, the only source of demographic information about persons recognized as clients/patients of the various health systems. The bulk of transactions handled in an HIE infrastructure are patient-centric, so this registry is one of the foundational pieces of the HIE.
  - It is the engine that allows discrimination between multiple potentially overlapping unique data sets. Its role is to distinguish individual patients from limited and often mistakable data sets; to ensure that each patient is associated with all of his or her data, and only his or her data.
- **Provider Registry** (sometimes known as the Master Provider Index): A provider is a person or organization that is authorized to provide goods or services patients in Connecticut and a member of a recognized authority or agency who also participates in the HITE-CT.
  - The HITE-CT Provider Registry will be a single directory service providing a comprehensive and unambiguous identification of all providers practicing in Connecticut including doctors, dentists, pharmacists, nurses, health records professionals, lab clinicians, diagnostic imaging technicians and any other health care professionals. The HITE-CT Provider Registry will securely store and maintain health care providers' information (i.e., name, address, individual and practice licenses, etc.) and will make it available to other systems and users that interact with the HIE .
  - The existence of the HIE Provider Registry is predicated upon the definition and existence of State level strategies, plans and associated governance policies for identifying authorities, professional associations and other licensing bodies in charge of the management of unique identifiers, practice rights and other identifying or demographic data on providers. HITE-CT will begin this process with a dialogue with the Department of Public Health in order to leverage their physician licensure database and their credentialing process.
  - HITE-CT plans to leverage the work of the NESCSO in the development of a Regional Master Provider Index.

The **Exchange Gateway** acts as a layer to isolate the HITE-CT infrastructure from the world of the PoS applications. In creating this layer of independence, the Gateway isolates any of the PoS applications from the intricacies and complexities associated with the connectivity and integration between the large information systems that will make up the HITE-CT infrastructure. As an example, once a PoS application has implemented a set of interfacing standards to communicate with the HITE-CT Exchange Gateway, it will be able to send requests for information and obtain responses.

Within the HITE-CT infrastructure, an intricate network of systems will manage multiple calls between systems that may have to occur in order to fulfill a comprehensive response to the

request. The calling PoS application will be isolated from these interactions for simplicity and security, and it instead will only be aware of a single bulk response from the HITE-CT through the Exchange Gateway. As time goes by, the HITE-CT infrastructure will likely see a lot of its components evolve as well. New data domains will appear, new registry capabilities will appear and some components may be replaced with enhanced ones. The isolation enabled by the gateway ensures that these changes will have minimal impact on the transaction interfaces already implemented in any PoS application.

The Exchange Gateway also offers a platform within HITE-CT to centralize many common reusable functions so that they can be applied consistently for any system participating in HITE-CT. For example, HITE-CT will implement a unique and common authentication service to be used throughout the system that will be applied consistently to any transaction coming through the Gateway.

The **Clinical Portal** will be a Web-based clinical application that allows providers to access their patients' longitudinal record contained in the HIE. Below are some of the important portal features.

- Access Controls and Consent Management, which is critically relevant to the use any data access tool in any field that touches personal health information. Features that allow for the management and application of privacy related requirements and policies need to exist as integral and not second thought add-on capabilities to these portal environments.
- Personalization, which is a critical feature of the clinician portal. Personalization allows each physician to have his/her specific view of what is seen and how it is displayed. Power users of the system are more likely to customize their view to enhance workflow and get quick and easy access to patients' data.
- Workflow Management, which is the ability to appropriately pull disparate information together in a productive view. Data coming from several systems can be displayed on one view for the physician or clinician. This assists with medical decision making, time spent finding information and ease of use. The customization of workflow by role is considered an important portal feature.
- Single sign on (SSO), which is a key benefit for users. Clinicians do not want to individually authenticate to every system he or she looks for information.
- Context Management, which provides a time saving capability. It is unproductive for clinicians to look for an individual patient in separate systems and it also avoids the possibility of errors that can occur due to the different approaches systems have to identifying patients.
- Integration broker capability, which allows management of business partner relationships with the potentially thousands of cooperating entities. This will allow a high degree of self-service for trading partners, reducing the personnel costs for setting up and maintaining secure communication.

**Public Health Systems (PHS)** include public health laboratory systems and immunization management systems. Public health clinical events can occur in multiple settings and be performed by a variety of providers using a variety of PoS system types. Key public health information types to be shared in the HIE are reportable diseases and immunizations which are communicated between PHS and PoS applications via structured HL7 messages from public health labs and immunization management systems. HITE-CT expects that commercial software applications will have these functions and that HITE-CT will provide a portal to access these services.

### **3.5.2.3 Interoperability**

The primary purpose of the HITE-CT is to provide interoperability between providers, hospitals, local and national health information exchanges, state health departments and ancillary service partners. HITE-CT will connect to and accommodate or assist the operations of these participants via the array of services described above.

HITE-CT proposes to implement a hybrid model for data sharing that has certain centralized elements, supports distributed elements that obviate the need for organizations to expose their data in its entirety to another stakeholder and adds the concept of edge proxy servers that act as a repository for the data of a specific member organization operated under the control of that organization.

HITE-CT must be able to communicate by way of exchanging messages across any number of systems. HITE-CT will take an incremental approach to messaging interoperability and will begin with messaging that is only machine readable in simplistic ways but will encourage incremental improvements in the quality and structure of data without the need to replace established interfaces. This will allow HITE-CT to obtain early successes through more rudimentary forms of information sharing, but realize the most important long term benefits of clinical information interchange—those that can be achieved when coded structured data can be exchanged. Over time, HITE-CT will:

- Establish semantic interoperability principles, guidelines and standards so that all participants in the HIE can agree on the semantic meaning of the shared information placed and accessed in the HIE repositories; and
- Define the comprehensive interoperability needs between the core components and all other components of the HIE and ancillary services so that they can work in a coordinated fashion to deliver HIE services.

The HITE-CT will establish a reference framework to allow for discussions and definitions to take place on the operational requirements of an EHR solution. This includes:

- Policies, guidelines and agreements within the area of coverage where the HIE infrastructure will operate and where multiple PoS organizations will be in scope;
- Policies, guidelines and agreements for the organizations and entities operating different parts of the HIE infrastructure;
- Policies, guidelines and agreements between entities and governing authorities that maintain and operate HIE infrastructure; and
- Policies, guidelines and agreements with external governing authorities that are touched by the scope of an HIE service in Connecticut, another state or the NHIN.

In addition, for the purposes of providing HIE services, HITE-CT may augment Connecticut adopted standards with consideration of the IHE IT Infrastructure domain<sup>25</sup> and, at a minimum the following profiles:

- Patient Identifier Cross Referencing (PIX) for creating Global Unique Identifiers (GUIDs) and mapping to them;
- Cross-Enterprise Document Sharing (XDS) for storing and sharing documents; and
- Patient Demographics Query (PDQ) for looking up information about patients that are not registered in the querying system.

As health record banks and personal health records take shape, HITE-CT will also look to deploy the XPRH IHE integration profile, which supports interoperability between personal health record systems used by patients and the information systems used by providers. HITE-CT will also consider patient authentication standards to ensure accurate and reliable delivery of patient records into health record banks.

### **3.5.2.4 Privacy**

HITE-CT views the security of the data as paramount. In the first year of operation, HITE-CT will define what security rules need to be implemented for the exchange of electronic patient information. Vendor technology partners will be required to demonstrate that their solutions meet or exceed the security requirements. Participation agreements stipulate that users comply at a minimum with the HIPAA requirements.

In principle, HITE-CT will rely on organizational trust established by operating agreements and governance of the HIE to determine who can view what clinical data. To illustrate: HITE-CT 'Member A' trusts that any inquiry coming from HITE-CT 'Member B' is from a user with the privilege and an appropriate need to know. HITE-CT will establish cross-member authentication security protocols to ensure that the inquiry that putatively comes from 'Member B' is authentically coming from an authorized system operated by 'Member B'. HITE-CT will take on the obligation to verify the identity and maintain authentication information for portal users.

Additional privacy methods and standards that HITE-CT may use are listed below.

- The IHE Audit Trail and Node Authentication (ATNA) profile establishes security measures including both TLS secure transactions and security audit logging using an audit record repository.
- HITE-CT will require edge servers to keep audit logs for their system and will keep audit logs for the HITE-CT portals.
- HITE-CT will initially use consent tracking mechanisms such as IHE Basic Patient Privacy Consents (BPPC) as the mechanism for the users to record the patient privacy consent(s). Consent tracking policies are a method to mark documents published to document sharing repositories with the patient privacy consent that was used to authorize the document, and a method for recipients to enforce the privacy consent appropriate to the access and use of the document.
- HITE-CT will establish non-repudiation by requiring that the system identified as the data source apply a digital signature to each message. Likewise, when a data source, such as a clinical laboratory makes use of the facilities of the HIE to pass a report to the system of a care delivery organization, HITE-CT will require the data source to be able to prove that it met its legal or contractual requirement for timely delivery of the data through an acknowledgment from the receiving system that will also be digitally signed.

HITE-CT will also ensure that it follows industry best practices in physical and network security in all data centers housing its data. These include:

- Physical machine security;
- Network security configured for high availability and minimum vulnerability;
- Network transfer security and reduced threats of third party interception of sensitive data;
- Platform and application security; and
- Authentication and authorization.

### 3.5.3 Technology Deployment

The deployment of the Connecticut HIE is intended to incrementally ensure that participants can meet the requirements of meaningful use where a mature HIE capability is required. Efforts to align functionality of the HIE will closely parallel the planned activities of the NHIN.

Connecticut has determined the initial prioritization of products and services and has grouped these into a number of releases as guidance for the operational planning process shown in Table 17.

**Table 17. HITE-CT HIE Releases**

Planned Service Releases	Services Planned
<b>Initiation and HIE Stand-up</b>	<ul style="list-style-type: none"> <li>■ Procurement and contracting for services to build, maintain and operate the statewide HIE infrastructure</li> <li>■ Initial phase to build a statewide infrastructure that will support connections to local HIEs                             <ul style="list-style-type: none"> <li>□ Network Services</li> <li>□ Master Patient/Provider Indexes and Record Locator Service</li> <li>□ XDS Repository</li> <li>□ Gateway</li> <li>□ Clinical Portal</li> </ul> </li> </ul>
<b>Release 1: Continuity of Care Document/Record (CCD/CCR) and Public Health Reporting</b>	<ul style="list-style-type: none"> <li>■ Interfaces to main EHRs supported by the HIE</li> <li>■ Ability for connecting providers, payers and ancillary service providers to exchange Continuity of Care Documents</li> <li>■ Clinical data within the statewide HIE automatically feeds public health reporting needs</li> </ul>
<b>Release 2: Quality/Gaps in Care Reporting</b>	<ul style="list-style-type: none"> <li>■ Main focus of this phase is development and deployment of metric-based quality reporting and the “care gaps”</li> <li>■ Will include access to and integration with data from other sources, e.g., State systems, ePrescribing hubs and services, etc.</li> <li>■ Further strengthening of the underlying infrastructure services including additional EHR interfaces</li> <li>■ Further develop the various dimensions of CCD/CCR to allow for additional useful data interchange</li> <li>■ Include ancillary services orders/results offering integration with those service providers in the State with standards compliant systems that subscribe to the HITE-CT statewide HIE</li> </ul>

Planned Service Releases	Services Planned
<b>Release 3: Personal Health Records</b>	<ul style="list-style-type: none"> <li>■ Main focus of this phase is to support consumer (patient) access to their information by harmonizing interfaces to PHR services</li> <li>■ May include ancillary services orders/results—to be decided based on agreeing a common approach across enough providers</li> </ul>

HITE-CT will be compliant with United States Department of Health and Human Services standards and implementation specifications as described in the standards and certification section above.

Connecticut is undertaking planning coordination efforts with federal care delivery organizations, including the Department of Veterans Affairs, and the Department of Defense. HITE-CT has begun to craft an approach to reach out to key stakeholders from these organizations with the purpose of coordinating their participation in state HIE activities.

### 3.5.4 Technical Infrastructure Action items

Table 18 below summarizes the actions included in the Operational Plan that relate specifically to the Technical Infrastructure.

**Table 18. HITE-CT Technical Infrastructure Action Items**

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
1. Complete an assessment of the technology in the State for compliance with HHS standards	193—Test out each technology component with an independent technology and market assessment	12/30/2010
2. Adopt nationally recognized standards and protocols, aligned with those recommended by HHS, to enable the interoperability and connectivity with existing investments of current EHRs and HIEs, envisioned future regional and local health information exchanges and hospitals. These standards and protocols must align with and support HITE-CT's policies for data sharing, interoperability, privacy and security.	222—Define Required Standards  223— Develop Standards Proposals and Obtain Approval via the Governance process	2/3/2011  3/3/2011
3. Ensure that standards and related guidelines for interoperability and data interchange standards are widely disseminated and understood.	233—Standards Communication and Support	3/31/2011
4. Enact policies making any required standards mandatory for the HITE-CT users.	118—Standards Adoption and Setting	2/3/2011
5. Work with the Regional Extension Center, DSS and directly with providers to encourage and support the adoption of certified EHR systems, connection to/use of e-Prescribing services and connection/use of electronic delivery of Lab results.	26—(Market Analysis & Deployment Planning) Meaningful Use Support  318—Relationship Management for Meaningful	3/2/2012  8/2/2012

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
	Use Support	
6. Lead the effort to define a comprehensive enterprise architecture (including standards considerations) and document the full scope of the required HITE-CT technology infrastructure services.	182—HIE Solution Architecture	1/6/2011
7. Ensure that the architecture is in alignment with DOIT's Connecticut Enterprise Architecture—Technology Architecture (CTEA-TA) standards.	182—HIE Solution Architecture	1/6/2011
8. Follow the DOIT CTEA-TA processes and develop a "Common Requirements Vision"	184—Develop the HIE Common Requirements Vision (CRV)	11/18/2010
9. Determine HITE-CT's procurement strategy for the acquisition of products and services required to establish the infrastructure and run the HIE in accordance with the enterprise architecture.	201—Establish Procurement Strategy and Procurement Process	12/9/2010
10. Connect to and accommodate and/or assist the operations of participants in the use of the HITE-CT statewide HIE and associated facilities and services.	258, 269, 287, 298, (and similar within the roll-out plans of each release)—Participant Technology, Process and Change Management Preparation 315—Relationship Management and Customer Service	

## **3.6 Business and Technical Operations**

### **3.6.1 Stage 1 Meaningful Use Focus**

A variety of HIT-support and State level HIE services will be developed, added and rolled-out through HITE-CT in line with the overall priorities described in the Strategic Plan. The specific capabilities of these critical services will be aligned with the evolving focus for Federal Electronic Health Record Meaningful Use incentives such that Connecticut's program leverages, aligns with and strongly supports and reinforces the Federal incentives program.

Initially, and as the HITE-CT HIE infrastructure is being acquired and implemented, these developing capabilities will be achieved in parallel to the EHR Incentive Program's requirement for providers to demonstrate achievement of Stage 1 Meaningful Use measures. Consistent with national priorities, Connecticut has prioritized providing HIT support for achieving Meaningful Use in the following three areas:

- E-Prescribing
- Receipt of structured lab results
- Sharing patient care summaries across unaffiliated organizations

#### **3.6.1.1 E-Prescribing**

In parallel with standing up the HIE and the Release 1 roll-out and in cooperation with the DSS Medicaid Incentive program and the REC, HITE-CT will provide outreach and support to help providers make use of commercially available e-Prescribing services.

HITE-CT will work with the main e-Prescribing consolidation service providers operating in Connecticut, including SureScripts to create and maintain records of pharmacies and payers that are connected for e-Prescribing and information regarding the services they offer.

HITE-CT will act as a catalyst for the adoption of e-Prescribing by providing outreach for providers, including advice on the options available, such as the functionality and integration facilities supported.

#### **3.6.1.2 Receipt of structured lab results**

In parallel with standing up the HIE and the Release 1 roll-out, and in cooperation with the DSS Medicaid Incentive program and the REC, HITE-CT will provide outreach and advice for end-to-end connections with a provider's Lab service of choice. That laboratory service can then integrate with the provider's EHR systems and deliver lab results electronically in compliance with related Connecticut standards.

DPH is surveying Connecticut's licensed labs to discover the extent to which they offer orders and results delivery via HL7 standard messages with providers EHR systems. HITE-CT will continue to work with Connecticut's labs to create and maintain advice to providers that will facilitate their ability to meet meaningful use requirements.

#### **3.6.1.3 Sharing patient care summaries across unaffiliated organizations**

The first priority of the new statewide infrastructure will enable use cases addressing providers need to exchange care summaries in line with Stage 1 Meaningful Use requirements. In parallel with standing up the HIE and the Release 1 roll-out and in cooperation with DSS and the REC, HITE CT will provide outreach and support for providers to use any available local HIE services and NHIN Direct to exchange care summaries.

### 3.6.1.4 **Bundled Services**

HITE-CT will consider a number of “bundled services” configurations. This could include offering bundling a combination of the following capabilities along with the statewide HIE services.

- e-Prescribing services from the consolidation service providers.
- Lab results services from local lab service providers who provide services in the provider’s local area. If such products are constructed, these will eventually be transformed into a consolidated offering where Labs and providers are connected via the HIE.
- NHIN Direct connections to providers who are not yet connected to either the statewide or a local HIE. If such bundles are constructed, these will eventually be transformed into the consolidated offering as the targeted providers are connected via the HIE.

### 3.6.2 **State level Shared Services**

The statewide HIE will be a standards based, decentralized, hybrid model that supports distributed data. This model will allow statewide availability for the secure transfer of a defined set of clinical information between appropriate participating entities.

In this proposed model for Connecticut, the hybrid system consists of a single core infrastructure vendor that provides as a platform for the utility supplemented by adding different vendor applications to the core system. The core infrastructure selected will consist of an exchange utility with a Master Patient Index (MPI) and Provider Registry. The infrastructure will be flexible and will accommodate a MPI and Registry to locate records within the HIE. The confederated model ensures that data can be centralized where required or can be held where it is created, therefore avoiding the negative perceptions and potential privacy and security consequences of storing all patient information in a large centralized HIE repository. In some cases such as laboratory results, radiology reports, pathology reports, and medication histories, clinical data will not be held in edge servers, but rather routed from the laboratory or imaging center to the ordering provider. The architecture of the statewide HIE is compatible with NHIN core services.

During the detailed architecture development process, HITE-CT will determine how best to realize the State level shared services, using the guidelines described below:

- **Patient and Provider Registries and Services:** HITE-CT will enter into a dialogue with organizations that have existing registry services, such as Danbury HealthLink, to determine whether those organizations can host State-wide registry services, or whether their assets can be procured and repurposed for use at the State level. If neither of these options is feasible, HITE-CT will investigate setting up new State level patient and provider registry services and the mechanism to leverage the data and processes that have been implemented by these early adopter initiatives.
- **Continuity of Care Document Management services:** The eHealthConnecticut pilot demonstrated CCD transfers to an edge repository and patient query using the IHE PIX profile. HITE-CT will leverage the eHealthConnecticut experience and lessons learned to define the business, information and technology architectures for State-wide CCD/CCR management services.
- **Laboratory Services:** HITE-CT will determine with its partners the role of regional systems in laboratory result transmissions and the expected role of the statewide entity in results transfers outside regional system boundaries. HITE-CT will work with Danbury,

eHealthConnecticut, Yale New Haven, Middlesex and other Connecticut based organizations that have experience in electronically transferring lab results from laboratories to providers. In particular, HITE-CT will review the Danbury experience and will analyze: the extent to which it applicable statewide; the laboratory partners sending prerequisites; and the receiving provider business and technology prerequisites. HITE-CT will perform a survey of the 115 laboratories in Connecticut to establish the breadth of health care providers they serve and the extent to which they currently send results electronically. From this information, HITE-CT will develop the business, information and technical architecture functional requirements and will establish how the proposed patient and provider registries and other components of the infrastructure can be leveraged to meet laboratory oriented meaningful use measures (Number of lab results sent through HIE or retrieved by EHRs in structured, coded format).

- **EHR services:** HITE-CT recognizes that EHR adoption is a critical success factor for the HIE. HITE-CT will work with eHealthConnecticut, the Regional Extension Center, to determine how best to partner with them in providing services needed to ensure robust EHR adoption by physicians across Connecticut, including:
  - EHR Readiness Assessment toolkits
  - EHR Procurement and Negotiation Advice
  - EHR comparative analysis
  - Interfacing toolkits, especially for lab results and CCD/CCRs
  - ePrescribing integration toolkits
  - EHR practice change management and value realization initiatives.
- **Portal services:** HITE-CT will work with eHealthConnecticut, Danbury, Yale New Haven, Middlesex and other Connecticut based organizations that have experience in implementing a clinical portal. HITE-CT will develop the business, information and technical architecture functional requirements for the portal, including access control, personalization, integration brokering, context management and single sign-on. HITE-CT will consider different approaches to delivering the EHR Viewer solution from extending the user interface of Commercial Off-the-Shelf (COTS) Clinical Information System (CIS) applications to using specialized applications for viewing images and other non-structured objects (e.g., videos, voice, etc.).

### 3.6.3 HITE-CT Standard operating procedures for the HIE

HITE-CT services are defined by Use Cases, which are services that provide benefits to patients, providers, and other stakeholders. The selection and prioritization of Use Cases is largely market driven. HITE-CT will consider recommendations on Use Cases from stakeholders, and make the final decision on the implementation of new Use Cases. Prioritization of Use Cases will be based on existing workflows, resources and potential revenue. Initially, HITE-CT will develop a prioritized list of Use Cases based on results from the planning processes.

HITE-CT will lead the efforts to define a comprehensive enterprise architecture (including standards considerations) and document the full scope of required HITE-CT technology infrastructure and services. HITE-CT will ensure that the architecture is in alignment with DOIT's Connecticut Enterprise Architecture—Technology Architecture (CTEA-TA) standards. The architecture will permit the exchange of data between entities that house patient data and

authorized health care providers in a manner that will accommodate users at various stages of technology adoption.

HITE-CT staff will conduct day-to-day management of a number of critical functions:

- Customer service functions to support users and resolve problems as they occur, analyze root causes and implement lasting solutions to operational problems and effectively communicate service levels attained;
- Provide training and education to HIE service users on a timely basis to ensure efficient on boarding and continuing operations;
- Administration of security and access control and provide reporting to demonstrate compliance with all privacy and security policies; and
- Contract and service-level agreement management with service providers to ensure the providers live up to their contracts and service levels are maintained.

### 3.6.4 HITE-CT Business and Technical Operations Action items

Table 19 summarizes the actions included in the Operational Plan that relate specifically to Business and Technical Operations.

**Table 19. HITE-CT Business and Technical Operations Action Items**

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
1. Use customer segmentation analysis, determined priorities, State Medicaid HIT Plan (SMHP), readiness information and leverage capabilities to devise a comprehensive phased implementation roll-out plan.	17—Further analyze and Document the Value Proposition & Business Case 19—Market Analysis & Deployment Planning	12/10/2010  3/2/2012
2. Support providers during the early stage of responding to and achieving Meaningful Use compliance while the statewide HIE is being established through consult and communication.	26—Meaningful Use Support within Market Analysis & Deployment Planning 318—Relationship Management for Meaningful Use Support	Starting 12/13/2010  Starting 6/10/2011
3. Establish a comprehensive communications strategy covering all stakeholders and aspects to ensure HIT and HIE are fully understood in a timely manner that will maximize adoption and sustainability of the approach.	37—Communication Plan	1/7/2011
4. Utilize a variety of media to execute the communications plan on an ongoing basis in alignment with the roll out of products and services.	40—Marketing Campaigns	4/1/2011
5. Coordinate HITE-CT communications activity with the REC, DSS and DPH integrating outreach on HIT adoption, meaningful use achievement, HITE-CT provided services and other required	108—Ongoing Coordination with other Agencies and Programs 252, 280, 308—Confirm	11/21/2013

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
services.	proposed target participants, estimates and schedule	
6. Based on the agreed technical architecture, agreed utilization of available and leverage infrastructure and implementation priorities acquire the information technology products and services required to enable Connecticut's HIE.	196—Contract for Systems and Services Vendor	7/1/2011
7. Review and adjust the implementation roll-out plan in partnership with the chosen vendor and owners of existing capabilities that will be leveraged.	10—Checkpoint 6—Initial HIE Stand-up 242—Review Implementation Plan with Vendor and Partners (Leveraged Capabilities)	3/23/2012 6/9/2011
8. Stand up Connecticut's HIE infrastructure and utility.	237—Initial HIE Stand-up	5/4/2012
9. Adjust implementation roll-out plan during the early phases of deployment based on the levels of success achieved and changing market circumstances.	250, 277 & 306—Finalize Release Plan 11-15—Checkpoints 7 through 11	
10. Coordinate the usage of standards and the adoption of HIT to fine tune the implementation plan, recruit willing participants and execute.	256, 267, 285, 296 & 312—Participant Readiness Check, Recruitment and Sign-up	
11. Day to day operation and management of Connecticut's HIE in accordance with Service Level Agreements.	325—Connecticut HIE Operations	Ongoing
12. Relationship management to ensure the HIE's customers really get what they need, are supported in achieving their goals (e.g., meaningful use) and continue to see value after they have been recruited.	315—Relationship Management and Customer Service	Ongoing

## **3.7 Legal and Policy Domain**

### **3.7.1 Development of Policies, Rules and Trust Agreements to comply with policy requirements**

Connecticut's strategy is to develop widely accepted legal and business rules and uniform consent forms and procedures that will enable the exchange of health information for clinical purposes while assuring confidentiality and security. HITE-CT will define principles for data ownership by type of data and populations impacted. The policy will determine:

- Usage allowed by type of data and population;
- How to manage disclosure based on an "opt-out" model as described in the Strategic Plan;
- When sharing agreements are required; and
- Privacy and security requirements.

#### **3.7.1.1 DPH Policy Framework**

Until January 1, 2011, the Department of Public Health, by statute, is the State Designated Entity (SDE) for the development of health information exchange (HIE) in Connecticut. The Department assumes all responsibility as assigned, using the following guiding principles.

- DPH, as a public health advocate, regulator, and educator, is positioned as a leader in the development of a statewide HIE.
- DPH has a responsibility to ensure that the electronic exchange of health information improves the health status of state's residents as part of an efficient and accessible health care system.
- DPH has an obligation to protect the medical information of all consumers and providers by ensuring the confidential and secure exchange of health information.
- In creating, building and sustaining Connecticut's HIE system, DPH is committed to a process that is open, inclusive and transparent to all stakeholders. Stakeholders participate in process through membership in the full Board (by appointment only), membership in subcommittees of the Board, attending meetings of the Board and/or its subcommittees, and/or providing feedback to the Board and its committees with regard to its work. All meetings of the Board and its committees are open to the public, publicly noticed, and posted to Web, as are meeting minutes.
- DPH supports the creation of strong practices and protocols surrounding the privacy and security of electronic medical information, particularly during the current transitional phase from paper based records to a statewide and interstate electronic medical records system and health information exchange.
- DPH encourages current and future initiatives that develop and expand existing local and regional HIE systems. DPH continues to champion HIE systems serving provider groups, hospital service areas, and other health care settings if such exchange is performed in a manner consistent with State and federal laws, policies, protocols and standards.
- In recognition of the limited availability of HIE startup capital from the federal Office of the National Coordinator, DPH supports the efforts of the HITE-CT to seek appropriate

financial resources to sustain the HIE, and to assist local and regional providers in developing and implementing effective electronic medical records systems.

- DPH supports efforts of DSS and the Centers for Medicare and Medicaid Services to provide incentives to eligible health care professionals and entities that achieve or implement the “meaningful use” of electronic medical records.

### **3.7.1.2 HITE-CT Policy Framework**

Policy development for the HITE-CT will also rely upon input from the experts of the Board. The Board is ultimately responsible for reviewing and approving all agency policies, to ensure that the development of policies meets the standards of definition and consistency and are comprehensive across the needs of the HITE-CT. Such policies are to be reviewed and refreshed in a timely manner. Finally, defined within these policies and procedures for the HITE-CT must be suitable and effective enforcement methods with compliance metrics defined.

**Governance** - Policies and procedures will need to be developed to establish and support the new governance model:

1. Bylaws (completed 10/18/10);
2. Personnel policies (in development);
3. Meeting and membership policies (completed 10/18/10);
4. Ethical conduct policy (in development);
5. Committee policies (determined by Committee Chair); and
6. Strategic/operational planning and review policies.

#### **Legal Policies will include:**

1. Privacy policies;
2. Patient consent;
3. Data sharing protocols;
4. Network security; and
5. User authentication and authorization.

#### **Business & Technical Policies will address:**

1. Procurement;
2. Change control;
3. Program evaluation and reporting; and
4. Communication and education practices.

#### **Finance Policies will address:**

1. Contracting;
2. Financial reporting;
3. Annual audits; and
4. Financial sustainability.

### **Technical Policies will identify:**

1. Technical standards; and
2. Data protection and privacy policies

In addition, HITE-CT plans to review and leverage the work done by eHealthConnecticut in certain policy areas for example:

- The Data Use and Reciprocal Support Agreement (DURSA) and the Business Associate Agreement (BAA) to be signed by all entities that participate in the HIE pilot. These documents are meant to clarify the responsibilities of all parties, including commitments to security and privacy practices. These contracts meet the current requirements of the federal HITECH legislation, and the same standard documents are meant to be executed by all HIE pilot participants
- The Universal Medical Records release Authorization (UMRRA) to be used by physicians, hospitals and other providers throughout the State.

### **3.7.2 Privacy and Security Harmonization**

In addition to the policy standardization and consistency that is inherent in the policy framework outlined above, Connecticut has embarked upon an in-depth analysis (preemption analysis) of existing laws and regulations that govern privacy and security of health care information.

This is a comprehensive analysis covering the following topics.

- Use and disclosure of information in relation to:
  - Testing and treatment for HIV or AIDS;
  - Drugs and alcohol;
  - Psychiatry and mental health; and
  - Underage population groups.
- Use and disclosure of information for the purposes of research.
- Right to access one's own medical records.
- Use and disclosure of information in relation to:
  - Decedent's records;
  - Other health care givers; and
  - Pharmaceutical records.
- Record-keeping requirements for facilities and providers.
- Access or inspection by State agencies and other officials.
- Reporting to State and Federal agencies for:
  - Registries and databases;
  - Reporting of disease, injury or disability;
  - Reporting of abuse;
  - Reporting of vital statistics;

- Disclosure of medical information in response to subpoenas, discovery requests or agency orders;
- Examinations, certifications or other disclosures ordered by a court or agency;
- Use and disclosure of information in connection with criminal proceedings;
- Use and disclosure of information by Connecticut government agencies;
- Protected health information under the Connecticut Freedom of Information Act;
- Connecticut personal data act: State statutes and regulations;
- Provisions of State law requiring the confidentiality of medical records;
- Use and disclosure of information in connection with peer review proceedings; and
- Disclosure of health information to, and use by, insurers.

The outcome of this analysis may result in recommendations for changes in existing or new Connecticut legislation to harmonize the legal environment with the privacy and security needs of Connecticut’s chosen HIE approach.

To enable interstate information exchange and exchange with federal health care delivery organizations, HITE-CT plans to leverage the work of the HISPC in the further development of Connecticut’s HIE security and privacy policies and standards. In addition, HITE-CT plans to depend on the NHIN for interstate and federal delivery organization information exchange.

### 3.7.3 HITE-CT Legal and Policy Action items

Table 20 summarizes the actions included in the Operational Plan that relate specifically to Legal and Policy.

**Table 20. HITE-CT Legal and Policy Action Items**

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
1. Continue to develop and evolve the proposed consent and disclosure model outlined in the Strategic Plan to the point at which specific policies, governance, standards and processes for the management of information disclosure can be implemented.	117—(Policies and Processes) Health Information Privacy, Security, Use and Disclosure	12/23/2010
2. Work collaboratively with Connecticut’s Regional Extension Center to provide education to both users of the health information exchange and for individuals whose information may be disclosed through the State HIE.	111—(Coordination with Other Agencies and Programs) Regional Extension Center	11/21/2013
3. Continue to evolve the HITE-CT Policy Framework as policies and standards are developed and adopted leveraging ONC guidance on ‘nationally recognized standards’ and on creation of HIE policies and regulations.	114—(Policies and Processes) Policy Framework	11/11/2010
4. Review and leverage work done by eHealthConnecticut and other Connecticut HIE projects developing HITE-CT’s policies.	108—Ongoing Coordination with other Agencies and Programs	11/21/2013

Action Item	Master Schedule ID and Task Name	Scheduled Completion Date
5. Complete the legal preemptive analysis for a Connecticut legal framework for Privacy and Security for HIE.	117—(Policies and Processes) Health Information Privacy, Security, Use and Disclosure	12/23/2010
6. Develop and pursue legislative proposals (Privacy and Security, Funding etc.)	122—Legislative Proposal and Changes	2/3/2011
7. Implement a proactive, ongoing data quality strategy encompassing many aspects of quality including accuracy, timeliness and compliance. Determine obligations and controls for data suppliers.	119—(Policies and Processes) Data Quality 234—Data Quality	3/17/2011  10/1/2010

### 3.8 Evaluation Approach

In addition to the reporting requirements and measures described in the Strategic Plan Evaluation section of this document an independent evaluation process through an agreement between DPH and the University of Connecticut Health Center (UCHC).

#### 3.8.1 University of Connecticut Health Center Evaluation

The UCHC will evaluate the HIE activities from July 2010 until March 2014, specifically to conduct continuous and structured evaluation of the HITE-CT activities and governance model to ensure effectiveness of decision making and accountability. The purpose of this arrangement is defined as conducting comprehensive evaluation according to the ONC Cooperative Agreement. The evaluation tasks are defined below.

- Assess the process of developing the HITE CT Agency, and its Board of Directors.
- Demonstrate the economic and quality outcomes of Health Information Exchange (HIE) investments, including but not limited to:
  - a. Development of policy, protocols and performance standards for HIE.
  - b. Development of HIE systems and infrastructure that:
    - i. Benefits consumers, providers, insurers, and purchasers;
    - ii. Improves financial performance at hospitals and health care provider entities implementing, using and offering HIE;
    - iii. Used phased implementation to allow tech development and system-testing;
    - iv. Prioritizes reporting requirements to avoid burdening physicians and hospitals.
  - c. Implementation of HIE programs.
  - d. Establishment of criteria to achieve and measure outcomes to:
    - i. Improve health by (1) improving access to health care, (2) improving health care outcomes, (3) coordinating care, and (4) involving patients in health improvement;

- ii. promote efficiency;
  - iii. motivate innovation; and
  - iv. protect privacy.
- e. The effects of such HIE investments on health care providers and consumers who use the health information exchange.
- Determine HIEs currently existing in Connecticut and barriers to HIE implementation in Connecticut.
  - Determine appropriate recommendations for and development of processes for continuous improvement in HIE implementation in Connecticut.
  - Identify, analyze and disseminate these lessons learned broadly within the state and establish processes for continuous improvements.
  - Identify, monitor and track “meaningful use” HIE capabilities throughout Connecticut.

In order to achieve this purpose the DPH and UCHC have established a Memorandum of Agreement (Appendix 4.12) which documents that UCHC will:

- Conduct stakeholder interviews, as required;
- Develop, conduct, and analyze multiple surveys to measure metrics as described by the Strategic and Operational Plans, federal guidelines, and subsequent ONC documents;
- Coordinate with the ONC’s National Program Evaluation as stated in the Funding Opportunity Announcement and leverage technical assistance from ONC for Connecticut’s evaluation in an effort to implement lessons learned to ensure appropriate milestone achievements;
- Review and measure the collaboration, coordination and communication among DPH, DSS, and eHealthConnecticut, as well as the Health Information Technology Advisory Committee, subsequent Advisory Board of the HITE-CT Agency, and other key stakeholders, with respect to HITE-CT Cooperative Agreement;
- Develop and define the details of the process, protocols and tools for collecting information for the evaluation of the ONC Cooperative Agreement;
- Analyze and quantify (measure) the effectiveness of the HITE-AC investment and leadership as it impacts the agency’s prospects for success;
- Evaluate the process mandated by Public Act 10-117;
- Create a method to measure and assess the HITE-CT developed value proposition;
- Solicit support from legislators, consumers, providers, and others in use of HIE in Connecticut and to use when reports must be made on such “value” to the legislature
- Assess the synergy created by the 3C3 efforts related to HITE;
- Conduct continuous evaluation and reassessment of the Strategic and Operational Plan;
- Analyze the barriers to best practices and achievement of milestones in HIE implementation;
- Assess the effectiveness of DPH and HITE CT in furthering information exchange capability within the State;

- Assess DPH reporting and performance requirements compliance specified in the State HIE Cooperative Agreement, Federal Program Information Announcements and subsequent ONC documents; and
- Report on quality improvement through tracking key performance measures.

### 3.8.2 HITE-CT Performance Metrics

An initial set of considerations for HITE-CT performance measures are outlined in Table 21. Some of the universe of potential performance measures identified are paired as a numerator and denominator rather than suggesting a target percentage due to the lack of clarity around some of these definitions. Other measures are raw numbers especially for expected high volume transactions (e.g., lab results). (D) = Denominator.

**Table 21. HITE-CT Performance Metrics**

Metric Type	Suggested Metrics
General Level of HIE Usage	<ul style="list-style-type: none"> <li>■ Number of clinical results sent through the HIE (unsolicited)</li> <li>■ Number of lab results sent through HIE in structured, coded format</li> <li>■ Number of clinical results retrieved through the HIE (on demand)</li> <li>■ Number of lab results retrieved by EHRs in structured, coded format</li> <li>■ Number of patient summaries sent through the HIE (unsolicited)</li> <li>■ Number of patient summaries sent through the HIE with structured problems and allergies</li> <li>■ Number of patient summaries retrieved through the HIE (on demand)</li> <li>■ Number of patient summaries retrieved by EHRs sent with structured problems and allergies</li> <li>■ Number of medication profiles sent through the HIE (unsolicited)</li> <li>■ Number of medication profiles sent through the HIE in structured, coded format</li> <li>■ Number of medication profiles retrieved through the HIE (on demand)</li> <li>■ Number of medication profiles retrieved by EHRs in structured, coded format</li> </ul>
Level of Hospital Usage	<ul style="list-style-type: none"> <li>■ Number of hospitals providing data to HIE</li> <li>■ Total number of hospitals in State (D)</li> </ul>
Average level of patient traffic per submitting system	<ul style="list-style-type: none"> <li>■ Number of EHRs reporting patient ID data to HIEs</li> <li>■ Total volume of patient ID transactions received and processed correctly (D)</li> </ul>
Level of HIE Clinician portal usage	<ul style="list-style-type: none"> <li>■ Number of licensed clinician logins to HIE portals</li> <li>■ Number of licensed clinicians authorized to use HIE (D)</li> <li>■ Number of licensed clinicians authorized to bill Medicaid covered by HIE (D)</li> <li>■ Number of licensed clinicians authorized to bill Medicaid in the State (D)</li> </ul>

Metric Type	Suggested Metrics
Level of Public Health Surveillance Usage	<ul style="list-style-type: none"> <li>■ Number of surveillance transactions sent to public health department through the HIE</li> <li>■ Number of surveillance transactions retrieved via the HIE (by portal lookup or directly to EHR)</li> <li>■ Total number of surveillance transactions sent to public health department (D)</li> </ul>
Level of Public Health Immunization Usage	<ul style="list-style-type: none"> <li>■ Number of immunization records sent to State registry via the HIE</li> <li>■ Number of immunization records retrieved via the HIE (by portal lookup or directly to EHR)</li> <li>■ Total number of immunization records sent to State registry</li> </ul>
Level of HIE usage for Personal Health Records	<ul style="list-style-type: none"> <li>■ Number of unique people identified in consumer index file,</li> <li>■ Number of consumers using the HIE to send data to the PHR of their choice</li> <li>■ Total population of the State (D)</li> </ul>
Speed of Implementation	<ul style="list-style-type: none"> <li>■ Average time from completion of paperwork to bringing a clinician online</li> </ul>
Service Levels (measured as the time required for 98% or more of all items measured)	<ul style="list-style-type: none"> <li>■ Transit time for unsolicited clinical results</li> <li>■ Response time for patient lookups, computer to computer</li> <li>■ Response time for patient lookups, portal</li> <li>■ Time for trouble calls to be answered</li> <li>■ Time for trouble calls to be resolved</li> </ul>
Service Levels (availability as a percentage of the total calendar time in a period)	<ul style="list-style-type: none"> <li>■ Incoming message servers</li> <li>■ Query servers</li> <li>■ Clinician portal</li> </ul>
Satisfaction Levels	<ul style="list-style-type: none"> <li>■ Complaints by complainant type</li> <li>■ Complaints by category (e.g., Privacy/Security, Data Quality, Service Level etc.)</li> </ul>

The actual performance measures implemented will be more specifically developed as the system is implemented and affected by future ONC and CMS guidance, actual HIE services, , the levels of performance, and issues of concern raised by HIE participants.

### 3.8.3 HITE-CT Evaluation Action items

Table 22 summarizes the actions included in the Operational Plan that relate specifically to Evaluation.

**Table 22. HITE-CT Evaluation Action Items**

Action Item	Master Schedule Task ID and Name	Scheduled Completion Date
1. A review of, and periodic revisions of, the State Strategic and Operational Plans after being submitted to and approved by ONC	16—Revise and Update Strategic and Operational Plans on a regular basis	Ongoing

Action Item	Master Schedule Task ID and Name	Scheduled Completion Date
2. An annual evaluation that will be coordinated with the national program evaluation	94—Quarterly Evaluation Coordinated with National Program	Ongoing
3. Definition of reporting requirements and performance metrics for compliance with the State HIE Cooperative Agreement program and additional State defined requirements	87—Determine Requirements, Measures and Systems	2/17/2011
4. Develop reporting systems as required to satisfy the requirements defined above	87—Determine Requirements, Measures and Systems	2/17/2011
5. Use the reporting systems for reporting of performance metrics specified in the State HIE Cooperative Agreement program plus additional State defined requirements	88—Iteratively Deploy Reporting Systems	Ongoing
6. Coordination with national program evaluation and leverage of technical assistance from the Federal government in an effort to implement lessons learned that will ensure appropriate and secure HIE resulting in improvement in quality and efficiency	94—Quarterly Evaluation Coordinated with National Program 108—Ongoing Coordination with other Agencies and Programs	Ongoing

### 3.9 HITE-CT Operational Plan Master Schedule and Risk Analysis

#### 3.9.1 HITE-CT Operational Plan Master Schedule

The figure below is an excerpt from the HITE-CT Master Schedule that contains the latest version of the detailed Master Schedule for the HITE-CT. Carrying out this Master Schedule will be the responsibility of the Program Manager in DPH until the HITE-CT is established. This will continue to be updated and is expected to change and evolve considerably.

**Figure 11. HITE CT Master Schedule**

ID	Task Name	Duration	Start	Finish
1	<b>Program Management</b>	1027 days	Mon 10/4/10	Tue 9/9/14
2	Program Management Office SetUp	20 days	Mon 10/4/10	Fri 10/29/10
3	Program Checkpoints Preparation	850 days	Mon 11/1/10	Fri 1/31/14
4	<b>Program Checkpoints</b>	936 days	Thu 1/6/11	Fri 8/8/14
5	Checkpoint 1 - Business Case	0 days	Fri 5/27/11	Fri 5/27/11
6	Checkpoint 2 - HITE-CT Agency Readiness	0 days	Thu 5/12/11	Thu 5/12/11
7	Checkpoint 3 - Funding	0 days	Thu 9/1/11	Thu 9/1/11
8	Checkpoint 4 - Architecture	0 days	Thu 1/6/11	Thu 1/6/11
9	Checkpoint 5 - Vendor Acquisition	0 days	Fri 7/1/11	Fri 7/1/11
10	Checkpoint 6 - Initial HIE Stand-up	0 days	Fri 3/23/12	Fri 3/23/12
11	Checkpoint 7 - Release 1 - Public Health Deployment	0 days	Fri 11/2/12	Fri 11/2/12
12	Checkpoint 8 - Release 1 - Documents Sharing Deployment	0 days	Fri 3/8/13	Fri 3/8/13
13	Checkpoint 9 - Release 2 - Lab Results Deployment	0 days	Mon 2/10/14	Mon 2/10/14
14	Checkpoint 10 - Release 2 - Quality Reporting	0 days	Mon 10/7/13	Mon 10/7/13
15	Checkpoint 11 - Release 3 - Deployment	0 days	Fri 8/8/14	Fri 8/8/14
16	Revise and Update Strategic and Operational Plans on a regular basis	1027 days	Mon 10/4/10	Tue 9/9/14
17	Further analyze and Document the Value Proposition & Business Case	50 days	Mon 10/4/10	Fri 12/10/10
18	Develop Full Multi-year Funding and Sustainability Model	50 days	Mon 10/4/10	Fri 12/10/10
19	<b>Market Analysis &amp; Deployment Planning</b>	320 days	Mon 12/13/10	Fri 3/2/12
20	<b>Business Deployment Planning</b>	120 days	Mon 12/13/10	Fri 5/27/11
21	Conduct segmentation analysis of the customer base and markets for each service area	60 days	Mon 12/13/10	Fri 3/4/11
22	<b>Initial Roll-Out Planning</b>	60 days	Mon 3/7/11	Fri 5/27/11
23	Determine Priorities for Products and Services	20 days	Mon 3/7/11	Fri 4/1/11
24	Analyze Readiness data	20 days	Mon 4/4/11	Fri 4/29/11
25	Map out phased implementation plan and schedule	20 days	Mon 5/2/11	Fri 5/27/11
26	<b>Meaningful Use Support</b>	320 days	Mon 12/13/10	Fri 3/2/12
27	<b>e-Prescribing</b>	320 days	Mon 12/13/10	Fri 3/2/12
28	Create and maintain register of Pharmacies and Payers	320 days	Mon 12/13/10	Fri 3/2/12
29	Compile e-Prescribing Advice for Providers	30 days	Mon 12/13/10	Fri 1/21/11
30	<b>Lab Results</b>	320 days	Mon 12/13/10	Fri 3/2/12
31	Create and maintain register of Labs	320 days	Mon 12/13/10	Fri 3/2/12
32	Compile Lab Results Advice for Providers	30 days	Mon 1/24/11	Fri 3/4/11
33	<b>Care Summaries</b>	320 days	Mon 12/13/10	Fri 3/2/12
34	Create and maintain register local HIEs offering Care Summaries Capability	320 days	Mon 12/13/10	Fri 3/2/12
35	Compile Care Summaries Advice for Providers	30 days	Mon 3/7/11	Fri 4/15/11
36	<b>Marketing &amp; Communication</b>	100 days	Mon 12/13/10	Fri 4/29/11
37	<b>Communication Plan</b>	20 days	Mon 12/13/10	Fri 1/7/11
38	Stakeholder identification	10 days	Mon 12/13/10	Fri 12/24/10
39	Stakeholder Analysis	10 days	Mon 12/27/10	Fri 1/7/11
40	Marketing Campaigns	60 days	Mon 1/10/11	Fri 4/1/11
41	<b>Stakeholder Coordination</b>	100 days	Mon 12/13/10	Fri 4/29/11
42	Develop formal links to REC.	30 days	Mon 12/13/10	Fri 1/21/11
43	Assist REC with assessing providers' levels of EHR use and readiness.	30 days	Mon 12/13/10	Fri 1/21/11
44	Ensure Connecticut Recovery Working Group completes its broadband mapping exercise.	30 days	Mon 12/13/10	Fri 1/21/11
45	Coordinate Connecticut Recovery Working Group application for additional funds to increase broadband access.	30 days	Mon 12/13/10	Fri 1/21/11
46	Coordinate with Department of Utility Control and Department of Information Technology to understand broadband connectivity issues.	30 days	Mon 12/13/10	Fri 1/21/11

ID	Task Name	Duration	Start	Finish
47	Coordinate with the Department of Utility Control and Department of Information Technology to extend the Connecticut Education Network	30 days	Mon 12/13/10	Fri 1/21/11
48	Work with DSS SMHP project to leverage and uncover HIT adoption knowledge.	50 days	Mon 12/13/10	Fri 2/18/11
49	Align with the Department of Social Services Medicaid HIT plan	50 days	Mon 2/21/11	Fri 4/29/11
50	<b>Develop collaborations with the following Programs</b>	<b>20 days</b>	<b>Mon 12/13/10</b>	<b>Fri 1/7/11</b>
51	Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement Program	20 days	Mon 12/13/10	Fri 1/7/11
52	Connecticut Prescription Monitoring and Reporting System	20 days	Mon 12/13/10	Fri 1/7/11
53	Maternal and Child Health State Systems Development Initiative programs	20 days	Mon 12/13/10	Fri 1/7/11
54	State Offices of Rural Health Policy	20 days	Mon 12/13/10	Fri 1/7/11
55	State Offices of Primary Care	20 days	Mon 12/13/10	Fri 1/7/11
56	State Mental Health Data Infrastructure Grants for Quality Improvement (SAMHSA)	20 days	Mon 12/13/10	Fri 1/7/11
57	State Medicaid/CHIP Programs	20 days	Mon 12/13/10	Fri 1/7/11
58	Indian Health Service (HIS) and tribal activity.	20 days	Mon 12/13/10	Fri 1/7/11
59	Connecticut Partnership for Public Health Workforce Development	20 days	Mon 12/13/10	Fri 1/7/11
60	Capital Community College in Hartford	20 days	Mon 12/13/10	Fri 1/7/11
61	<b>HITE-CT Agency Development</b>	<b>870 days</b>	<b>Fri 10/1/10</b>	<b>Thu 1/30/14</b>
62	<b>Governance Structure - HITE-CT Board Establishment and Oversight</b>	<b>85 days</b>	<b>Fri 10/1/10</b>	<b>Thu 1/27/11</b>
63	Establish the HITE-CT (per the legislation - Public Act 10-117)	5 days	Fri 10/1/10	Thu 10/7/10
64	Define the Governance Model	10 days	Fri 10/1/10	Thu 10/14/10
65	Establish Governance Entities and Subcommittees (develop charters and appoint members)	10 days	Fri 10/15/10	Thu 10/28/10
66	Determine and establish any regulations and by-laws required	30 days	Fri 10/29/10	Thu 12/9/10
67	<b>Develop Organizational Structures</b>	<b>15 days</b>	<b>Fri 1/7/11</b>	<b>Thu 1/27/11</b>
68	HITE-CT Strategy	15 days	Fri 1/7/11	Thu 1/27/11
69	Project Management Office	15 days	Fri 1/7/11	Thu 1/27/11
70	Technology	15 days	Fri 1/7/11	Thu 1/27/11
71	Production	15 days	Fri 1/7/11	Thu 1/27/11
72	Legal/Policy	15 days	Fri 1/7/11	Thu 1/27/11
73	Partner Support	15 days	Fri 1/7/11	Thu 1/27/11
74	Administration	15 days	Fri 1/7/11	Thu 1/27/11
75	<b>Acquire Office Facilities</b>	<b>70 days</b>	<b>Fri 10/8/10</b>	<b>Thu 1/13/11</b>
76	Determine Office/Location Strategy	10 days	Fri 10/8/10	Thu 10/21/10
77	Develop Office/Location Plan	15 days	Fri 10/22/10	Thu 11/11/10
78	Execute Office/Location Plan	45 days	Fri 11/12/10	Thu 1/13/11
79	<b>Staff Acquisition</b>	<b>821 days</b>	<b>Fri 10/1/10</b>	<b>Fri 11/22/13</b>
80	Recruit and Appoint HITE-CT Chief Executive Officer	70 days	Fri 10/1/10	Thu 1/6/11
81	Core Team Establishment and On-boarding	90 days	Fri 1/7/11	Thu 5/12/11
82	Define Required Skill Sets and Staffing Requirements	25 days	Fri 5/13/11	Thu 6/16/11
83	Recruitment and Selection of Staff	90 days	Fri 6/17/11	Thu 10/20/11
84	Fulfill Staff Augmentation Requirements (State staff and Consultants)	130 days	Fri 6/17/11	Fri 11/22/13
85	<b>Reporting</b>	<b>860 days</b>	<b>Fri 10/15/10</b>	<b>Thu 1/30/14</b>
86	Establish External Evaluation Process	20 days	Fri 12/10/10	Thu 1/6/11
87	Determine Requirements, Measures and Systems	30 days	Fri 1/7/11	Thu 2/17/11
88	<b>Iteratively Deploy Reporting Systems</b>	<b>360 days</b>	<b>Fri 2/18/11</b>	<b>Thu 7/5/12</b>
89	<b>State Legislative Annual Reporting</b>	<b>795 days</b>	<b>Fri 1/14/11</b>	<b>Thu 1/30/14</b>
90	State Legislative Annual Reporting 1	15 days	Fri 1/14/11	Thu 2/3/11
91	State Legislative Annual Reporting 2	15 days	Fri 1/13/12	Thu 2/2/12
92	State Legislative Annual Reporting 3	15 days	Fri 1/11/13	Thu 1/31/13

ID	Task Name	Duration	Start	Finish
93	State Legislative Annual Reporting 4	15 days	Fri 1/10/14	Thu 1/30/14
94	<b>Quarterly Evaluation Coordinated with National Program</b>	802 days	Fri 10/15/10	Mon 11/11/13
95	Quarterly Evaluation Coordinated with National Program 1	20 days	Fri 10/15/10	Thu 11/11/10
96	Quarterly Evaluation Coordinated with National Program 2	20 days	Mon 1/17/11	Fri 2/11/11
97	Quarterly Evaluation Coordinated with National Program 3	20 days	Fri 4/15/11	Thu 5/12/11
98	Quarterly Evaluation Coordinated with National Program 4	20 days	Fri 7/15/11	Thu 8/11/11
99	Quarterly Evaluation Coordinated with National Program 5	20 days	Mon 10/17/11	Fri 11/11/11
100	Quarterly Evaluation Coordinated with National Program 6	20 days	Mon 1/16/12	Fri 2/10/12
101	Quarterly Evaluation Coordinated with National Program 7	20 days	Mon 4/16/12	Fri 5/11/12
102	Quarterly Evaluation Coordinated with National Program 8	20 days	Mon 7/16/12	Fri 8/10/12
103	Quarterly Evaluation Coordinated with National Program 9	20 days	Mon 10/15/12	Fri 11/9/12
104	Quarterly Evaluation Coordinated with National Program 10	20 days	Tue 1/15/13	Mon 2/11/13
105	Quarterly Evaluation Coordinated with National Program 11	20 days	Mon 4/15/13	Fri 5/10/13
106	Quarterly Evaluation Coordinated with National Program 12	20 days	Mon 7/15/13	Fri 8/9/13
107	Quarterly Evaluation Coordinated with National Program 13	20 days	Tue 10/15/13	Mon 11/11/13
108	<b>Ongoing Coordination with other Agencies and Programs</b>	820 days	Fri 10/1/10	Thu 11/21/13
109	Office of the National Coordinator of HIT	820 days	Fri 10/1/10	Thu 11/21/13
110	DSS & Medicaid (SMHP)	820 days	Fri 10/1/10	Thu 11/21/13
111	Regional Extension Center	820 days	Fri 10/1/10	Thu 11/21/13
112	Public and Other Health Programs	820 days	Fri 10/1/10	Thu 11/21/13
113	<b>Policies and Processes</b>	120 days	Fri 10/1/10	Thu 3/17/11
114	Policy Framework	30 days	Fri 10/1/10	Thu 11/11/10
115	Finance	30 days	Fri 11/12/10	Thu 12/23/10
116	Human Resources	30 days	Fri 12/24/10	Thu 2/3/11
117	Health Information Privacy, Security, Use and Disclosure	30 days	Fri 11/12/10	Thu 12/23/10
118	Standards Adoption and Setting	30 days	Fri 12/24/10	Thu 2/3/11
119	Data Quality	30 days	Fri 2/4/11	Thu 3/17/11
120	HIT Adoption	30 days	Fri 11/12/10	Thu 12/23/10
121	HIE Relationship Management and Customer Service	30 days	Fri 12/24/10	Thu 2/3/11
122	<b>Legislative Proposals and Changes</b>	39 days	Mon 12/13/10	Thu 2/3/11
123	Funding	30 days	Mon 12/13/10	Fri 1/21/11
124	Privacy and Security	30 days	Fri 12/24/10	Thu 2/3/11
125	<b>Market Analysis &amp; Deployment Planning</b>	320 days	Fri 2/4/11	Thu 4/26/12
126	<b>Business Deployment Planning</b>	120 days	Fri 2/4/11	Thu 7/21/11
127	Conduct segmentation analysis of the customer base and markets for each service area	60 days	Fri 2/4/11	Thu 4/28/11
128	<b>Initial Roll-Out Planning</b>	60 days	Fri 4/29/11	Thu 7/21/11
129	Determine Priorities for Products and Services	20 days	Fri 4/29/11	Thu 5/26/11
130	Analyze Readiness data	20 days	Fri 5/27/11	Thu 6/23/11
131	Map out phased implementation plan and schedule	20 days	Fri 6/24/11	Thu 7/21/11
132	<b>Meaningful Use Support</b>	320 days	Fri 2/4/11	Thu 4/26/12
133	<b>e-Prescribing</b>	320 days	Fri 2/4/11	Thu 4/26/12
134	Create and maintain register of Pharmacies and Payers	320 days	Fri 2/4/11	Thu 4/26/12
135	Compile e-Prescribing Advice for Providers	30 days	Fri 2/4/11	Thu 3/17/11
136	<b>Lab Results</b>	320 days	Fri 2/4/11	Thu 4/26/12
137	Create and maintain register of Labs	320 days	Fri 2/4/11	Thu 4/26/12
138	Compile Lab Results Advice for Providers	30 days	Fri 3/18/11	Thu 4/28/11
139	<b>Care Summaries</b>	320 days	Fri 2/4/11	Thu 4/26/12
140	Create and maintain register local HIEs offering Care Summaries Capability	320 days	Fri 2/4/11	Thu 4/26/12

ID	Task Name	Duration	Start	Finish
141	Compile Care Summaries Advice for Providers	30 days	Fri 4/29/11	Thu 6/9/11
142	<b>Marketing &amp; Communication</b>	<b>100 days</b>	<b>Fri 2/4/11</b>	<b>Thu 6/23/11</b>
143	<b>Communication Plan</b>	<b>20 days</b>	<b>Fri 2/4/11</b>	<b>Thu 3/3/11</b>
144	Stakeholder identification	10 days	Fri 2/4/11	Thu 2/17/11
145	Stakeholder Analysis	10 days	Fri 2/18/11	Thu 3/3/11
146	Marketing Campaigns	60 days	Fri 3/4/11	Thu 5/26/11
147	<b>Stakeholder Coordination</b>	<b>100 days</b>	<b>Fri 2/4/11</b>	<b>Thu 6/23/11</b>
148	Develop formal links to REC.	30 days	Fri 2/4/11	Thu 3/17/11
149	Assist REC with assessing providers' levels of EHR use and readiness.	30 days	Fri 2/4/11	Thu 3/17/11
150	Ensure Connecticut Recovery Working Group completes its broadband mapping exercise.	30 days	Fri 2/4/11	Thu 3/17/11
151	Coordinate Connecticut Recovery Working Group application for additional funds to increase broadband access.	30 days	Fri 2/4/11	Thu 3/17/11
152	Coordinate with Department of Utility Control and Department of Information Technology to understand broadband connectivity issues.	30 days	Fri 2/4/11	Thu 3/17/11
153	Coordinate with the Department of Utility Control and Department of Information Technology to extend the Connecticut Education Network	30 days	Fri 2/4/11	Thu 3/17/11
154	Work with DSS SMHP project to leverage and uncover HIT adoption knowledge.	50 days	Fri 2/4/11	Thu 4/14/11
155	Align with the Department of Social Services Medicaid HIT plan	50 days	Fri 4/15/11	Thu 6/23/11
156	<b>Develop collaborations with</b>	<b>20 days</b>	<b>Fri 2/4/11</b>	<b>Thu 3/3/11</b>
157	Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement Program	20 days	Fri 2/4/11	Thu 3/3/11
158	Connecticut Prescription Monitoring and Reporting System	20 days	Fri 2/4/11	Thu 3/3/11
159	Maternal and Child Health State Systems Development Initiative programs	20 days	Fri 2/4/11	Thu 3/3/11
160	State Offices of Rural Health Policy	20 days	Fri 2/4/11	Thu 3/3/11
161	State Offices of Primary Care	20 days	Fri 2/4/11	Thu 3/3/11
162	State Mental Health Data Infrastructure Grants for Quality Improvement (SAMHSA)	20 days	Fri 2/4/11	Thu 3/3/11
163	State Medicaid/CHIP Programs	20 days	Fri 2/4/11	Thu 3/3/11
164	Indian Health Services (IHS) and tribal activity.	20 days	Fri 2/4/11	Thu 3/3/11
165	Connecticut Partnership for Public Health Workforce Development	20 days	Fri 2/4/11	Thu 3/3/11
166	Capital Community College in Hartford	20 days	Fri 2/4/11	Thu 3/3/11
167	<b>Funds Acquisition</b>	<b>600 days</b>	<b>Fri 5/13/11</b>	<b>Thu 8/29/13</b>
168	<b>Assessment Process</b>	<b>50 days</b>	<b>Fri 5/13/11</b>	<b>Thu 7/21/11</b>
169	Identify assessment universe	10 days	Fri 5/13/11	Thu 5/26/11
170	Collect data for assessment	20 days	Fri 5/27/11	Thu 6/23/11
171	Determine individual assessments	10 days	Fri 6/24/11	Thu 7/7/11
172	Issue notices of assessment	10 days	Fri 7/8/11	Thu 7/21/11
173	<b>Collection Process</b>	<b>60 days</b>	<b>Fri 7/22/11</b>	<b>Thu 10/13/11</b>
174	Collect and process payments	30 days	Fri 7/22/11	Thu 9/1/11
175	Identify delinquents and follow-up	30 days	Fri 9/2/11	Thu 10/13/11
176	<b>Audit Process</b>	<b>40 days</b>	<b>Fri 10/14/11</b>	<b>Thu 12/8/11</b>
177	Audit Selection	10 days	Fri 10/14/11	Thu 10/27/11
178	Audit Execution	30 days	Fri 10/28/11	Thu 12/8/11
179	<b>Appeal Process</b>	<b>450 days</b>	<b>Fri 12/9/11</b>	<b>Thu 8/29/13</b>
180	Appeal Review	450 days	Fri 12/9/11	Thu 8/29/13
181	Appeal Determination	450 days	Fri 12/9/11	Thu 8/29/13
182	<b>HIE Solution Architecture</b>	<b>70 days</b>	<b>Fri 10/1/10</b>	<b>Thu 1/6/11</b>
183	Establish a multi-stakeholder architecture team	15 days	Fri 10/1/10	Thu 10/21/10
184	Develop the HIE Common Requirements Vision (CRV)	20 days	Fri 10/22/10	Thu 11/18/10

ID	Task Name	Duration	Start	Finish
185	Environmental Trends	20 days	Fri 10/22/10	Thu 11/18/10
186	Enterprise Business Strategies	20 days	Fri 10/22/10	Thu 11/18/10
187	Environmental Trends/Enterprise Business Strategies Relationship Matrix	20 days	Fri 10/22/10	Thu 11/18/10
188	Business Information Requirements	20 days	Fri 10/22/10	Thu 11/18/10
189	Enterprise Business Strategies/Business Information Requirements Relationship Matrix	20 days	Fri 10/22/10	Thu 11/18/10
190	Information Technology Requirements	20 days	Fri 10/22/10	Thu 11/18/10
191	Business Information Requirements/IT Requirements Relationship Matrix	20 days	Fri 10/22/10	Thu 11/18/10
192	Summarize into graphic Vision detailing Business, Information and Technology viewpoints	20 days	Fri 10/22/10	Thu 11/18/10
193	Test out each technology component with an independent technology and market assessment	30 days	Fri 11/19/10	Thu 12/30/10
194	Agree and sign-off the CRV through the HITE-CT Governance Process	5 days	Fri 12/31/10	Thu 1/6/11
195	Create mechanism for architecture compliance and future refresh	30 days	Fri 11/19/10	Thu 12/30/10
196	<b>Contract for Systems and Services Vendor</b>	<b>196 days</b>	<b>Fri 10/1/10</b>	<b>Fri 7/1/11</b>
197	<b>Market Scan</b>	<b>45 days</b>	<b>Fri 10/1/10</b>	<b>Thu 12/2/10</b>
198	Establish Scope	15 days	Fri 10/1/10	Thu 10/21/10
199	Research and Collect Market Data	15 days	Fri 10/22/10	Thu 11/11/10
200	Vendor Shortlist Analysis	15 days	Fri 11/12/10	Thu 12/2/10
201	Establish Procurement Strategy and Procurement Process	5 days	Fri 12/3/10	Thu 12/9/10
202	<b>Define Requirements</b>	<b>20 days</b>	<b>Fri 1/7/11</b>	<b>Thu 2/3/11</b>
203	Solution Architecture Requirements	20 days	Fri 1/7/11	Thu 2/3/11
204	Functional Requirements	20 days	Fri 1/7/11	Thu 2/3/11
205	Security Requirements	20 days	Fri 1/7/11	Thu 2/3/11
206	Technology Requirements	20 days	Fri 1/7/11	Thu 2/3/11
207	Implementation Requirements	20 days	Fri 1/7/11	Thu 2/3/11
208	Performance and Operational Requirements	20 days	Fri 1/7/11	Thu 2/3/11
209	Service Level and Support Requirements	20 days	Fri 1/7/11	Thu 2/3/11
210	<b>Procurement</b>	<b>106 days</b>	<b>Fri 2/4/11</b>	<b>Fri 7/1/11</b>
211	Develop RFP	20 days	Fri 2/4/11	Thu 3/3/11
212	Prepare Evaluation Model	10 days	Fri 3/4/11	Thu 3/17/11
213	Issue RFP	1 day	Fri 3/18/11	Fri 3/18/11
214	Vendor Questions and Answers	30 days	Mon 3/21/11	Fri 4/29/11
215	Establish and Train Evaluation Team	10 days	Mon 3/21/11	Fri 4/1/11
216	Evaluation and Selection	15 days	Mon 5/2/11	Fri 5/20/11
217	Best and Final Offer	10 days	Mon 5/23/11	Fri 6/3/11
218	Contract Negotiation	15 days	Mon 6/6/11	Fri 6/24/11
219	Contract Award	5 days	Mon 6/27/11	Fri 7/1/11
220	<b>Standards Adoption and Setting</b>	<b>130 days?</b>	<b>Fri 10/1/10</b>	<b>Thu 3/31/11</b>
221	Create CT HIT Operability and Data Management Standards Governance Structure and Processes	20 days	Fri 1/7/11	Thu 2/3/11
222	Define Required Standards	20 days	Fri 1/7/11	Thu 2/3/11
223	<b>Develop Standards Proposals and Obtain Approval via the Governance process</b>	<b>20 days?</b>	<b>Fri 2/4/11</b>	<b>Thu 3/3/11</b>
224	Basic Data Interchange and Interoperability Standards	20 days	Fri 2/4/11	Thu 3/3/11
225	Standards for Data Quality	1 day?	Fri 2/4/11	Fri 2/4/11
226	Standards for Master Data Interchange	20 days	Fri 2/4/11	Thu 3/3/11
227	Standards for Public Health Reporting	20 days	Fri 2/4/11	Thu 3/3/11
228	Standards for Patient Care Interchange selected use cases	20 days	Fri 2/4/11	Thu 3/3/11
229	Standards for Lab and Auxiliary Orders	20 days	Fri 2/4/11	Thu 3/3/11
230	Standards for Lab and Auxiliary Structured Data Results	20 days	Fri 2/4/11	Thu 3/3/11

ID	Task Name	Duration	Start	Finish
231	Standards for Quality Reporting	1 day?	Fri 2/4/11	Fri 2/4/11
232	Standards for Personal Health Records	20 days	Fri 2/4/11	Thu 3/3/11
233	Standards Communication and Support	20 days	Fri 3/4/11	Thu 3/31/11
234	<b>Data Quality</b>	<b>1 day?</b>	<b>Fri 10/1/10</b>	<b>Fri 10/1/10</b>
235	Determine Accountabilities and Metrics	1 day?	Fri 10/1/10	Fri 10/1/10
236	Implement Audit Controls	1 day?	Fri 10/1/10	Fri 10/1/10
237	<b>Initial HIE Stand-up</b>	<b>286 days</b>	<b>Fri 4/1/11</b>	<b>Fri 5/4/12</b>
238	Vendor Operational Plan	20 days	Mon 7/4/11	Fri 7/29/11
239	Vendor Preparation and Initial Setup	60 days	Mon 8/1/11	Fri 10/21/11
240	Finalize solution design	20 days	Mon 10/24/11	Fri 11/18/11
241	Implement infrastructure and systems	90 days	Mon 11/21/11	Fri 3/23/12
242	Review Implementation Plan with Vendor and Partners (Leveraged Capabilities)	50 days	Fri 4/1/11	Thu 6/9/11
243	Develop, Negotiate and Agree SLAs	50 days	Fri 6/10/11	Thu 8/18/11
244	<b>Configure and Initiate Support Services:</b>	<b>30 days</b>	<b>Mon 3/26/12</b>	<b>Fri 5/4/12</b>
245	Master Provider Index	30 days	Mon 3/26/12	Fri 5/4/12
246	Master Patient Index	30 days	Mon 3/26/12	Fri 5/4/12
247	Records Locator Service	30 days	Mon 3/26/12	Fri 5/4/12
248	Messaging	30 days	Mon 3/26/12	Fri 5/4/12
249	<b>Connecticut HIE Release 1 – CCD &amp; Public Health Reporting</b>	<b>310 days</b>	<b>Mon 4/23/12</b>	<b>Fri 6/28/13</b>
250	<b>Finalize Release 1 Plan</b>	<b>30 days</b>	<b>Mon 4/23/12</b>	<b>Fri 6/1/12</b>
251	Finalize Public Health Reporting Use Cases included in scope	10 days	Mon 4/23/12	Fri 5/4/12
252	Confirm proposed target participants, estimates and schedule	15 days	Mon 5/7/12	Fri 5/25/12
253	HITE-CT Board Approval	5 days	Mon 5/28/12	Fri 6/1/12
254	<b>Continuity of Care Documents</b>	<b>210 days</b>	<b>Mon 6/4/12</b>	<b>Fri 3/22/13</b>
255	<b>Sub-project Wave 1 – For 1st local group of providers (repeated for each local group)</b>	<b>110 days</b>	<b>Mon 6/4/12</b>	<b>Fri 11/2/12</b>
256	Participant Readiness Check, Recruitment and Sign-up	30 days	Mon 6/4/12	Fri 7/13/12
257	Infrastructure and Services Configuration, Testing and Preparation	30 days	Mon 7/16/12	Fri 8/24/12
258	Participant Technology, Process and Change Management Preparation	30 days	Mon 8/27/12	Fri 10/5/12
259	Participant Implementation and Sign-off	20 days	Mon 10/8/12	Fri 11/2/12
260	<b>Sub-project 2-5</b>	<b>160 days</b>	<b>Mon 8/13/12</b>	<b>Fri 3/22/13</b>
261	Sub-project Wave 2	100 days	Mon 8/13/12	Fri 12/28/12
262	Sub-project Wave 3	100 days	Mon 9/10/12	Fri 1/25/13
263	Sub-project Wave 4	100 days	Mon 10/8/12	Fri 2/22/13
264	Sub-project Wave 5	100 days	Mon 11/5/12	Fri 3/22/13
265	<b>Integrated Public Health Reporting</b>	<b>190 days</b>	<b>Mon 10/8/12</b>	<b>Fri 6/28/13</b>
266	<b>Sub-project Wave 1 – For 1st group of providers (repeated for each group)</b>	<b>190 days</b>	<b>Mon 10/8/12</b>	<b>Fri 6/28/13</b>
267	Participant Readiness Check, Recruitment and Sign-up	30 days	Mon 10/8/12	Fri 11/16/12
268	Infrastructure and Services Configuration, Testing and Preparation	30 days	Mon 11/19/12	Fri 12/28/12
269	Participant Technology, Process and Change Management Preparation	30 days	Mon 12/31/12	Fri 2/8/13
270	Participant Implementation and Sign-off	20 days	Mon 2/11/13	Fri 3/8/13
271	<b>Sub-project 2-5</b>	<b>160 days</b>	<b>Mon 11/19/12</b>	<b>Fri 6/28/13</b>
272	Sub-project Wave 2	100 days	Mon 11/19/12	Fri 4/5/13
273	Sub-project Wave 3	100 days	Mon 12/17/12	Fri 5/3/13
274	Sub-project Wave 4	100 days	Mon 1/14/13	Fri 5/31/13
275	Sub-project Wave 5	100 days	Mon 2/11/13	Fri 6/28/13
276	<b>Connecticut HIE Release 2 – Quality Reporting</b>	<b>341 days</b>	<b>Mon 2/11/13</b>	<b>Mon 6/2/14</b>

ID	Task Name	Duration	Start	Finish
277	<b>Finalize Release 2 Plan</b>	<b>31 days</b>	<b>Mon 2/11/13</b>	<b>Mon 3/25/13</b>
278	Finalize Quality Reporting Use Cases, External Data Sources included in scope	10 days	Mon 2/11/13	Fri 2/22/13
279	Determine the scope of Auxiliary Services Support in this Release	1 day	Mon 2/25/13	Mon 2/25/13
280	Confirm proposed target participants, estimates and schedule	15 days	Tue 2/26/13	Mon 3/18/13
281	HITE-CT Board Approval	5 days	Tue 3/19/13	Mon 3/25/13
282	<b>Quality Reporting</b>	<b>220 days</b>	<b>Tue 3/26/13</b>	<b>Mon 1/27/14</b>
283	<b>Sub-project Wave 1 – For 1st group of providers (repeated for each group)</b>	<b>140 days</b>	<b>Tue 3/26/13</b>	<b>Mon 10/7/13</b>
284	Infrastructure and Services Configuration, Testing and Preparation for External Data Sources	30 days	Tue 3/26/13	Mon 5/6/13
285	Participant Readiness Check, Recruitment and Sign-up	30 days	Tue 5/7/13	Mon 6/17/13
286	Infrastructure and Services Configuration, Testing and Preparation for Quality Reporting	30 days	Tue 6/18/13	Mon 7/29/13
287	Participant Technology, Process and Change Management Preparation	30 days	Tue 7/30/13	Mon 9/9/13
288	Participant Implementation and Sign-off	20 days	Tue 9/10/13	Mon 10/7/13
289	<b>Sub-project 2-5</b>	<b>160 days</b>	<b>Tue 6/18/13</b>	<b>Mon 1/27/14</b>
290	Sub-project Wave 2	100 days	Tue 6/18/13	Mon 11/4/13
291	Sub-project Wave 3	100 days	Tue 7/16/13	Mon 12/2/13
292	Sub-project Wave 4	100 days	Tue 8/13/13	Mon 12/30/13
293	Sub-project Wave 5	100 days	Tue 9/10/13	Mon 1/27/14
294	<b>Ancillary Service Orders/Results</b>	<b>190 days</b>	<b>Tue 9/10/13</b>	<b>Mon 6/2/14</b>
295	<b>Sub-project Wave 1 – For 1st group of providers (repeated for each group)</b>	<b>110 days</b>	<b>Tue 9/10/13</b>	<b>Mon 2/10/14</b>
296	Participant Readiness Check, Recruitment and Sign-up	30 days	Tue 9/10/13	Mon 10/21/13
297	Infrastructure and Services Configuration, Testing and Preparation	30 days	Tue 10/22/13	Mon 12/2/13
298	Participant Technology, Process and Change Management Preparation	30 days	Tue 12/3/13	Mon 1/13/14
299	Participant Implementation and Sign-off	20 days	Tue 1/14/14	Mon 2/10/14
300	<b>Sub-project 2-5</b>	<b>160 days</b>	<b>Tue 10/22/13</b>	<b>Mon 6/2/14</b>
301	Sub-project Wave 2	100 days	Tue 10/22/13	Mon 3/10/14
302	Sub-project Wave 3	100 days	Tue 11/19/13	Mon 4/7/14
303	Sub-project Wave 4	100 days	Tue 12/17/13	Mon 5/5/14
304	Sub-project Wave 5	100 days	Tue 1/14/14	Mon 6/2/14
305	<b>Connecticut HIE Release 3 – Personal Health Record</b>	<b>140 days</b>	<b>Mon 1/27/14</b>	<b>Fri 8/8/14</b>
306	<b>Finalize Release 3 Plan</b>	<b>30 days</b>	<b>Mon 1/27/14</b>	<b>Fri 3/7/14</b>
307	Finalize PHR Use Cases included in scope	10 days	Mon 1/27/14	Fri 2/7/14
308	Confirm proposed target PHRs, estimates and schedule	15 days	Mon 2/10/14	Fri 2/28/14
309	HITE-CT Board Approval	5 days	Mon 3/3/14	Fri 3/7/14
310	<b>Personal Health Record (repeated for each PHR product included)</b>	<b>110 days</b>	<b>Mon 3/10/14</b>	<b>Fri 8/8/14</b>
311	PHR Interfaces and Integration Design	30 days	Mon 3/10/14	Fri 4/18/14
312	Participant Group Recruitment and Sign-up	30 days	Mon 4/21/14	Fri 5/30/14
313	Infrastructure and Services Configuration, Testing and Preparation	30 days	Mon 6/2/14	Fri 7/11/14
314	Acceptance Testing, Implementation and Sign-off By Participant Group	20 days	Mon 7/14/14	Fri 8/8/14
315	<b>Relationship Management and Customer Service</b>	<b>996 days</b>	<b>Fri 5/13/11</b>	<b>Fri 3/6/15</b>
316	<b>Relationship Management (HITE-CT Core Staff) - RM</b>	<b>996 days</b>	<b>Fri 5/13/11</b>	<b>Fri 3/6/15</b>
317	RM Assignments	20 days	Fri 5/13/11	Thu 6/9/11
318	<b>RM for Meaningful Use Support</b>	<b>300 days</b>	<b>Fri 6/10/11</b>	<b>Thu 8/2/12</b>
319	e-Prescribing	300 days	Fri 6/10/11	Thu 8/2/12
320	Lab Results	300 days	Fri 6/10/11	Thu 8/2/12
321	Care Summaries	300 days	Fri 6/10/11	Thu 8/2/12

ID	Task Name	Duration	Start	Finish
322	RM adds Release 1 Support	250 days	Mon 7/16/12	Fri 5/28/13
323	RM adds Release 2 Support	300 days	Tue 5/7/13	Mon 5/30/14
324	RM adds Release 3 Support	200 days	Mon 6/2/14	Fri 3/6/15
325	<b>Connecticut HIE Operations</b>	<b>700 days</b>	<b>Mon 3/26/12</b>	<b>Fri 11/28/14</b>
326	Infrastructure Operations and Management	700 days	Mon 3/26/12	Fri 11/28/14
327	Service Level Reporting	700 days	Mon 3/26/12	Fri 11/28/14
328	<b>Stand-up Vendors Customer Service Function and Infrastructure</b>	<b>200 days</b>	<b>Mon 11/21/11</b>	<b>Fri 8/24/12</b>
329	Help and Problem Support	200 days	Mon 11/21/11	Fri 8/24/12
330	EHR Adoption and Readiness Support	200 days	Mon 11/21/11	Fri 8/24/12
331	HIE Education and Outreach	200 days	Mon 11/21/11	Fri 8/24/12
332	<b>Customer Service for Release 1</b>	<b>310 days</b>	<b>Mon 7/16/12</b>	<b>Fri 9/20/13</b>
333	User Education and Training	310 days	Mon 7/16/12	Fri 9/20/13
334	Preparation and Ramp-up for Release 1	310 days	Mon 7/16/12	Fri 9/20/13
335	Start support of Release 1 participants	310 days	Mon 7/16/12	Fri 9/20/13
336	<b>Customer Service for Release 2</b>	<b>341 days</b>	<b>Tue 5/7/13</b>	<b>Tue 8/26/14</b>
337	Preparation and Ramp-up for Release 2	341 days	Tue 5/7/13	Tue 8/26/14
338	User Education and Training	341 days	Tue 5/7/13	Tue 8/26/14
339	Start support of Release 2 participants	341 days	Tue 5/7/13	Tue 8/26/14
340	<b>Customer Service for Release 3</b>	<b>140 days</b>	<b>Mon 6/2/14</b>	<b>Fri 12/12/14</b>
341	Preparation and Ramp-up for Release 3	140 days	Mon 6/2/14	Fri 12/12/14
342	User Education and Training	140 days	Mon 6/2/14	Fri 12/12/14
343	Start support of Release 3 participants	140 days	Mon 6/2/14	Fri 12/12/14

### 3.9.2 HITE-CT Risk Analysis

The risk analysis described below is based on industry standards and best practices detailed in the Control Objectives for Information and related Technology (COBIT) and Information Technology Infrastructure Library (ITIL). The risks are identified from the perspective of the HITE-CT with regard to the development of the Connecticut HIE and no risks from the provider perspective or the DPH perspective are included. The analysis does not consider impact or probability in defining the mitigation strategies.

The risks identified summarized by category (reflecting the cooperative agreement domains):

- Core Business Hazards - Non-participation by providers and value proposition;
- Governance - Governance structure not representative;
- Finance - Start-up financing and financial sustainability;
- Technology - HIE functioning and adaptability;
- Business and Technical Operations - timely solution delivery, vendor risks, and staggered implementation;
- Legal/Policy - inappropriate information sharing, privacy safeguards; participant agreements, and breaches.

### 3.9.3 HITE-CT Risk Classification Matrix

Table 23 provides a full list of the risks, along with the descriptions and prioritization. The risks are prioritized as follows:

-  Red: A high priority risk. If the risk is not mitigated it will impede the HIT-CT initiative from moving forward.
-  Yellow: A medium priority risk. If the risk is not mitigated, there may be challenges faced in moving the initiative forward.
-  Green: A low priority risk.

**Table 23. HITE-CT Risk Analysis Table**

Risk Category	Risk	Definition	Risk Priority
Core Business Hazards	Non participation by providers	Providers may choose to implement community sharing initiatives in their service area and or use NHIN Direct to bypass the statewide HIE Lack of EHR adoption by physicians HIE needs a critical mass to succeed	
	Value proposition	Health care providers may delay participation in the statewide HIE and impede implementation due to concerns over value and services.	
Governance	Governance structure is not representative	Governance structure is not representative of all stakeholder interests	
Finance	Startup funding availability	Short term, startup funding cannot be secured.	
	Long term financial sustainability cannot be achieved	This risk could be due to improperly setting user participation fees at a threshold where providers are willing to pay for the value they receive; insufficient numbers of providers signing up, which leads to increased costs for those who are participating; or inability to fund a sustainability model that is broadly acceptable.	

Risk Category	Risk	Definition	Risk Priority
Technology Infrastructure	HIE does not function properly or does not meet end user needs	<p>This risk can be further broken down by considering the known technology functions that must interoperate. For example:</p> <ul style="list-style-type: none"> <li>■ The core infrastructure gateway messaging does not allow participating POS systems to make requests or receive responses.</li> <li>■ The core infrastructure common authentication source does not authenticate against its federated partners.</li> <li>■ CT does not agree on the common unique identifier policy on which the client and provider registries depend.</li> <li>■ The chart registry does not resolve multiple identifiers accurately.</li> <li>■ The provider registry does not disambiguate providers accurately, or CT organizations' credentialing or licensing practices do not allow unique identification of providers.</li> <li>■ The clerical portal access controls or workflow management features are not sufficiently well developed that providers will use the technology.</li> <li>■ The XDS registry or clinical data repositories do not function well enough to allow continuity of care documents to be exchanged smoothly.</li> <li>■ Another key aspect of the technology risk is agreement to provide data and obtaining realistic data for testing purposes.</li> </ul>	
	Inability to adapt to support mandatory changes or requirements, growth and innovation	The solution must be capable of supporting changes in functionality due to innovation, growth of activities, increased complexity, changing data models and mandatory changes required by internal or external authorities.	
Business and Technical Operations	Solution cannot be delivered within the expected timeline	<p>The vendor does not have the amount of resources required to deliver successfully on time and on budget.</p> <p>This risk will be particularly acute in the first two years of the HITE-CT mandate as all HITEs attempt to implement systems obtained from a limited set of vendors.</p>	
	The use of vendors poses challenges related to meeting the milestones of the State Plan	The availability, sustainability and expertise/skills of vendors could influence the timelines and quality of this initiative.	
	Staggered implementation impacts functionality	Staggered implementation of component technology may impact the overall functionality of the statewide HIE.	

Risk Category	Risk	Definition	Risk Priority
Legal/Policy	Inappropriate information sharing	Insufficient insurance to cover risks associated with potential civil suits that could emerge as a result of sharing electronic health information.	
	Proposed solution does not meet industry standards or does not provide appropriate safeguards for security/privacy	This includes the risks that: <ul style="list-style-type: none"> <li>■ The opt-out consent policy is accepted by participating organizations and users of the Connecticut health system;</li> <li>■ The consent policy can be supported by the core technology;</li> <li>■ Patient privacy might be breached either through inadequate security processes or inadvertent breaches</li> </ul>	
	Inadequate participant agreement	Developing a participant agreement that is enormously complex or too simplistic to appropriately address participant requirements.	
	Does not conform to inter-state requirements	Connecticut Privacy and Security practices, regulations and standards are unacceptable to other States who, therefore, cannot exchange data with Connecticut.	
	Breaches due to inadequate training	Improperly trained users can create system disruptions and breaches to best practices.	

### 3.9.4 Risk Mitigation

HITE-CT has considered the high and medium priority risks, and proposes the following mitigation strategies as an integral aspect of the Operational Plan.

#### 3.9.4.1 Core Business Hazards

**High Priority Risk** - Non-participation by providers based on:

- Providers may choose to implement community sharing initiatives in their service area, and /or use NHIN Direct to bypass the statewide HIE;
- Lack of EHR adoption by physicians;
- HIE needs a critical mass to succeed.

Mitigation for this will largely depend on the type and characteristics of the provider

- Those providers applying for “meaningful use” incentives (including hospitals) may feel more comfortable depending on the State to help them qualify.
- Smaller physician practices will be offered substantial and focused support by the Regional Extension Center. HITE-CT will collaborate closely with the REC to ensure physicians are provided with the correct advice.
- Some providers will prefer not to be “locked in” to local hospitals or health systems for these services.

**Medium Priority Risk** - Payers may delay implementation due to concern over value and services. There is a possibility that payers may have concerns about the overall value of the HITE-CT initiative, which may prevent them from engaging in the initiative and to start implementation.

Mitigation - HITE-CT intends to define a clear value proposition for different stakeholders and focus on providing those services that are of value to subscribers. HITE-CT will develop a communications strategy early in the process to ensure that the value proposition is defined and clearly articulated to payers.

#### **3.9.4.2 Governance Risks**

**Medium Priority Risk** - Governance structure is not representative.

Mitigation - HITE-CT has made a considerable effort to ensure that stakeholders are represented in its Board structure where appointments are the responsibility of elected representatives. In addition to this, HITE-CT will ensure that stakeholders are represented on advisory committees and on workgroups that develop business require e HIE-related development.

#### **3.9.4.3 Finance Risks**

**High Priority Risk:** Long term financial sustainability cannot be achieved

This risk could be due to improperly setting user participation fees at a threshold where providers are willing to pay for the value they receive; insufficient numbers of providers signing up, which leads to increased costs for those who are participating; or inability to develop a sustainability model that is broadly acceptable.

Mitigation for this will involve:

- The HITE-AC Finance Committee continuing assessment of various scenarios to test detailed options and specific approaches acceptable to the legislature and the stakeholder;
- A review of marketplace trends and national efforts to determine price points for HIE services.

**Medium Priority Risk** - Short term, startup funding cannot be secured.

Connecticut may not be able to receive the base ARRA funding for limited functionality.

Mitigation - Securing the short term, startup funding is essential for the HITE-CT initiative. HITE-CT has engaged with its stakeholders to develop the Strategic and Operational Plan necessary to secure short term funding.

#### **3.9.4.4 Technology Infrastructure Risks**

**High Priority Risk** - HIE does not function properly or does not meet end user needs.

This risk can be further broken down by considering the known technology functions that must interoperate. For example:

- The core infrastructure gateway messaging does not allow participating PoS systems to make requests or receive responses;
- The core infrastructure common authentication source does not authenticate against its federated partners;

- Connecticut does not agree on the common unique identifier policy for client and provider registries;
- The client registry does not resolve multiple patient identifiers accurately;
- The provider registry does not disambiguate providers accurately or Connecticut organizations' credentialing or licensing practices do not allow unique identification of providers;
- The clerical portal access controls or workflow management features are not sufficiently well developed that providers will use the technology; or
- The XDS registry or clinical data repositories do not function well enough to allow continuity of care documents to be exchanged smoothly.

Mitigation will rely on the following.

- HITE-CT is well aware of the highly complex technology infrastructure. Once the architecture is established and first phase plans are solidified, HITE-CT will perform a technology assessment of each individual component proposed and of the combined architecture. HITE-CT will also put in place a methodology, policy and procurement strategy that limits technological risks and the focuses on implementing known functionality with a track record of adoption and success.
- HITE-CT will recruit, and recompense appropriately, a small core of deep technology leadership skills and for additional skilled staffing will depend on the chosen vendor. A key here is a commitment to a proper and rigorous procurement process for the main technology partner.
- HITE-CT will ensure that the technology team focuses on data provisioning issues and will use standard, rigorous project management techniques to track the data acquisition and tasks.

**Medium Priority Risk** - Inability to adopt to support mandatory changes or requirements, growth or innovation. Solution selection will focus on solution capabilities supporting changes in functionality due to innovation, growth in activities, increased complexity, changing data models and mandatory changes required by internal or external authorities.

Mitigation - HITE-CT has selected a Service Oriented Architecture (SOA) approach specifically because SOA built systems are intended to change with requirements. HITE-CT will ensure that the proposed solution adheres to the principles of modularity and has swappable, distributable, loosely coupled and shareable modules. HITE-CT will continuously engage with other HIEs to understand and prepare for changes that might be required in the future.

#### **3.9.4.5 Business and Technical Operations Risks**

**High Priority Risk:** Solution cannot be delivered within the expected timeline because the vendor does not have the resources required to deliver successfully on time and on budget. This risk will be particularly acute in the first two years of the HITE-CT mandate, as all HITEs attempt to implement systems obtained from a limited set of vendors.

Mitigation - HITE-CT will mitigate this risk by continuing the dialogue with Danbury and eHealthConnecticut and other HIE capabilities to see if any parts of their existing infrastructure can be repurposed. In addition, HITE-CT will include vendor capacity as a key decision criterion in its vendor evaluations.

### 3.9.4.6 Legal/Policy Risks

**High Priority Risk** - The proposed solution does not meet industry standards or does not provide appropriate safeguards for security or privacy. This risk includes the several possibilities:

- The consent policy is not accepted by participating organizations and users of the Connecticut health care system;
- The consent policy cannot be supported by the core technology;
- Patient privacy might be breached through inadequate processes, unintended breaches, data spills between organizations; or privacy policies that are not acceptable to subscribing organizations.

Mitigation will rely on the following.

- HITE-CT will contract, develop and operate the services defined in the HITE-CT Strategic Plan. In accordance and in compliance with State and Federal requirements;
- HITE-CT will review and leverage the work done by eHealthConnecticut in crafting data sharing and trust agreements for the DSS HIE Pilot;
- Subscribers to HITE-CT will only exchange transactions that comply with State and Federal standards and monitor transactions to ensure compliance with HITE-CT standards.

**High Priority Risk** - Inadequate participant agreement due to complexity to appropriately address participant requirements.

Mitigation - HITE-CT will leverage guidance from the ONC HIT Policy Committee Privacy and Security Tiger Team to develop agreements that are comprehensive but not overly complex. In addition, HITE-CT will review and leverage the work done by eHealthConnecticut in crafting the policies and trust agreements for the DSS HIE Pilot, including the DURSA, BAA, and UMRRA. These contracts meet the current requirements of the federal HITECH legislation and the same standard documents are meant to be executed by all HIE pilot participants and are accepted by at least some of the main parties who would be involved in the HITE-CT HIE in its early stages.

**High Priority Risk:** Connecticut Privacy and Security practices, regulations and standards are unacceptable to other States who therefore cannot exchange data with Connecticut.

Mitigation - HITE-CT will continue to work with NESCSO and directly with neighboring States to share requirements and approaches. In addition, HITE-CT will depend on the Nationwide Health Information Network (NHIN) for interstate and federal delivery organization information exchange. HITE-CT will work to ensure security and privacy policies and standards are compliant with NHIN to facilitate these categories of information exchange.

**Medium Priority Risk** - Insufficient insurance to cover risks associated with potential civil suits that could emerge as a result of sharing electronic health information.

Mitigation - HITE-CT is not a care delivery organization and will develop its risk profile to minimize and transfer the risks of information breaches. Subscribers to HITE-CT will only exchange transactions that comply with State and Federal standards. Subscribers will police transactions to ensure that they are in compliance with HITE-CT standards.

**Medium Priority Risk** - Improperly trained users can create system disruptions and breaches to best practices.

Mitigation - HITE-CT recognizes that training will be a critical success factor for an effective HIE and will, in collaboration with the REC where appropriate, deliver comprehensive change management and user training to ensure that privacy breaches do not occur. Each participant's implementation plans will be reviewed by the relationship manager assigned by HITE-CT. HITE-CT will reserve the right to postpone or cancel an implementation where the risk of failure is determined to be too great.

## 4.0 Appendices

### 4.1 Appendix—Definition of Terms and Acronyms

**American Recovery and Reinvestment Act of 2009 (ARRA):** The Act is a \$787.2 billion stimulus measure, signed by President Barack Obama on February 17, 2009 that provides aid to states and cities, funding for transportation and infrastructure projects, expansion of the Medicaid program to cover more unemployed workers, health IT funding, and personal and business tax breaks, among other provisions designed to “stimulate” the economy.

**ATNA:** IHE Audit Trail and Node Authentication profile

**BAA:** Business Associate Agreement

**BPPC:** IHE Basic Patient Privacy Consent

**CCD:** HL7 Continuity of Care Document

**CCR:** ASTM Continuity of Care Record

**CDA:** HL7 Clinical Document Architecture

**CDR:** Clinical Data Repositories

**Centers for Medicare and Medicaid Services (CMS):** A federal agency within the United States Department of Health and Human Services that administers the Medicare program and works in partnership with state governments to administer Medicaid, the State Children’s Health Insurance Program (SHIP), and health insurance portability standards.

**CEO:** Chief Executive Officer

**CGS:** Connecticut General Statutes.

**CIS:** Clinical Information System

**CMS:** Center for Medicare and Medicaid Services

**CHQC:** Connecticut Health Quality Cooperative

**CHA:** Connecticut Hospital Association

**CHIN:** Connecticut Health Information Network

**CHIP:** Children’s Health Insurance Program

**COBIT:** Control Objectives for Information and related Technology

**Connecticut State Health Information Exchange Cooperative Agreement Program:** A program established as part of the ARRA through the ONC. The purpose of this program is to continuously improve and expand HIE services over time to reach all health care providers in an effort to improve the quality and efficiency of health care. Cooperative agreement recipients evolve and advance the necessary governance, policies, technical services, business operations and financing mechanisms for HIE over a four year performance period. This program is intended to build off of existing efforts to advance regional and state level HIE while moving toward nationwide interoperability.

**COTS:** Commercial Off-the-Shelf

**CPMRS:** Connecticut Prescription Monitoring and Reporting System

**CRV:** Common Requirements Vision

**CTEA-TA:** Connecticut Enterprise Architecture—Technology Architecture

**DICOM:** Digital Imaging and Communications in Medicine

**DCP:** Connecticut Department of Consumer Protection

**DMHAS:** Connecticut Department of Mental Health & Addiction Services

**DOIT:** Connecticut Department of Information Technology

**DPH:** Connecticut Department of Public Health

**DSS:** Connecticut Department of Social Services

**DURSA:** Data Use and Reciprocal Support Agreement

**ebXML:** electronic business Extensible Markup Language

**EHR:** Electronic Health Record is an electronic record of health related information regarding an individual that conforms to nationally recognized interoperability standards and that can be created, managed, and consulted by authorized clinicians and staff across more than one health care organization.

**ELR:** Electronic Lab Reporting

**EMR:** Electronic Medical Record is an electronic record of health related information regarding an individual that conforms to nationally recognized interoperability standards and that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization.

**Electronic Prescribing (ePrescribing):** A type of computer technology whereby physicians use handheld or personal computer devices to review drug and formulary coverage and to transmit prescriptions to a printer or to a local pharmacy. E-Prescribing software can be integrated into existing clinical information systems to allow physician access to patient specific information to screen for drug interactions and allergies.

**FTE:** Full-Time Equivalents

**FQHC:** Federally Qualified Health Center

**GAAP:** Generally Accepted Accounting Principles

**GBPCAG:** Bridgeport Primary Care Action Group

**GUID:** Global Unique Identifiers

**HEDSS:** Hospital Emergency Department Syndromic Surveillance

**Health Information Exchange (HIE):** As defined by the Office of the National Coordinator and the National Alliance for Health Information Technology (NAHIT), Health Information Exchange means the electronic movement of health related information among organizations according to nationally recognized standards.

**Health Information for Economic and Clinical Health (HITECH) Act:** Collectively, health information technology provisions included at Title XIII of Division A and Title IV of Division B of the ARRA.

**Health Information Organization:** An organization that oversees and governs the exchange of health related information among organizations according to nationally recognized standards

**Health Information Technology (HIT):** As defined in the ARRA, Health Information Technology means hardware, software, integrated technologies or related licenses, intellectual property, upgrades, or packaged solutions sold as services that are designed for or support the use by health care entities or patients for the electronic creation, maintenance, access, or exchange of health information.

**Health Information Technology Regional Extension Center (REC):** As set out in the ARRA, Regional Health Information Technology Extension Centers will be established and may qualify for funding under ARRA to provide technical assistance and disseminate best practices and other information learned from the Health Information Technology Research Center to aid health care providers with the adoption of health information technology.

**Health Insurance Portability and Accountability Act (HIPAA):** An Act enacted by Congress in 1996. Title I of HIPAA protects health insurance coverage for workers and their families when they change or lose their jobs. Title II of HIPAA, known as the Administrative Simplification (AS) provisions, requires the

establishment of national standards for electronic health care transactions and national identifiers for providers, health insurance plans, and employers. The Administration Simplification provisions also address the security and privacy of health data. The standards are meant to improve the efficiency and effectiveness of the nation's health care system by encouraging the widespread use of electronic data interchange in the U.S. health care system.

**HII:** Health Information Infrastructure

**HIS:** Hospital Information Systems

**HITE:** Health Information Technology and Exchange

**HITEAC:** Health Information Technology and Exchange Advisory Committee

**HITE-CT:** Health Information Technology Exchange of Connecticut

**HL7:** Health Level 7

**HUSKY:** Health Care for Uninsured Kids and Youth

**IHS:** Indian Health Service

**Interface:** A means of interaction between two devices or systems that handle data

**Interoperability:** Interoperability means the ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of health care for individuals and communities

**ITIL:** Information Technology Infrastructure Library

**LIMS:** Lab Information Management Systems

**LIS:** Laboratory Information System

**LRS:** Longitudinal Record Service

**MPI:** Master Patient Index; or Master Provider Index

**Meaningful Use:** The American Recovery and Reinvestment Act of 2009 (Recovery Act) authorizes the Centers for Medicare & Medicaid Services (CMS) to provide reimbursement incentives for eligible professionals and hospitals who are successful in becoming "meaningful users" of certified electronic health record (EHR) technology. The Medicare EHR incentive program will provide incentive payments to eligible professionals (EPs), eligible hospitals, and critical access hospitals (CAHs) that are meaningful users of certified EHR technology. The Medicaid EHR incentive program will provide incentive payments to eligible professionals and hospitals for efforts to adopt, implement, or upgrade certified EHR technology or for meaningful use in the first year of their participation in the program and for demonstrating meaningful use during each of five subsequent years. The CMS regulations announced on 07-13-2010 specify the objectives that providers must achieve in payment years 2011 and 2012 to qualify for incentive payments; the ONC regulations specify the technical capabilities that EHR technology must have to be certified and to support providers in achieving the "meaningful use" objectives.

**MMIS:** Medicaid Management Information System

**MOA:** Memorandum of Agreement

**MOSS:** Misys Open Source Solutions

**Nationwide Health Information Network (NHIN):** A national effort to establish a network to improve the quality and safety of care, reduce errors, increase the speed and accuracy of treatment, improve efficiency, and reduce health care costs.

**NCPDP:** National Council on Prescription Drug Plans

**NEJM:** New England Journal of Medicine

**NESCSO:** New England States Consortium Systems Organization

**ONC:** Office of the National Coordinator for Health Information Technology

**OPM:** Connecticut Office of Policy and Management

**P-APD:** Planning-Advance Planning Document

**PAC:** Picture Archiving and Communications systems for storing and managing clinical images

**PHIN:** Public Health Information Network

**PDQ:** Patient Demographics Query

**Personal Health Record (PHR)**—An electronic record of health related information regarding an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared, and controlled by the individual. **PHR:** Personal Health Record.

**PH:** Public Health

**PHS:** Public Health Systems

**PIX:** Patient Identifier Cross Referencing

**PoS:** Point of Service

**PRATS:** Pregnancy Risk Assessment Tracking System

**PRAMS:** Pregnancy Risk Assessment Monitoring System

**Privacy:** In December 2008, the Office of the National Coordinator for Health IT released its “Nationwide Privacy and Security Framework For Electronic Exchange of Individually Identifiable Health Information,” (“Framework”) in which it defined privacy as, “An individual’s interest in protecting his or her individually identifiable health information and the corresponding obligation of those persons and entities that participate in a network for the purposes of electronic exchange of such information, to respect those interests through fair information practices.” This language contrasts with the definition of privacy included in the National Committee on Vital and Health Statistics’ (“NCVHS”) June 2006 report, entitled, “Privacy and Confidentiality in the Nationwide Health Information Network.” In its report, NCVHS recommended the following definition for “privacy”: “Health information ‘privacy’ is an individual’s right to control the acquisition, uses, or disclosures of his or her identifiable health data.”

**Provider:** A person and organizations employing persons who performs services upon other persons for the purpose of bettering their physical or mental state. Professions encompassed in this include physicians, physician assistants, dentists, nurses, nurse practitioners, pharmacists, dietitians, therapists, psychologists, chiropractors, optometrists, paramedics, and a wide variety of others.

**REC:** Regional Extension Center

**REST:** Representational State Transfer

**RLS:** Record Locator Services

**SaaS:** Software-as-a-Service

**Safe Harbor:** An establishment that allows for protection against unwanted changes from outside entities

**SDE:** State Designated Entity

**Security:** The Health Insurance Portability and Accountability Act Security rule defines “Security or Security measures” as “encompass[ing] all of the administrative, physical, and technical safeguards in an information system.

**SMHP:** State Medicaid Health Information Technology Plan

**SOA:** Service Oriented Architecture

**SOAP:** Standard Object Access Protocol

**Sourced:** Refers to the selection and engagement of a vendor for the development, deployment or management of PHIX technical infrastructure. Sourced can refer to a variety of contracting vehicles such as fixed-term contracts or fully outsourced services provided by a vendor in entirety.

**SSL:** Secure Sockets Layer

**SSO:** Single sign on

**TCO:** Total Cost of Ownership

**TLS:** Transport Layer Security

**UCHC:** University of Connecticut Health Center

**UMRRA:** Universal Medical Records Release Authorization

**U.S. Department of Health and Human Services (HHS):** The federal government department responsible for protecting the health of all Americans and providing essential human services. HHS, through CMS, administers the Medicare (health insurance for elderly and disabled Americans) and Medicaid (health insurance for low income people) programs, among others. The Office of the National Coordinator for Health Information Technology is also organizationally located within the Office of the Secretary of HHS.

**U.S. Department of Health and Human Services—Office of the National Coordinator for Health Information Technology (ONC):** This office serves as principal advisor to the Secretary of HHS on the development, application, and use of health information technology; coordinates HHS's health information technology policies and programs internally and with other relevant executive branch agencies; develops, maintains, and directs the implementation of HHS' Strategic Plan to guide the nationwide implementation of interoperable health information technology in both the public and private health care sectors, to the extent permitted by law; and provides comments and advice at the request of OMB regarding specific Federal health information technology programs. ONC was established within the Office of the Secretary of HHS in 2004 by Executive Order 13335.

**VHR:** Virtual Health Record is a health record implemented in some distributed fashion but made to appear centralized to any user.

**WIC:** Women, Infants and Children

**XDS:** Cross-Enterprise Document Sharing

**X12 (EDI X12):** Electronic Data Interchange X12

**3C3:** Collaboration, Coordination and Communication Workgroup with representatives from DPH, DSS the REC (eHealthConnecticut), an Capital Community College.

## 4.2 Appendix—Connecticut Public Act No. 10-117

The following excerpt includes the sections from Connecticut Public Act No. 10-117 regarding the creation of the Health Information Exchange of Connecticut.

Sec. 82. (NEW) (Effective from passage) (a) There is hereby created as a body politic and corporate, constituting a public instrumentality and political subdivision of the state created for the performance of an essential public and governmental function, the Health Information Technology Exchange of Connecticut, which is empowered to carry out the purposes of the authority, as defined in subsection (b) of this section, which are hereby determined to be public purposes for which public funds may be expended. The Health Information Technology Exchange of Connecticut shall not be construed to be a department, institution or agency of the state.

(b) For purposes of this section, sections 83 to 85, inclusive, of this act and section 19a-25g of the general statutes, as amended by this act, "authority" means the Health Information Technology Exchange of Connecticut and "purposes of the authority" means the purposes of the authority expressed in and pursuant to this section, including the promoting, planning and designing, developing, assisting, acquiring, constructing, maintaining and equipping, reconstructing and improving of health care information technology. The powers enumerated in this section shall be interpreted broadly to effectuate the purposes of the authority and shall not be construed as a limitation of powers. The authority shall have the power to:

- (1) Establish an office in the state;
- (2) Employ such assistants, agents and other employees as may be necessary or desirable, which employees shall be exempt from the classified service and shall not be employees, as defined in subsection (b) of section 5-270 of the general statutes;
- (3) Establish all necessary or appropriate personnel practices and policies, including those relating to hiring, promotion, compensation, retirement and collective bargaining, which need not be in accordance with chapter 68 of the general statutes, and the authority shall not be an employer, as defined in subsection (a) of section 5-270 of the general statutes;
- (4) Engage consultants, attorneys and other experts as may be necessary or desirable to carry out the purposes of the authority;
- (5) Acquire, lease, purchase, own, manage, hold and dispose of personal property, and lease, convey or deal in or enter into agreements with respect to such property on any terms necessary or incidental to the carrying out of these purposes;
- (6) Procure insurance against loss in connection with its property and other assets in such amounts and from such insurers as it deems desirable;
- (7) Make and enter into any contract or agreement necessary or incidental to the performance of its duties and execution of its powers. The contracts entered into by the authority shall not be subject to the approval of any other state department, office or agency. However, copies of all contracts of the authority shall be maintained by the authority as public records, subject to the proprietary rights of any party to the contract;
- (8) To the extent permitted under its contract with other persons, consent to any termination, modification, forgiveness or other change of any term of any contractual right, payment, royalty, contract or agreement of any kind to which the authority is a party;
- (9) Receive and accept, from any source, aid or contributions, including money, property, labor and other things of value;
- (10) Invest any funds not needed for immediate use or disbursement in obligations issued or guaranteed by the United States of America or the state and in obligations that are legal investments for savings banks in this state;
- (11) Account for and audit funds of the authority and funds of any recipients of funds from the authority;
- (12) Sue and be sued, plead and be impleaded, adopt a seal and alter the same at pleasure;

(13) Adopt regular procedures for exercising the power of the authority not in conflict with other provisions of the general statutes; and

(14) Do all acts and things necessary and convenient to carry out the purposes of the authority.

(c) (1) The Health Information Technology Exchange of Connecticut shall be managed by a Board of directors. The Board shall consist of the following members: The Lieutenant Governor, or his or her designee; the Commissioners of Public Health, Social Services and Consumer Protection, or their designees; the Chief Information Officer of the Department of Information Technology, or his or her designee; three appointed by the Governor, one of whom shall be a representative of a medical research organization, one of whom shall be an insurer or representative of a health plan and one of whom shall be an attorney with background and experience in the field of privacy, health data security or patient rights; three appointed by the president pro tempore of the Senate, one of whom shall have background and experience with a private sector health information exchange or health information technology entity, one of whom shall have expertise in public health and one of whom shall be a physician licensed under chapter 370 of the general statutes who works in a practice of not more than ten physicians and who is not employed by a hospital, health network, health plan, health system, academic institution or university; three appointed by the speaker of the House of Representatives, one of whom shall be a representative of hospitals, an integrated delivery network or a hospital association, one of whom shall have expertise with federally qualified health centers and one of whom shall be a consumer or consumer advocate; one appointed by the majority leader of the Senate, who shall be a primary care physician whose practice utilizes electronic health records; one appointed by the majority leader of the House of Representatives, who shall be a consumer or consumer advocate; one appointed by the minority leader of the Senate, who shall be a pharmacist or a health care provider utilizing electronic health information exchange; and one appointed by the minority leader of the House of Representatives, who shall be a large employer or a representative of a business group. The Secretary of the Office of Policy and Management and the Healthcare Advocate, or their designees, shall be ex-officio, nonvoting members of the Board. The Commissioner of Public Health, or his or her designee, shall serve as the chairperson of the Board.

(2) All initial appointments to the Board shall be made on or before October 1, 2010. The initial term for the Board members appointed by the Governor shall be for four years. The initial term for Board members appointed by the speaker of the House of Representatives and the majority leader of the House of Representatives shall be for three years. The initial term for Board members appointed by the minority leader of the House of Representatives and the minority leader of the Senate shall be for two years. The initial term for the Board members appointed by the president pro tempore of the Senate and the majority leader of the Senate shall be for one year. Terms shall expire on September thirtieth of each year in accordance with the provisions of this subsection. Any vacancy shall be filled by the appointing authority for the balance of the unexpired term. Other than an initial term, a Board member shall serve for a term of four years. No Board member, including initial Board members, may serve for more than two terms. Any member of the Board may be removed by the appropriate appointing authority for misfeasance, malfeasance or willful neglect of duty.

(3) The chairperson shall schedule the first meeting of the Board, which shall be held not later than November 1, 2010.

(4) Any member appointed to the Board who fails to attend three consecutive meetings or who fails to attend fifty per cent of all meetings held during any calendar year shall be deemed to have resigned from the Board.

(5) Notwithstanding any provision of the general statutes, it shall not constitute a conflict of interest for a trustee, director, partner, officer, stockholder, proprietor, counsel or employee of any person, firm or corporation to serve as a Board member, provided such trustee, director, partner, officer, stockholder, proprietor, counsel or employee shall abstain from deliberation, action or vote by the Board in specific respect to such person, firm or corporation. All members shall be deemed public officials and shall adhere to the code of ethics for public officials set forth in chapter 10 of the general statutes.

(6) Board members shall receive no compensation for their services, but shall receive actual and necessary expenses incurred in the performance of their official duties.

(d) The Board shall select and appoint a chief executive officer who shall be responsible for administering the authority's programs and activities in accordance with policies and objectives established by the Board. The chief executive officer shall serve at the pleasure of the Board and shall receive such compensation as shall be determined by the Board. The chief executive officer (1) may employ such other employees as shall be designated by the Board of directors; and (2) shall attend all meetings of the Board, keep a record of all proceedings and maintain and be custodian of all books, documents and papers filed with the authority and of the minute book of the authority.

(e) The Board shall direct the authority regarding: (1) Implementation and periodic revisions of the health information technology plan submitted in accordance with the provisions of section 74 of public act 09-232, including the implementation of an integrated state-wide electronic health information infrastructure for the sharing of electronic health information among health care facilities, health care professionals, public and private payers, state and federal agencies and patients; (2) appropriate protocols for health information exchange; and (3) electronic data standards to facilitate the development of a state-wide integrated electronic health information system, as defined in subsection (a) of section 19a-25d of the general statutes, for use by health care providers and institutions that receive state funding. Such electronic data standards shall: (A) Include provisions relating to security, privacy, data content, structures and format, vocabulary and transmission protocols; (B) limit the use and dissemination of an individual's Social Security number and require the encryption of any Social Security number provided by an individual; (C) require privacy standards no less stringent than the "Standards for Privacy of Individually Identifiable Health Information" established under the Health Insurance Portability and Accountability Act of 1996, P. L. 104-191, as amended from time to time, and contained in 45 CFR 160, 164; (D) require that individually identifiable health information be secure and that access to such information be traceable by an electronic audit trail; (E) be compatible with any national data standards in order to allow for interstate interoperability, as defined in subsection (a) of section 19a-25d of the general statutes; (F) permit the collection of health information in a standard electronic format, as defined in subsection (a) of section 19a-25d of the general statutes; and (G) be compatible with the requirements for an electronic health information system, as defined in subsection (a) of section 19a-25d of the general statutes.

(f) Applications for grants from the authority shall be made on a form prescribed by the Board. The Board shall review applications and decide whether to award a grant. The Board may consider, as a condition for awarding a grant, the potential grantee's financial participation and any other factors it deems relevant.

(g) The Board may consult with such parties, public or private, as it deems desirable in exercising its duties under this section.

(h) Not later than February 1, 2011, and annually thereafter until February 1, 2016, the chief executive officer of the authority shall report, in accordance with section 11-4a of the general statutes, to the Governor and the General Assembly on (1) any private or federal funds received during the preceding year and, if applicable, how such funds were expended, (2) the amount and recipients of grants awarded, and (3) the current status of health information exchange and health information technology in the state.

Sec. 83. (NEW) (Effective from passage) (a) The Health Information Technology Exchange of Connecticut may establish or designate one or more subsidiaries for the purpose of creating, developing, coordinating and operating a state-wide health information exchange, or for such other purposes as prescribed by resolution of the authority's Board of directors, which purposes shall be consistent with the purposes of the authority. Each subsidiary shall be deemed a quasi-public agency for purposes of chapter 12 of the general statutes. The authority may transfer to any such subsidiary any moneys and real or personal property. Each such subsidiary shall have all the privileges, immunities, tax exemptions and other exemptions of the authority. A resolution of the authority shall prescribe the purposes for which each subsidiary is formed.

(b) Each such subsidiary may sue and shall be subject to suit, provided the liability of each such subsidiary shall be limited solely to the assets, revenues and resources of such subsidiary and without recourse to the general funds, revenues, resources or any other assets of the authority or any other subsidiary. Each such subsidiary shall have the power to do all acts and things necessary or convenient to carry out the purposes for which such subsidiary is established, including, but not limited to: (1) Solicit, receive and accept aid, grants or contributions from any source of money, property or labor or other

things of value, subject to the conditions upon which such grants and contributions may be made, including, but not limited to, gifts, grants or loans from any department, agency or quasi-public agency of the United States or the state, or from any organization recognized as a nonprofit organization under Section 501(c)(3) of the Internal Revenue Code of 1986, or any subsequent corresponding internal revenue code of the United States, as amended from time to time; (2) enter into agreements with persons upon such terms and conditions as are consistent with the purposes of such subsidiary; and (3) acquire, take title, lease, purchase, own, manage, hold and dispose of real and personal property and lease, convey or deal in or enter into agreements with respect to such property.

(c) Each such subsidiary shall act through its Board of directors, not less than fifty per cent of whom shall be members of the Board of directors of the authority or their designees.

(d) The provisions of section 1-125 of the general statutes, as amended by this act, and this section shall apply to any officer, director, designee or employee appointed as a member, director or officer of any such subsidiary. Neither any such persons so appointed nor the directors, officers or employees of the authority shall be personally liable for the debts, obligations or liabilities of any such subsidiary as provided in said section 1-125. Each subsidiary shall, and the authority may, provide for the indemnification to protect, save harmless and indemnify such officer, director, designee or employee as provided by said section 1-125.

(e) The authority or any such subsidiary may take such actions as are necessary to comply with the provisions of the Internal Revenue Code of 1986, or any subsequent corresponding internal revenue code of the United States, as amended from time to time, to qualify and maintain any such subsidiary as a corporation exempt from taxation under said Internal Revenue Code.

(f) The authority may make loans or grants to, and may guarantee specified obligations of, any such subsidiary, following standard authority procedures, from the authority's assets and the proceeds of its bonds, notes and other obligations, provided the source and security, if any, for the repayment of any such loans or guarantees is derived from the assets, revenues and resources of such subsidiary.

Sec. 84. The state of Connecticut does hereby pledge to and agree with any person with whom the Health Information Technology Exchange of Connecticut may enter into contracts pursuant to the provisions of sections 82 to 85, inclusive, of this act that the state will not limit or alter the rights hereby vested in the authority until such contracts and the obligations thereunder are fully met and performed on the part of the authority, provided nothing contained in this section shall preclude such limitation or alteration if adequate provision shall be made by law for the protection of such persons entering into contracts with the authority.

Sec. 85. The Health Information Technology Exchange of Connecticut shall be and is hereby declared exempt from all franchise, corporate business, property and income taxes levied by the state or any municipality, provided nothing in this section shall be construed to exempt from any such taxes, or from any taxes levied in connection with the manufacture or sale of any products which are the subject of any agreement made by the authority, any person entering into any agreement with the authority.

Sec. 86. Section 19a-25g of the 2010 supplement to the general statutes is repealed and the following is substituted in lieu thereof (Effective from passage):

(a) The Department of Public Health shall be the lead health information exchange organization for the state from July 1, 2009, to December 31, 2010, inclusive. The department shall seek private and federal funds, including funds made available pursuant to the federal American Recovery and Reinvestment Act of 2009, for the initial development of a state-wide health information exchange.

(b) On and after January 1, 2011, the Health Information Technology Exchange of Connecticut, created pursuant to section 82 of this act, shall be the lead health information organization for the state. The authority shall continue to seek private and federal funds for the development and operation of a state-wide health information exchange. The Department of Public Health may contract with the authority to transfer unexpended federal funds received by the department pursuant to the federal American Recovery and Reinvestment Act of 2009, P.L. 111-05, if any, for the initial development of a state-wide health information exchange. The authority shall, within available resources, provide grants for the

advancement of health information technology and exchange in this state, pursuant to subsection (f) of section 82 of this act.

[(b)] (c) The department shall facilitate the implementation and periodic revisions of the health information technology plan after the plan is initially submitted in accordance with the provisions of section 74 of public act 09-232, including the implementation of an integrated state-wide electronic health information infrastructure for the sharing of electronic health information among health care facilities, health care professionals, public and private payers, state and federal agencies and patients until December 31, 2010. On and after January 1, 2011, the Health Information Technology Exchange of Connecticut shall be responsible for the implementation and periodic revisions of the health information technology plan.

### 4.3 Appendix—CT DPH HITE Advisory Committee and HITE-CT Board of Directors Membership

#### 2009-2010 HITEAC Membership and State Agency Representatives

<b>Member</b>	<b>Affiliation</b>
Michael Fedele	Lieutenant Governor Office of the Lieutenant Governor
Thomas Agresta, MD	Associate Professor and Director of Medical Informatics Department of Family Medicine University of Connecticut School of Medicine
Lisa M. Boyle, JD	Partner Robinson & Cole, LLP
Daniel P. Carmody	VP, Information Strategy and Solutions CIGNA Corporation
Kevin Carr, MD	Internist Waterbury Hospital Connected Health Accenture, Inc
Peter Courtway	Chief Information Officer Danbury Hospital
Kenneth Dardick, MD	Family Practice Physician Mansfield Family Practice
Michael Hudson	President, Northeast Region, Health Care Management Aetna
Mark Masselli	President and CEO Community Health Center, Inc.
<b>Representative</b>	<b>Representing</b>
Rick Bailey	Department of Information Technology
John Gadea, Jr., RPh	Department of Consumer Protection
Jamie Mooney	Office of the Healthcare Advocate
J. Robert Galvin, MD/Meg Hooper, MPA	Department of Public Health
Cristine Vogel	DPH/Office of Health Care Access
Barbara Parks Wolf	Office of Policy and Management
Marcia Mains	Department of Social Services

## 2010-2011 HITE-CT Board of Directors

Member	Representing
Nancy Wyman	Lieutenant Governor
J. Robert Galvin, MD, MPH, MBA Commissioner	Commissioner of Public Health -Chairperson
Mark Heuschkel Medical Operations MMIS Unit	Commissioner of Social Services
John Gadea, Jr., RPh Director, Drug Control	Commissioner of Consumer Protection
Richard Bailey Deputy Chief Information Officer	Chief Information Officer of the Department of Information Technology
Thomas Agresta, MD UCONN School of Medicine	A representative of a medical research organization
Daniel P. Carmody CIGNA Corporation	An insurer or representative of a health plan
Lisa M. Boyle, JD Robinson & Cole, LLP	An attorney with background and experience in the field of privacy, health data security or patient rights
Kevin Carr, MD Connected Health Accenture, Inc.	One with background and experience with a private sector health information exchange or health information technology entity
Angela Mattie, JD Quinnipiac University	One with expertise in public health
Steven C. Thornquist, MD	A physician licensed in a practice of not more than ten physicians and who is not employed by a hospital, health network/plan/system, or academic institution
Peter Courtway Danbury Hospital	A representative of hospitals, an integrated delivery network or a hospital association
Mark Maselli Community Health Center, Inc.	One with expertise with federally qualified health centers
Ellen Andrews, PhD CT Health Policy Project	A consumer or consumer advocate
Brenda Kelley AARP Connecticut	A consumer or consumer advocate
Ronald Buckman, MD Bolton Family and Sports Medicine	A pharmacist or a health care provider utilizing electronic health information exchange
John Lynch Connecticut Center for Primary Care	A large employer or a representative of a business group
Vacant as of November 30, 2010	A primary care physician whose practice utilizes electronic health records
Barbara Parks Wolf	Secretary of the Office of Policy and Management <i>(ex-officio, nonvoting)</i>
Jamie Mooney Norwalk Hospital	Office of the Healthcare Advocate <i>(ex-officio, nonvoting)</i>

## **4.4 Appendix—HITE-CT Board of Directors Bylaws, Adopted November 15, 2010**

### **ARTICLE I – AUTHORITY FOR BYLAWS**

#### **101 Authority**

These Bylaws are adopted pursuant to section 82(b)(13) of the Act and supplement and implement certain provisions of the Act.

### **ARTICLE II – DEFINITIONS**

#### **201 Definitions**

Unless the context shall otherwise require, the following words and terms shall have the following meanings (if there is a conflict between these Bylaws and the Act, the Act shall govern):

- (1) “Act” means Public Act. No. 10-117 of the General Statutes of Connecticut, as amended from time to time, commonly known as the “An Act Concerning Revisions to Public Health Related Statutes and the Establishment of the Health Information Exchange of Connecticut.
- (2) “Authority” means the Health Information Technology Exchange of Connecticut (HITE-CT), a body politic and corporate, constituting a public instrumentality and political subdivision of the State of Connecticut, created and established by the Act.
- (3) “Board” means the Board of Directors of the Authority.
- (4) “Chairperson” means the Chairperson of the Authority as referred to in Section 82(c)(1) of the Act and Article III of these Bylaws.
- (5) “Committee” shall mean a committee established by the Board of Directors in accordance with these Bylaws for the purpose of carrying out one or more functions of the Authority.
- (6) “Director” or “Directors” means an individual or individuals appointed to the Board pursuant to Section 82(c)(1) of the Act and Article III of these Bylaws.
- (7) “Executive Session” means a meeting of the Board or a committee of the Board at which the public is excluded for one or more of the purposes described in Section 1-200(6) of the Freedom of Information Act.
- (8) “Freedom of Information Act” means Section 1-200 *et seq.* of the General Statutes, as amended from time to time, commonly known as the “Freedom of Information Act”.
- (9) “General Statutes” means the General Statutes of Connecticut, Revision of 1958, as amended.
- (10) “Secretary” shall mean the Secretary of the Authority elected pursuant to these Bylaws.
- (11) “Vice Chairperson/ Treasurer” shall mean the Vice Chairperson/ Treasurer of the Authority elected pursuant to these Bylaws.

### **ARTICLE III – BOARD OF DIRECTORS**

#### **301 Authority, Membership, Terms, Vacancies**

The powers of the Authority shall be vested in and exercised by the Board of Directors, which may exercise all such authority and powers of the Authority and do all such lawful acts and things as are permitted by the Act or these Bylaws. The Board shall consist of twenty (20) Directors defined by the Act as follows:

- (1) The Lieutenant Governor, or his or her designee;
- (2) The Commissioners of Public Health, Social Services and Consumer Protection, or their designees;
- (3) The Chief Information Officer of the Department of Information Technology, or his or her designee;
- (4) Three (3) appointed by the Governor, one (1) of whom shall be a representative of a medical research organization, one of whom shall be an insurer or representative of a health plan and one of whom shall be an attorney with background and experience in the field of privacy, health data security or patient rights. The initial term for these board members shall be four years;
- (5) Three (3) appointed by the president pro tempore of the Senate, one of whom shall have background and experience with a private sector health information exchange or health information technology entity, one of whom shall have experience in public health and one of whom shall be a physician licensed under chapter 370 of the general statutes who works in a practice of not more than ten physicians and who is not employed by a hospital, health network, health plan, health system, academic institution or university. The initial term for these board members shall be for one year;
- (6) Three (3) appointed by the speaker of the House of Representatives, one of whom shall be a representative of hospitals, an integrated delivery network or a hospital association, one of whom shall have expertise with federally qualified health centers and one of whom shall be a consumer or consumer advocate. The initial term for these board members shall be for three years;
- (7) One (1) appointed by the majority leader of the Senate, who shall be a primary care physician whose practice utilizes electronic health records. The initial term for this board member shall be for one year;
- (8) One (1) appointed by the majority leader of the House of Representatives, who shall be a consumer or consumer advocate. The initial term for this board member shall be for three years;
- (9) One (1) appointed by the minority leader of the Senate, who shall be a pharmacist or health care provider utilizing electronic health information exchange. The initial term for this board member shall be for two years; and
- (10) One (1) appointed by the minority leader of the House of Representatives, who shall be a large employer or a representative of a business group. The initial term for this board member shall be for two years;
- (11) **Ex Officio Members:** The Secretary of the Office of Policy and Management and the Healthcare Advocate, or their designees, shall be ex-officio, non-voting members of the Board of Directors.

### **302 Term for Board Members (other than initial), Removal, Deemed Resignation**

- (1) Terms shall expire on September 30 of each year, in accordance with the provisions of the Act.
- (2) Any vacancy shall be filled by the appointing authority for the balance of the unexpired term.
- (3) Other than an initial term, a board member shall serve for a term of four years. No board member, including initial board members, may serve for more than two terms.
- (4) Any board member may be removed by the appropriate appointing authority for misfeasance, malfeasance or willful neglect of duty.
- (5) Any board member who fails to attend three consecutive meetings or who fails to attend fifty percent of all meetings held during any calendar year shall be deemed to have resigned from the board.

### **303 Conflicts of Interest**

Public confidence in the recommendations and other actions of the Board and Committees requires that Directors avoid both actual conflicts of interest and situations that might give the appearance of a conflict of interest. Given the statutory qualifications for membership on the Board, it is to be expected, however,

that some Directors will have outside business or professional interests relating to health information technology and exchange development. It is not intended that such outside business or professional interests be considered a conflict of interest, provided that a Director shall not participate in any deliberation or vote, and shall not take any other affirmative action as a Director or Committee member, with respect to a matter in which such Director has an interest which is in substantial conflict with the proper discharge of the duties and responsibilities of membership on the Board or such Committee. For this purpose, the determination of whether a Director has an interest which is in substantial conflict with the duties and responsibilities of membership on the Board or a Committee shall be made in the manner provided in Section 1-85 of the Connecticut General Statutes for conflicting interests of public officials. The existence and nature of any potential conflict of interest shall be promptly disclosed to the Chairperson or, in the case of the Chairperson, to the Vice-Chairperson, and otherwise as may be required by Section 1-86 of the Connecticut General Statutes.

### **304 Duties**

The Board of Directors shall perform the duties imposed on them by the Act and by these Bylaws.

### **305 Delegation of Powers**

The Board of Directors may, by resolution, delegate to the Chief Executive Officer such powers of the Authority, as they believe necessary, advisable or desirable to permit the timely performance of the administrative functions of the Authority and to carry out the plans, policies, procedures and decisions of the Board, pursuant to the Act.

### **306 Attendance**

A board member or a member of a Committee may participate in a meeting of the Board or of such Committee by means of conference telephone or similar communications equipment enabling all board members and Committee members participating in the meeting to hear one another, so long as the public is able to participate in such meeting. Participation in a meeting pursuant to this section shall constitute presence in person at such meeting.

### **307 Quorum**

- (1) A majority of the board members appointed shall constitute a quorum of the Board. Ex-officio board members shall not be counted in determining whether a quorum is present.
- (2) A majority of the members of a Committee shall constitute a quorum, provided that such quorum shall consist of a minimum of two (2) Directors. If necessary to achieve a quorum at any meeting of a Committee, the Chairperson of the Board may sit, participate and vote as an alternative member of such Committee at such meeting, provided that the Chairperson shall not act as an alternative member of any Committee at more than three (3) consecutive meetings of such Committee.

### **308 Enactment**

An affirmative vote of a simple majority of those in attendance at Board meetings or meetings of any Committee at which a quorum is present shall be sufficient for action, including the passage of any resolution, except as may otherwise be required by law.

### **309 Order of Business**

The order of business of any meeting of the Board or any Committee shall be as set forth in the agenda for such meeting, provided that the Chairperson may vary the order of business in his or her discretion.

### **310 Committees**

- (1) The Board of Directors may, from time to time, as necessary or convenient, in conformity with the provisions of the Act or these Bylaws, form a Committee or Committees comprised of two (2) or more board members. The Board may form such Committees, including as members such individuals as may be knowledgeable in the subject matter whether or not Directors or employees of the Authority, as the Board in its discretion may determine to be appropriate to advise and assist the Board, or management of the Authority in the performance of their statutory responsibilities.
- (2) Such Committees shall have, and may exercise, all such authority as the Board of Directors may delegate, including the power to adopt a resolution upon a majority vote of the members of the Committee at which a quorum is present. The Chairperson of the Board of Directors shall recommend the name of such Committees and shall appoint a Committee chairperson and all members of such Committees. A Committee shall have the power to act by a majority of the members present at any meeting at which a quorum is in attendance. Each shall maintain at all times minutes of its meetings including its considerations, deliberations, decisions and resolutions, and shall distribute copies of such minutes to Committee members and to the Board as appropriate.
- (3) Such Committees may include but not be limited to: Governance/ Executive Committee; Legal and Policy Committee; Business and Technical Operations Committee; Technical Infrastructure Committee, and Finance Committee.
- (4) The Executive Committee: The Executive Committee shall consist of the officers of the Authority and the chairpersons of all Committees. The Chairperson of the Board of Directors shall be its chairperson. It shall be the duty of the Executive Committee to exercise all the powers of the Board to conduct the business affairs of the Authority between meetings of the Board, except that the Executive Committee may not: (i) appoint, elect or remove officers of the Authority; (ii) establish Committees of the Board; amend or repeal these Bylaws; (v) approve annual budgets or borrowing; or (vi) take any other action which by law, or these Bylaws requires action by the Board.
- (5) The Personnel Search Committee: The Chairperson of the Board of Directors shall be an ex-officio member of the Personnel Search Committee. The Committee shall consist of three members, appointed by the Chairperson. The Committee shall recruit a Chief Executive Officer and shall make recommendations regarding the hiring and compensation of the CEO to the Board.
- (6) It is intended that members of a Committee that are not board members or employees of the Authority be considered "members of an advisory board" for purposes of the Connecticut Code of Ethics for Public Officials.
- (7) Conflicts of Interest: Public confidence in the recommendations and other actions of a Committee requires that Committee members avoid both actual conflicts of interest and situations that might give the appearance of a conflict of interest. It is to be expected, however, that many Committee members will have outside business or professional interests relating to health information technology exchange. It is not intended that such outside business or professional interests be considered a conflict of interest, provided that a Committee member shall not participate in any deliberation or vote, and shall not take any other affirmative action as a Committee member, with respect to a matter in which such member has an interest which is in substantial conflict with the proper discharge of the duties and responsibilities of membership on the Committee. For this purpose, the determination of whether a Committee member has an interest which is in substantial conflict with the duties and responsibilities of membership on the Committee shall be made in the same manner as provided in Section 1-85 of the Connecticut General Statutes for conflicting interests of public officials. The existence and nature of any such substantial

conflict shall be promptly disclosed to the Chairperson of the Committee and to the Chairperson of the Board.

## **ARTICLE IV – OFFICERS**

### **401 Officers**

The officers of the Authority shall be the Chairperson, the Vice-Chairperson/ Treasurer, the Secretary, the Chief Executive Officer and any such other officers, as may be appointed by the Board and not in conflict with law. The Chief Executive Officer shall not be a member of the Board of Directors.

### **402 Chairperson**

As designated by the Act, the Commissioner of Public Health or his or her designee is the Chairperson. The Chairperson shall perform the duties imposed by the Act, these Bylaws and/or resolution of the Board and shall preside at all meetings of the Board of Directors of the Authority. At each meeting, the Chairperson shall submit such recommendations and information as he or she may consider appropriate concerning the business, affairs and policies of the Authority and may require reports from the Vice-Chairperson/Treasurer, Secretary, CEO and such Committees as in the Chairperson's judgment are necessary. The Chairperson shall ensure that all resolutions and actions adopted by the Board are carried into effect.

### **403 Vice Chairperson/Treasurer**

The Vice Chairperson shall have such powers and shall perform such duties as the Chairperson or the Board may from time to time assign and shall perform such other duties as may be designated from time to time by the Board or by these Bylaws. In the absence or incapacity of the Chairperson, the Vice Chairperson shall perform all the duties and responsibilities of the Chairperson. The Vice Chairperson shall also serve as the Treasurer of the Authority and shall receive and deposit in a bank or banks to be approved by the Board, all the monies of the Authority, maintaining an accurate account thereof. The Treasurer shall make disbursements subject to such resolutions as may be passed from time to time by the Board and shall make reports of the financial condition of the Authority whenever requested by the Board. The Treasurer shall perform such other duties as may be required by these Bylaws or as may be designated from time to time by the Board.

### **404 Secretary**

The Secretary shall cause the proceedings of the Board at their meetings to be recorded upon the books and records of the Authority until a Chief Executive Officer is appointed and assumes these duties. The Secretary shall perform such other duties as may be delegated by the Board or the Chairperson from time to time. The Secretary shall perform the duties of the Chairperson in the absence or incapacity of both the Chairperson and the Vice Chairperson.

### **405 Chief Executive Officer**

- (1) The Board of Directors shall select and appoint a Chief Executive Officer (CEO) of the Authority, who shall serve at the pleasure of the Board, and shall receive such compensation as shall be determined by the Board.
- (2) The CEO shall be responsible for administering the Authority's programs and activities in accordance with policies and objectives established by the Board, and shall perform all duties

incident to the office of the CEO, including those duties imposed by the Act, by these Bylaws and by resolution of the Board.

- (3) The CEO may employ such other employees as shall be designated by the Board.
- (4) The CEO shall attend all meetings of the Board, keep a record of all proceedings and maintain and be custodian of all books, documents and papers filed with the Authority and of the minute book of the Authority.

#### **406 Election of Officers**

The offices of Vice Chairperson/Treasurer and Secretary shall be filled annually at the first meeting in each fiscal year by a majority vote of the Board. In case of resignation or death of the Vice Chairperson/Treasurer or the Secretary, an election shall be held to select a replacement at the first meeting of the Directors following such death or resignation.

#### **407 Signature Authority; Additional Duties**

The officers of the Authority shall have such signature authority as is provided from time to time by resolutions of the Board. At least two officers of the Authority are required to sign, unless otherwise authorized by resolution. The officers of the Authority shall perform such other duties and functions as may from time to time be required.

### **ARTICLE V – MEETINGS**

#### **501 Regular Meetings**

Regular meetings of the Board and of any Committee for the transaction of any lawful business of the Authority shall be held in accordance with a schedule of meetings established by the Board or such Committee. Any regular meeting of the Board or any Committee may be dispensed with by the Chairperson or the Committee Chair upon notice to the Directors or Committee members, as the case may be.

#### **502 Special Meetings**

The Chairperson may, when the Chairperson deems it expedient, and shall, upon the written request of a majority of the Board of Directors, call a special meeting of the Board for the purpose of transacting any business designated in the notice of such meeting. The Chairperson of any Committee may, when the Chair deems it expedient, and shall, upon the written request of a majority of the members of the Committee, call a special meeting of such Committee for the purpose of transacting any business designated in the notice of such meeting.

#### **503 Legal Requirements**

All meetings of the Board and any Committee shall be noticed and conducted in accordance with the applicable requirements of the Act and the Connecticut Freedom of Information Act, including without limitation applicable requirements relating to the filing with the Secretary of the State of any schedule of regular meetings and notices of special meetings, meeting notices to board members and Committee members, public meeting requirements, the filing and public availability of meeting agenda, the recording of votes and the posting or filing of minutes, the addition of agenda items at any regular meeting, and the holding of any executive session.

## **504 Executive Session**

The Board of Directors and any Committee may make a determination to sit in Executive Session. An affirmative vote of at least two-thirds (2/3) of the board members present and eligible to vote on such matter, or an affirmative vote of at least two-thirds (2/3) of the committee members present and eligible to vote on such matter, taken at a public meeting and stating the reasons for such Executive Session, shall be necessary to approve such a resolution. The purpose and the conduct of the Executive Session shall be in accordance with the Freedom of Information Act.

## **505 No Invalidity**

Failure to follow any procedure provided for in these Bylaws shall not render any action taken by the Directors ineffective unless it is ineffective under law. It is intended that these Bylaws be consistent with the Act and with the Freedom of Information Act. If any inconsistency should nevertheless appear, the provisions of the applicable law shall control.

## **ARTICLE VI – PERSONNEL AND PROCUREMENT POLICIES**

### **601 Personnel and Procurement Policies**

The Directors shall establish from time to time such rules and regulations as may be necessary to provide an adequate and systematic procedure for handling the personnel affairs of the administrative staff of the Authority and for handling the procurement policies of the Authority.

## **ARTICLE VII - FINANCIAL INFORMATION**

### **701 Fiscal Year**

The Fiscal Year of the Authority shall commence on the first day of July and end on the last day of the following June.

### **702 Budget Process**

Each proposed budget shall be forwarded by the CEO to the Board of Directors for adoption.

### **703 Director Expenses**

As provided by Section 82(c)(6) of the Act, members of the Board of Directors shall be entitled to reimbursement by the Authority for actual and necessary expenses incurred during the performance of their official duties. All reimbursements shall be made in a manner consistent with the Authority's Travel Policy and Expense Reporting.

## **ARTICLE VIII – AMENDMENT OR REPEAL OF BYLAWS**

### **801 Amendment or Repeal**

These Bylaws may be repealed or amended, or new Bylaws may be adopted, only by the affirmative vote of the majority of a quorum of the full Board of Directors of the Authority at any regular or special meeting. The Authority may adopt rules for the conduct of its business, and the adoption of such rules shall not

constitute an amendment of these Bylaws, unless specifically so stated.

## **ARTICLE IX – INDEMNIFICATION OF OFFICERS OR DIRECTORS**

### **901 Indemnification**

The Directors, officers and employees of the Authority shall be indemnified by the Authority as provided in section 1-125 of the Connecticut General Statutes.

## **ARTICLE X – PLACE OF BUSINESS AND RECORDS**

### **1001 Office of the Authority**

The main office of the Authority shall be maintained at such place or places within the State as the Authority may designate. The Authority shall not be required to hold any of its meetings at such office. The Authority may maintain other offices in the State.

### **1002 Records of the Authority**

- (1) The records of the Authority shall be kept and maintained in accordance with State of Connecticut guidelines. The written records of the Authority will be made available to the public as required by the Freedom of Information Act.
- (2) The records of the Authority will be audited annually with a report provided to the Board.

## 4.5 Appendix—State HIT Assets

### Databases

The Department of Public Health maintains a large and diverse set of data systems (55 databases have been identified<sup>26</sup>) covering a wide range of Connecticut health information including the following areas:

- Vital records on Connecticut residents, including the State-wide registry of births, deaths, marriages, paternity and adoptions. A new Electronic Death Registry System using Netsmart will provide coordination with reporting hospitals, nursing homes, physicians, and municipal registrars of vital statistics to implement the immediate reporting of deaths in Connecticut
- Disease-related screening and surveillance is moving to Maven (a Commercial Off-The-Shelf [COTS] package) to support disease surveillance which is implemented for vaccine-preventable diseases, occupational health, environmental public health metadata, hospital emergency department-based syndromic surveillance system (HEDSS), influenza, Lyme disease, vulnerable populations and HASS (infectious disease admissions—excluding ED).
- The system is now planning to include childhood/adult lead poisoning, the immunization registry, Varicella and TB messaging. Newborn screening for genetic abnormalities and hearing impairments is also moving to Maven. Outbreak management capacity is planned for implementation in late 2010.
- Maven receives data via HL7 messages using the PHIN messaging infrastructure, including Orion Rhapsody integration engine and the CDC NEDSS brokering tool. DPH collects this data and transmits the de-identified data monthly to the CDC database through a CDC-supplied system for Electronic HIV/Aids Registry.
- DPH also maintains an EMS/Trauma Registry System for EMS providers to upload data all 911 calls. This system also for the uploading of trauma data. A State tumor registry contains data on reportable tumors in CT residents and contains over 500,000 records dating back to 1973. Data from this Registry are reported annually to the National Cancer Institute
- Analysis and reporting on a variety of health topics including population statistics, annual vital statistics, hospital discharge patterns, hospital quality of care indicators, health disparities, and morbidity & mortality indicator trends

### Licensing of Facilities and Providers

The State recently migrated to a cross-agency licensing platform that will soon encompass all State public health practitioners and facilities. It was developed by the Department of Public Health in coordination with the Connecticut Department of Consumer Protection (DCP)

### Other Systems and Uses

- Connecticut uses systems to administer programs such as the Women, Infants and Children programs
- Laboratory Information Management System—A ChemWare product currently being implemented that will provide real-time laboratory results to the private sector, State and Federal officials. This will use the PHIN messaging infrastructure
- The DPH Office of Health Care Access (OHCA) maintains databases containing information on the delivery of medical care and financial information from Connecticut's hospitals including patient level data obtained from discharge records collected from all of Connecticut's acute care hospitals. OHCA receives these data semi-annually from the Connecticut Hospital Association/CHIME with names removed

A more comprehensive list of DPH Health data systems can be found in "*Connecticut Health Database Compendium: A Profile of Selected Databases Maintained by The Connecticut Department of Public Health, Third Edition.*"

### **Connecticut Medical Assistance Program**

The Department of Social Services has developed a portal with self-service features to support a number of Connecticut Medical Assistance Programs, including Medicaid, the State-Administered General Assistance (SAGA) program, the Connecticut DSS Pharmaceutical Assistance Contract to the Elderly and Disabled (ConnPACE) and the Connecticut AIDS Drug Assistance Program (CADAP).

In 2008, DSS implemented Hewlett Packards (HP) federally certified Medicaid Management Information System, interChange, for the services provided under Medicaid Fee-For-Service (FFS) and the Connecticut AIDS Drug Assistance Program, ConnPACE, the Katie Beckett Waiver Program, SAGA, the Connecticut Home Care Program and the Connecticut Behavioral Health Partnership Program.

Hewlett-Packard Enterprise Services provides full fiscal agent services, including claims processing, provider relations and enrollment, ConnPACE participant relations and enrollment, Federal and State financial management reporting and surveillance and utilization review reporting to DSS. Access is provided to the CT interChange MMIS for providers and the public via a Web portal.

The Automated Eligibility Verification System (AEVS) provides a comprehensive source of DSS client eligibility information to all enrolled providers. By using any method of the AEVS to verify client eligibility, the provider can access important information including third party insurance, Medicare coverage, waiver program eligibility, managed care eligibility, and Medicare covered services only information.

The Eligibility Management System manages and provides current Medicaid eligibility information to be used by the MMIS for claims adjudication, or for providing benefit coverage information to health care providers prior to providing treatment. The eligibility information is also used by physicians for Electronic Prescribing (ePrescribing).

DSS' Medicaid ePrescribing system (provided by HP) was implemented in Fall 2009 and is a certified payer in the Surescripts network. Surescripts electronically routes up-to-date patient eligibility, medication history, and formulary information between the MMIS and the requesting Medicaid enrolled provider. The Medicaid provider can then make informed decisions relative to prescribing the appropriate medication for the patient. The provider can then submit an electronic prescription via Surescripts to the patients' pharmacy for dispensing.

## 4.6 Appendix— Pharmacies in Connecticut

### Pharmacies – In-State Pharmacies

As of November 1, 2010 there are 660 in-state active pharmacies in the State. Pharmacies with multiple sites are listed in parenthesis.

A & P SUPER FOODMART PHARMACY (2)	CAP PHARMACY LLC	GEER PHARMACY
ABLE CARE PHARMACY AND MEDICAL SUPPLIES	CARDINAL HEALTH (2)	GENOA HEALTHCARE OF CT (4)
ACHORN'S PHARMACY	CENTRAL ADMIXTURE PHARMACY SERVICES INC.	GRADE A PHARMACY (2)
AMERICAN HOMECARE FEDERATION INC	CHARTER OAK HEALTH CENTER PHARMACY	GRAEBER'S PHARMACY INC
ANNEX PHARMACY	COLLINS I.V. CARE LLC	GRANBY PHARMACY
APEX PHARMACY & HOME CARE CENTER II LLC	COLONIAL DRUGGIST'S INC	GRANNICK'S DRUG STORE
ARROW PHARMACY HOLDINGS LLC (7)	COMPOUNDED SOLUTIONS IN PHARMACY LLC	GREENVIEW PHARMACY LLC
BEACON FALLS PHARMACY LLC (10)	CORAM ALTERNATE SITE SERVICES INC.	GREENVILLE DRUG STORE
BELLA VISTA PHARMACY & SURGICAL SUPPLY	COSTCO PHARMACY (5)	GREENWICH PHARMACY LLC
BERNEYS PHARMACY	CRITICAL CARE SYSTEMS	GRIEB'S DARIEN PHARMACY INC
BIG Y PHARMACY (19)	CUSTOM COMPOUNDING LLC D/B/A CCPA	GRIFFIN PHARMACY & GIFTS
BISSELL PHARMACY	CVS PHARMACY (102)	HALL BENEDICT DRUG CO II INC
BOLTON PHARMACY INC	DALE DRUG COMPANY	HANCOCK PHARMACY (6)
BONNEVILLE PHARMACY	DANBURY PHARMACY	HANCOCK'S PHARMACY AND SURGICAL INC
BORDONARO'S PHARMACY INC.	DANIELS PHARMACY	HEALTH COMPLEX MEDICAL INC
BRANFORD HILLS HEALTH CARE CTR PHARMACY	DELLA PIETRA PHARMACY	HEALTH COMPLEX PHARMACY
BRIDGEPORT CHEMISTS	DISCOVER RX ADVANCED CARE PHARMACY	HEBRON PHARMACY INC
BRIDGEPORT PHARMACY	DRUG CENTER OF NEWTOWN	HIGGANUM PHARMACY
BROOKFIELD PHARMACY (2)	DRUG SHOPPE HEALTH SOLUTIONS OF CT INC	HILL HEALTH CENTER PHARMACY
BROOKFIELD PHARMACY COMPOUNDING	DURHAM PHARMACY	HOPE STREET PHARMACY
BRYCE RX LABORATORIES INC	EAST MAIN PHARMACY	HOPMEADOW APOTHECARY
BUNKER HILL PHARMACY	ELECTRIC BOAT FAMILY PHARMACY	HOSPITAL OF ST RAPHAEL APOTHECARY & WELLNESS CENTER
CANAAN APOTHECARY	FINCH PHARMACY INC	HOWES' DRUG STORE
CANDLEWOOD DRUGS	FORD PHARMACY & MED SUPPLY	INNOVA PHARMACY INC
CANFIELD CORNER PHARMACY	FORT HILL PHARMACY INC	JEWETT CITY PHARMACY
KENT APOTHECARY LLC	PHARMACITY LLC	SOMERS PHARMACY
LANG'S PHARMACY	PHARMACY EXPRESS	SOUTHWOOD PHARMACY INC
LANGS PHARMACY OF WESTON	PHARMERICA	ST FRANCIS CARE PHARMACY-MT SINAI CAMPUS
LEAR PHARMACY	PIONEER HEALTH COMPOUNDING PHARMACY LLC	STOLL'S PHARMACY
LENOX PHARMACY INC	PLANTSVILLE PHARMACY	STOP & SHOP PHARMACY (75)

LUPE'S DRUG STORE (2)	PRESCRIPTION SPECIALTIES	SUBURBAN PHARMACY (2)
MACKENZIE'S PHARMACY	PRICE CHOPPER PHARMACY (7)	SWC PHARMACY INC. (2)
MAIN STREET PHARMACY (3)	PROFESSIONAL HOMECARE SERVICES INC	SWITZER'S PHARMACY INC
MANCHESTER PHARMACY	PROFESSIONAL PHARMACY	TARGET PHARMACY (20)
MCQUADE'S PHARMACY INC	REDDING PHARMACY INC	TOWNE APOTHECARY LLC
MCQUADE'S SPECIALTY PHARMACY	RELIANT PHARMACY	TOWNE PHARMACY
MEDICAL CENTER PHARMACY (6)	RFC HEALTH CARE SERVICES INC	TRIAD ISOTOPES INC
MEDICINE SHOPPE (5)	RITE AID PHARMACY (80)	UNCAS PHARMACY
MURPHY'S PHARMACY	ROTARY HOME HEALTH CARE INC	UTLEY & JONES PHARMACY INC
NATHAN HALE PHARMACY	RXHEALTH	VARNUM'S PHARMACY
NATURE'S PHARMACY	RYAN PHARMACY	VISELS DRUG STORE
NELSONS PHARMACY	SALISBURY PHARMACY	VITAL CARE OF CONNECTICUT INC
NORTH HAVEN PHARMACY	SAM'S CLUB (3)	W H PICKETT DRUG CO
NORTH STREET PHARMACY	SBS PHARMACY LLC	WALGREENS (88)
NORWALK PHARMACY LLC	SERAFINO'S PHMICY INC	WAL-MART PHARMACY (32)
OMNICARE OF CONNECTICUT	SEYBRIDGE PHARMACY INC	WATERBURY PHARMACY
ORONOQUE PHARMACY	SHARON PHARMACY	WELLNESS WORKS CENTER PHARMACY
OXFORD PHARMACY	SHOP RITE (14)	WESTOWN PHARMACY INC
PALMERS PROFESSIONAL PHARMACY	SIMSBURY PHARMACY	WOODBURY DRUG
PARTNERS OF CONNECTICUT LLC	SLAVIN'S PROFESSIONAL PHARMACY LLC	XPECT DISCOUNTS (2)
PETRICONE'S TORRINGTON PHARMACY	SLAVIN'S PROFESSIONAL PHARMACY LLC	XPECT DISCOUNTS (2)

### Non-Resident Pharmacies

As of November 1, 2010 there are 510 non-resident pharmacies that are licensed the State.

"Non-resident pharmacy" means a pharmacy, including an Internet-based pharmacy, located outside the state of Connecticut which delivers, dispenses, or distributes, by any method, prescription drugs or devices to an ultimate user physically located in this state. This includes pharmacies located outside the state, which provides routine pharmacy services to ultimate users in this state.

ABBOTT ENDOCRINOLOGY INC.	PRAIRIE STONE PHARMACY LLC	PHARMCO LLC
ACCREDO HEALTH GROUP INC	SMARTPAK EQUINE LLC	EXPRESS SCRIPTS SPECIALTY DISTRIBUTION SVS INC
ACCREDO HEALTH GROUP INC	WALGREENS SPECIALTY PHARMACY LLC	HOUSE CALLS PHARMACY #176
ACCREDO HEALTH GROUP INC	BENECARD CENTRAL FILL	WALGREENS LONG-TERM CARE PHARMACY LLC
ACCREDO HEALTH GROUP INC	BIOMED PHARMACEUTICALS	WALGREENS SPECIALTY PHARMACY #13625
ADLER'S PHARMACY LTC	WEDGEWOOD VILLAGE PHARMACY INC	IBA MOLECULAR NORTH AMERICA INC
AMBER PHARMACY	MPS RX TRISTATE LLC	CARDINAL HEALTH 414 LLC
AMERICARE PHARMACY SERVICES	BOSWELL PHARMACY SERVICES LLC	WAL-MART PHARMACY #10-2625

AMERICA'S BEST CARE PLUS INC.	COSTCO WHOLESALE CORP	AETNA RX HOME DELIVERY LLC
AMERICA'S COMPOUNDING CENTER	STAT-CARE PHARMACY LLC	FOUNDATION CARE
AMERIDOSE LLC	STOP & SHOP PHARMACY #458	LDI PHARMACY
AMERIDOSE LLC	TRIAD ISOTOPES INC	MED 4 HOME PHARMACY
AMERIPHARM INC	ANEWRX	US BIOSERVICES
ANIMAL RX PHARMACY	AMERICA'S ASSISTED LIVING PHARMACY	RELIANT PHARMACY SERVICES
APOTHECARE COMPOUNDING SOLUTIONS	SCRIPT-WISE LTD	PHARMEDIUM SERVICES LLC
APOTHECARY SHOP OF DEER VALLEY	PACIFIC PULMONARY SERVICES	CURA SCRIPT INC
APRIA PHARMACY NETWORK	WALGREENS LONG-TERM CARE PHARMACY #11873	ICORE HEALTHCARE
AXELACARE HEALTH SOLUTIONS LLC	BET PHARM LLC	RENAL PHARMACY SERVICES LLC
BASIC HOME INFUSION	PRIME THERAPEUTICS LLC	INFUCARE PHARM
BAYSTATE HOME INFUSION & RESPIRATORY SERVICES	VILLAGE FERTILITY PHARMACY INC	PHARMACY SERVICES INC
BAYVIEW PHARMACY INC	TARGET PHARMACY	PREFERRED RX LLC
BELL PLAZA PHARMACY	WELLDYNERX	INFUSERVE AMERICA INC
BIOPARTNERS IN CARE INC.	HDM PHARMACY LLC	ROYAL PALM COMPOUNDING PHARMACY
BIORX	NEXTRX LLC	PALM BEACH PHARMACEUTICALS INC
BIOSCRIP INFUSION SERVICES INC	CENTER PHARMACY	KABS PHARMACY
BIOSCRIP INFUSION SERVICES LLC	ANAZAO HEALTH CORPORATION	JVJ PHARMACY INC
BIOSCRIP PHARMACY	WALGREENS SPECIALTY PHARMACY #13622	RX OUTREACH INC
BIOSCRIP PHARMACY INC	CVS PHARMACY #6570	MEDICINE SHOPPE PHARMACY
BOUDREAU'S SPECIALTY COMPOUNDING	PARTNERS OF MASSACHUSETTS LLC	BELLEVUE PHARMACY SOLUTIONS
BOUVIER PHARMACY INC	WEST RIVER PHARM INC	SHARED SOLUTIONS PHARMACY
BURMAN'S APOTHECAREY LLC	ONE SOURCE HOMECARE SUPPLIES INC.	AMMED DIRECT HOME CARE PHARMACY
CALIFORNIA PHARMACY & COMPOUNDING CENTER	MATRIX CORP	KMART PHARMACY #7071
CANTRELL DRUG COMPANY	MCGUFF COMPOUNDING PHARMACY SVCS INC	CAREMARK FLORIDA SPECIALTY PHARMACY LLC
CARDINAL HEALTH	ASCO HEALTHCARE LLC	STAR MEDICAL RX
CARE PLUS CVS PHARMACY #2293	TRIPLEFIN SPECIALTY SERVICES LLC	PRESCRIPTION DISPENSING LABORATORIES INC (PDL)
CAREMARK	O'BRIEN PHARMACY	PMSI
CAREMARK ILLINOIS SPECIALTY PHARMACY LLC	PRESCRIPTION SOLUTIONS	PREMIER KIDS CARE INC
CAREMARK KANSAS SPECIALTY PHARMACY LLC	HORSEPHARM.COM LLC	TREASURE COAST PHARMACY
CAREMARK MASSACHUSETTS SPECIALTY PHARMACY LLC	CORRECT RX PHARMACY SERVICES INC	BURNHAM MCKINNEY PHARMACY #3
CAREMARK NEW JERSEY SPECIALTY LLC	GREEN VALLEY DRUGS HOME HEALTH	KINGS PARK SLOPE INC.
CAREMARK THERAPEUTIC SERVICES	CURASCRIP INC	KRS GLOBAL BIOTECHNOLOGY
CAREMARKPCS ALABAMA MAIL PHARMACY LLC	CRESCENT HEALTHCARE INC	AETNA SPECIALTY PHARMACY LLC (AKA: INTEGRATED RX CARE)
CAREMARKPCS PENNSYLVANIA MAIL PHARMACY LLC	PETCARERX	DIALYSIS CLINIC INC
CAREPLUS CVS/PHARMACY #2516	FISHER BIOSERVICES INC.	COASTAL MEDS LLC
CCS MEDICAL	CUSTOM PRESCRIPTION SHOPPE	COMPRECARE

CENTRAL ADMIXTURE PHARMACY SERVICES INC	PETNET SOLUTIONS INC.	EXCELLERX INC
CENTRAL ADMIXTURE PHARMACY SERVICES INC.	ONCOSOURCE RX LLC	G & T PHARMACEUTICALS INC
CIVIC CENTER PHARMACY	PETMEDSNMORE	CUSTOM SCRIPTS PHARMACY
CLINICAL IV NETWORK	WORKSITE PHARMACY #11578	PRIME THERAPEUTICS LLC
COMMUNITY SURGICAL INFUSION	LIBERTY HEALTHCARE PHARMACY OF NEVADA LLC	LIFE SCIENCE PHARMACY INC
CORAM ALTERNATE SITE SERVICES INC	VALLEY VET PHARMACY	PRESCRIPTIONS PLUS INC
CORAM ALTERNATE SITE SERVICES INC	PINE PHARMACY & HOME CARE PRODUCTS CENTER INC	FARMVET.COM INC
CORAMRX LLC	POSITUDES INC	FRESENIUS MEDICAL CARE RX PHARMACY
CORPORATE PHARMACY SERVICES INC	CURASCRIP INC	ALLIVET
COSTCO WHOLESALE CORP	ADVANCED CARE SCRIPTS INC	LIBERTY DIRECT SERVICES CORPORATION
CRITICAL CARE SYSTEMS	PETNET SOLUTIONS INC	KCC INC
CRITICAL CARE SYSTEMS INC	COMMUNITY PHARMACY LLC	RX DIRECT INC.
CURA SCRIPT INC	NUCLEAR DIAGNOSTIC PRODUCTS	CAREPLUS CVS/PHARMACY #2709
CVS CAREMARK #2921	PREMIER KIDS CARE INC	MAIN STREET FAMILY PHARMACY LLC
CVS PHARMACY #971	RED CROSS DRUG	RX.COM
CYSTIC FIBROSIS SERVICES INC	CUSTOM COMPOUNDING CENTERS LLC	AMERICAN HOME PATIENT
DIAMOND PHARMACY SERVICES	ROCKWELL COMPOUNDING ASSOCIATES INC	MAXOR NATIONAL PHARMACY SERVICES CORP
DIAMONDBACK DRUGS	PRECISION PHARMACY	CYSTIC FIBROSIS PHARMACY INC.
DIRECT MEDS INC	MEDCO HEALTH SOLUTIONS	LIFEMED PHARMACY LLC
DS PHARMACY INC.	MEDITECH LABORATORIES INC.	LINCARE INC
EASY CLINIC LAB & RX SHOP	MEDCO HEALTH SOLUTIONS OF INDIANA LLC	ONE STOP PHARMACY INC
ELECTRIC BOAT FAMILY PHARMACY	POSTAL PRESCRIPTION SERVICES	SAVEDIRECT RX INC
ENCLARA HEALTH	AFFORDABLE SCRIPT INC.	LINDEN CARE
ESI MAIL PHARMACY SERVICE INC	PRESCRIPTION SOLUTIONS	DAVITA RX LLC
ESI MAIL PHARMACY SERVICE INC	RXUSAPBM INC	MEDEX BIOCARE PHARMACY
ESSENTIAL PHARMACY COMPOUNDING	OLSHINS PHARMACY INC	CAREPLUS CVS/PHARMACY #2920
EXCELLE RX	SORKIN'S RX LTD	MMS SOLUTIONS
EXPRESS SCRIPTS	TRIAD ISOTOPES INC	PROMISE CARE
EXPRESS SCRIPTS	APRIA PHARMACY NETWORK	VILLAGE COMPOUNDING PHARMACY
FAMILY PHARMACY LTC	THERACOM LLC	PATIENT CARE PHARMACY INC
FIRST CALL PHARMACY LLC	PETNET SOLUTIONS INC.	CENTRIC HEALTH RESOURCES INC.
FOCUS EXPRESS MAIL PHARMACY INC	U & I INC. USA	SOLUTIONS PHARMACY INC
FREEDOM FERTILITY PHARMACY	VETCENTRIC	RELIANT PHARMACY SERVICES
FREEDOM FP FERTILITY PHARMACY	APOTHECARY BY DESIGN SPECIALTY AND RETAIL	MOUNTAIN COMPOUNDING
FRESENIUS MEDICAL CARE NORTH AMERICA	PORTLAND PROFESSIONAL PHARMACY ASSOCIATES	RIDGEWAY PHARMACY LTD
FRESENIUS MEDICAL CARE NORTH AMERICA	ACCREDO HEALTH GROUP INC	UNIQUE PHARMACEUTICALS
GRUDCO INC	AHG OF NEW YORK INC.	MASTERPHARM

HEARTLAND VETERINARY PHARMACY	PETNET SOLUTIONS INC	CUTIE PHARMA-CARE INC.
HOME CARE SERVICES INC	AMERICAN OUTCOMES MANAGEMENT LP	METRO DRUGS 3RD AVENUE CORPORATION
HOME CHOICE PARTNERS INC	GENOA HEALTHCARE	MEDFUSION RX
HOME HEALTHCARE RESOURCES INC	BIORX	ST JUDE CHILDREN'S RESEARCH HOSPITAL
HOME INFUSION SOLUTIONS D/B/A HOME SOLUTIONS	APTHORP PHARMACY	MOMS PHARMACY INC
HOME INFUSION SOLUTIONS LLC	DIPLOMAT SPECIALTY PHARMACY	ALMAC CLINICAL SERVICES LLC
HOMETECH THERAPIES INC	BIOSCRIP PHARMACY SERVICES INC.	AAPEX COMMUNITY PHARMACY INC
HOPEWELL PHARMACY	B J K INC	NATE'S SPECIALTY PHARMACY CORP
HOSPICE PHARMACIA	DIABETIC CARE SERVICES & PHARMACY	ABRAMS ROYAL PHARMACY
HPC LLC	EL REY RX INC	AMERICAN PHARMACEUTICAL GROUP INC
HUMANA PHARMACY INC	RELIANT PHARMACY SERVICES	DEGC ENTERPRISES US INC
IBA MOLECULAR NORTH AMERICA INC	BIOMED PHARMACEUTICALS INC	NEW YORK RX INC
IGG OF AMERICA INC	PHARMAHEALTH SPECIALTY/ LONG TERM CARE INC	EXPRESS SCRIPTS SPECIALTY DISTRIBUTION SERVICES
INJURED WORKERS PHARMACY LLC	HEALTH DIMENSIONS INC	BIOLOGICS INC
INNOVANT PHARMACY INC.	DIPLOMAT SPECIALTY PHARMACY	AMERICAN OUTCOMES MANAGEMENT
INTEGRATED HMO PHARMACY	PHARMACY CREATIONS	DOBBS FERRY PHARMACY
JCB LABORATORIES	NUTRISHARE INC	TRIAD ISOTOPES INC
KINDRED CARE	PETSCRIPTIONS	TROPICAL PHARMACY
KOHL'S/RX MPSS	PHARMSCRIP LLC	DUANE READE
KRESGE LEBAR DRUG & SURGICAL	HEALTHWAREHOUSE.COM	ANIMAL RX PHARMACY
KV VET SUPPLY / KENNEL VACCINE VET SUPPLY CO.	PROMPT CARE HOME INFUSION LLC	FALLON WELLNESS PHARMACY LLC
LAKEVIEW PHARMACY	THE GREAT ATLANTIC & PACIFIC TEA COMPANY INC.	HM COMPOUNDING
LEE PHARMACY INC	NUFACTOR INC	COMMCARE PHARMACY - FTL LLC
LENOX VILLAGE PHARMACY	WALGREENS SPECIALTY PHARMACY #12201	GREER PHARMACY
LIBERTY MEDICAL SUPPLY INC	KEY PHARMACY	ZOOPHARM
LOUIS & CLARK PHARMACY #135	CORAM ALTERNATE SITE SERVICES INC	KERR HEALTH #801
MANDELL'S CLINICAL PHARMACY	BIOSCRIP PHARMACY	OMNICARE CIC NEW HARTFORD
MCQUADE'S MARKETPLACE PHARMACY	VETSOURCE	SENIOR RESPIRATORY SOLUTIONS
MED PREP CONSULTING INC.	BIOSCRIP PHARMACY INC	ONCOMED PHARMACEUTICAL SERVICES
MEDAUS PHARMACY	FACTOR SUPPORT NETWORK PHARMACY INC.	AMERICAN PHARMACY SOLUTIONS
MEDFUSION RX LLC	GENERAL HOME PHARMACY	ANAZAOHEALTH CORPORATION
MEDICINE SHOPPE (THE)	RX SOUTH LLC	DR'S FOSTER & SMITH PHARMACY
MEDPRO RX INC	MEDCO HEALTH SOLUTIONS	BIOSCRIP PHARMACY INC
MEDQUEST PHARMACY	MEDSOURCE RX PHARMACY	JAT PHARMACY LLC
MEDS FOR VETS	NEW ENGLAND MAIL ORDER PHARMACY	MADISON PHARMACY ASSOCIATES INC
MPS RX NEW ENGLAND LLC	WALGREENS SPECIALTY PHARMACY LLC	SPECIALTY COMPOUNDING LLC
MYVETDIRECT.COM	ALLERGYCHOICES INC	TAP RX LLC

NEW LIFE HOME CARE INC	HEARTLAND HEALTHCARE SERVICES	APOTHECURE INC
OMNICARE CIC - SPARTANBURG	ACRO PHARMACEUTICAL SERVICES LLC	UNITED STATES PHARMACEUTICAL DISTRIBUTORS INC
OMNICARE OF RHODE ISLAND	WELLPARTNER INC	SPECIALTY THERAPEUTIC CARE
ONCOLOGY SUPPLY PHARMACY SERVICES	INJECTABLE THERAPY SERVICES INC	AXIUM HEALTHCARE PHARMACY INC
PCM VENTURE 1 LLC	CARE FOR LIFE	SERVE YOU CUSTOM PRESCRIPTION MANAGEMENT
PDC PHARMACY	HUMANA PHARMACY INC	BCP VETERINARY PHARMACY
PENTEC HEALTH INC.	IMMEDIATE PHARMACEUTICAL SERVICES INC	CAREMARK TEXAS MAIL PHARMACY LLC
PET HEALTH PHARMACY	SAN YSIDRO PHARMACY	DIABETIC CARE RX LLC
PETNET SOLUTIONS INC	JUNGLE JIM'S PHARMACY	CURASCRIPT SP SPECIALTY PHARMACY
PET'S CHOICE PHARMACY	Q PHARMA INC	FRESENIUS USA MANUFACTURING INC.
PHARMACY INCORPORATED	MEDI-PHYSICS INC	FAIRVIEW SPECIALTY SERVICES PHARMACY
PHARMACY SOUTH INC	ISORX INC	BIOPLUS SPECIALTY PHARMACY SERVICES INC.
PREMIER CARE	HOMEMED PHARMACY LLC	NMHCRX MAIL ORDER INC.
PROFESSIONAL ARTS PHARMACY	PHARMACARE PHARMACY #8414	EXPRESS SCRIPTS
PROFESSIONAL VETERINARY PRODUCTS LTD	LEE SILSBY COMPOUNDING PHARMACY	CYSTIC FIBROSIS SERVICES INC
PROMESA HEALTH PHARMACY	SOLUTIONS HOME CARE LLC	GE HEALTHCARE
PULMO DOSE PHARMACY	NEIGHBORHOOD PHARMACY	MAYO CLINIC PHARMACY
PVPL PHARMACY	STERLING MEDICAL SERVICES LLC PHARMACY	GSP LONGTERM CARE INC
R & B PHARMACY INC	STEVEN'S PHARMACY	DRUG PLACE INC
ROADRUNNER PHARMACY	UNIVERSITY COMPOUNDING PHARMACY	ELITE COMPOUNDING PHARMACY
ROOD AND RIDDLE VETERINARY PHARMACY LLC	NEW ENGLAND COMPOUNDING PHARMACY	MCKESSON MEDICAL-SURGICAL MEDI MART INC
RX CO (THE)	MILLERS OF WYCKOFF	BRADHURST SPECIALTY PHARMACY INC
RX CROSSROADS	NEW ENGLAND LIFE CARE INC	USDRUGS.COM INC.
SAVON.COM #5805	PILL STAT RX LLC	PHARMACARE SPECIALTY PHARMACY #2890
SAV-RX PHARMACY	STOKES PHARMACY	HEALTHY CHOICE COMPOUNDING PHARMACY (THE)
SELECT RX	LIBERTY MEDICAL SUPPLY OF OHIO	DAVITA RX LLC
SQA PHARMACY SERVICES	MATTHEWS VETERINARY PHARMACY	HEALIX INFUSION THERAPY
TEL-DRUG INC.	ANIMAL RX PHARMACY	VETERINARY PHARMACIES OF AMERICA
TEL-DRUG OF PENNSYLVANIA LLC	MEDCO HEALTH SOLUTIONS	HOTZE PHARMACY LP
THE COMPOUNDING CENTER	COLLEGE PHARMACY	FMC PHARMACY SERVICES
THE UNIVERSITY OF ARIZONA	CYSTIC FIBROSIS SERVICES INC	FRANCK'S COMPOUNDING PHARMACY
TRIAD ISOTOPES INC	NEXTRX INC	MAXOR PHARMACIES
UNITED STATES PHARMACEUTICAL GROUP	DRUG SOURCE INC	LIBERTY MEDICAL SUPPLY INC
UNIVERSITY PHARMACY	COSTCO PHARMACY	WOMEN'S INTERNATIONAL PHARMACY
UPS SUPPLY CHAIN SOLUTIONS INC	NORTH SHORE PHARMACY	AETNA RX HOME DELIVERY
US BIOSERVICES	ORCHARD PHARMACEUTICAL SERVICES	NEXTRX INC.
US COMPOUNDING	PACIFIC COAST PHARMACY	COVANCE SPECIALITY PHARMACY LLC

US MED INC	EASY SCRIPTS INC	LIFE EXTENSION PHARMACY INC
VET RX DIRECT	PHARMERICA	PETMED EXPRESS
WALGREENS INFUSION AND RESPIRATORY SERVICES	HEALTH TRANS PHARMACY	HEALTHSTAT RX
WALGREENS LONG-TERM CARE PHARMACY #12620	EASY SCRIPTS INC	LIVE WELL DRUGSTORE
WALGREENS MAIL SERVICE	ITC COMPOUNDING & NATURAL WELLNESS PHARMACY	HEMOPHILIA OF THE SUNSHINE STATE
WALGREENS MAIL SERVICE INC.	HOMETECH THERAPIES	MATRIX HEALTH
WALGREENS SPECIALTY PHARMACY LLC	PBM PLUS MAIL SERVICE PHARMACY	ONCOLOGY RX CARE ADVANTAGE
WAL-MART PHARMACY 10-5315	ORSINI PHARMACEUTICAL SERVICES INC	MATRIX PHARMACY LLC
WELLCARE SPECIALITY PHARMACY INC	UNITED PHARMACY SERVICES INC	MCCULLY SNYDER PHARMACY INC
WELLDYNE RX -FL	ACCUPAX LLC	MED-CARE PHARMACY
WELLNESS PHARMACY INC.	LEITER'S PHARMACY	CAREMARK FLORIDA MAIL PHARMACY LLC
WESTLAB PHARMACY INC	CURASCRIPT INC	MEDICAL ARTS PHARMACY SERVICES INC
WICKLIFFE PHARMACEUTICALS INC.	ONCOMED PHARMACEUTICAL SERVICES OF MA INC	AETNA RX HOME DELIVERY LLC
WOMEN'S INTERNATIONAL PHARMACY	US SPECIALTY CARE	HOME CARE SOLUTIONS INC.

## 4.7 Appendix–Laboratories in Connecticut

### Public Health Laboratories

Bureau of Labs New Haven Health Department	Greenwich Department of Health Laboratory
Norwalk Department of Health Laboratory	Stamford Health Department Laboratory
State Of Connecticut Biodosimetry Laboratory	

### Blood Bank Laboratories

American Red Cross Blood Services Ct Region	Bradley Memorial Hospital
Bridgeport Hospital Blood Bank	Charlotte Hungerford Hospital
Collaborative Lab Services St. Francis Campus	Collaborative Laboratory Services- Bristol Hospital
Danbury Hospital Blood Bank	Day Kimble Hospital Blood Bank
Greenwich Hospital Blood Bank	Griffin Hospital Laboratory
Hartford Hospital Blood Bank	Hospital Of Saint Raphael
Johnson Memorial Hospital	Lawrence and Memorial Hospital Blood Bank
Manchester Memorial Hospital Blood Bank	Middlesex Hospital Laboratory
Midstate Medical Center	Milford Hospital Blood Bank
New Milford Hospital	Norwalk Hospital Department of Pathology Transfusion Services
Rockville General Hospital	Sharon Hospital Laboratory
St Mary's Hospital Blood Bank	St Vincent's Medical Center Blood Bank
Stamford Hospital Dept. Of Laboratories	The Hospital Of Central Ct At N.B.G. Blood Bank
UConn Health Center / Dempsey Hospital	Waterbury Hospital Health Center Blood Bank
William W. Backus Hospital Transfusion Service	Windham Community Memorial Hospital
Yale-New Haven Hospital Blood Bank	Yale-New Haven Shoreline Medical Center

### Hospital Laboratories

Bradley Memorial Hospital Pulmonary Lab	Bridgeport Hospital Laboratory
Bridgeport Hospital Laboratory Annex	Charlotte Hungerford Hosp. Blood Gas Lab
Charlotte Hungerford Hospital Lab	Clinical Laboratory Partners, Hartford
Connecticut Children's Medical Center	Danbury Hospital
Danbury Hospital Laboratory	Danbury Hospital - Respiratory Services
Danbury Hospital Laboratory	Day Kimball Hospital
Dept. Vet Affairs - Vet Home & Hospital	Gaylord Hospital Pulmonary Laboratory
Greenwich Hospital Blood Gas Lab	Greenwich Hospital Cytology Laboratory
Greenwich Hospital Laboratory	Greenwich Hospital Pavilion Lab
Griffin Hospital Laboratory	Griffin Hospital - Pulmonary Lab
Hartford Hospital	Hartford Hospital Point of Care Testing
Hospital of St Raphael - Pathology Department	Hospital For Special Care Blood Gas Lab
Hospital Of Central Connecticut at Bradley Memorial Hospital	Hartford Hospital Transplant Immunology Lab
Hungerford Emergency Medical Care @ United Healthcare	John Dempsey Hospital Blood Gas Laboratory
John Dempsey Hospital Laboratory	Johnson Memorial Hospital Laboratory
Johnson Memorial Outpatient Laboratory	Lawrence & Memorial Hospital

Manchester Memorial Hospital - Blood Gas Lab	Manchester Memorial Hospital
Manchester Memorial Hospital – Vernon	Manchester Memorial Hospital Hartford Campus
Middlesex Hospital Laboratory	Middlesex Hospital Outpatient Center Lab
Middlesex Hospital Shoreline Medical Center Lab	Middlesex Medical Center At Marlborough
Midstate Med Center Pulmonary Laboratory	Midstate Medical Center
Milford Hospital Inc. Dept. Of Pathology	Milford Hospital Pulmonary Lab
New Britain General Satellite Lab	New Milford Hospital Laboratory
New Milford Hospital Respiratory Care	Norwalk Hospital
Pequot Health Center	Rockville General Hospital
Sharon Hospital Laboratory	Silver Hill Hospital
Southbury Training School Laboratory	St Vincents Med Center Pulmonary Lab
St Vincents Medical Center	St. Mary's Hospital
Stamford Hospital Pulmonary Lab	Stamford Hospital Lab
The Hospital Of Central Ct At New Britain General	Tully Health Center Laboratory
UCHC, John Dempsey Hospital	UCHC, Towne Park Plaza Satellite Lab & Patient Service Center
Waterbury Hospital Center	Waterbury Hospital Lab Of Naugatuck
West Hartford Surgery Center	William M Backus Hospital Lab
William W Backus Hospital Pulmonary Laboratory	Windham Community Memorial Hospital
Wm W Backus Hospital Std Clinic Lab, The	Yale New Haven Hospital-Nuclear Medicine
Yale-New Haven Hospital, Laboratory Med.	YNHH- Med Onc Treatment Center / Lab Med
YNHH/Lab Med/Prenatal Testing Lab	YNHH-Shoreline Medical Center / Lab Med

### Independent Clinical Laboratories

American Red Cross Blood Services	Ameripath New York
Ameripath Northeast	Caris Cohen Dx., P.C.
Center For Advance Reproductive Services	Clinical Laboratory Partners
Clinical Laboratory Partners Gaylord	Collaborative Lab Services - Burgdorf Campus
Collaborative Lab Services - Bristol Hospital Lab	Collaborative Lab Services - St. Francis Campus
Conn Pathology Labs Inc.	Cornell Scott Hill Health Center
Center For Advance Reproductive Services	Dermatopathology Laboratory Of New England, PC
Diagnostic Hematology Lab	Diagnostic Hematology Laboratory
Dianon Systems Inc.	Fair Haven Community Health Clinic
Gary A. Letts, Md,	General Clinical Research Center Core Lab
Glenville Medical Laboratory	Graham-Massey Analytical Lab
Greenwich Fertility And Ivf Center, PC	Grove Hill Med Center Laboratory
Gyn Endocrine Laboratory	Hematology Oncology PC
Ikonisys, Inc	Ipsogen
Js Genetics	L2 Diagnostics At Yale University
Laboratory Corporation Of America	Laboratory Of Personalized Health
Letts Laboratories	Milford Medical Laboratory Inc.
Mira Dx Inc.	Molecular Diagnostic Laboratory,

Oral Pathology Diagnostic Service - Division Of Oral Pathology	Orion Laboratory Inc
Pathology Center of Connecticut,	Pathology and Laboratory Services
Pfizer Pharmacogenomics Laboratory	Prohealth
Planned Parenthood Of Connecticut	Prime Healthcare Pulmonary Lab
Pulmonary Association Of New Haven, P.C.	Quest Diagnostics (multiple sites)
Reproductive Medicine Associates Of Connecticut	Reproductive Medicine Associates Of Ct Laboratory
Reproductive Medicine Associates of Ct PC	South Central Rehabilitation Center
State of CT - Department Of Public Health	State of CT - DPH Multi-Site
Student Health Laboratory-UConn	UConn School Of Medicine Lab
Yale Dermatopathology Laboratory	Yale Immunodermatology-Yale University School Of Med - Lci 508-509
Yale In-Vitro Fertilization Laboratory	Yale Ob-Gyn Sperm Physiology Laboratory
Yale Pathology Laboratories	Yale U. School Of Med., Reproductive & Placental Research
Yale University School of Med - Reproductive & Placental Research	Yale University School of Medicine

### Physician Office Laboratories

Connecticut Oncology and Hematology, LLP	Adult & Pediatric Dermatology Spec PC	Adult Pediatric Dermatology Specialist
Advanced Dermatology	Advanced Dermcare PC	Associated Women's Health Specialists PC
Avon Pediatrics	B S Labs, John A Salerno, MD	Barry J. Richter MD PC
Bey St Pediatrics PC	Branford Internal Medicine	Branford Pediatrics & Allergy PC
Branford/No Branford Pediatrics, PC	Branford/North Branford Pediatrics PC	Cancer Center Of Central Connecticut,
Cancer Center Of Central CT	Centcam	Center For Fertility & Women's Health, PC
Center For Fertility And Women's Health, PC	Center For Pediatric Medicine	Charter Oak Walk-in Med Center PC
Childrens' Medical Assoc.	Children's Medical Group Of Greenwich	Cmg Infusion Clinic
Connecticut Dermatology Group PC	Connecticut Fertility Associates	Connecticut Medical Group
Connecticut Multispecialty Group PC Hematology/Oncology	Connecticut Multispecialty Group, P.C.	Connecticut Oncology And Hematology, LLP
Connecticut Oncology Group PC	Connecticut Surgical Group PC	CorPCare Occupational Health Center
Danbury Medical Group	Danbury Office Of Physician Services	Danbury Internal Medicine Assoc. PC
David M. Taraskevich MD	Dennis L Feinberg MD	Dennis P. Bekeny MD
Dermatology Assoc. Of Western Ct PC	Dermatology Associates Of Waterbury PC	Dermatology Associates Of Yale, PC
Dermatology Assoc. Of Glastonbury	Dermatology Center PC	Dermatology In Clinton
Dermatology Surgical Associates	Diagnostic Hematology Laboratory	Diagnostic Hematology Laboratory
Diane L Fountas MD	Drs. Ahearn Cigno And Galban	E A Clerkin And H R Maresh MDs
East Haven Pediatrics, P.C.	Eastern Connecticut Dermatology	Eastern Ct Hematology & Oncology Associates
Ellen B Milstone MD	Ellington Behavioral Health	Family Practice Associates MD
Farmington Pediatrics - Mary A Simon MD	Frank M. Castiglione Jr. MD	Gastroenterology Center Of Connecticut, P.C.

Greater Bridgeport Urology Center, PC	Greater Hartford Women's Health Associates	Greenwich Pediatric Associates
Greenwich Urological Associates, P.C.	Grove Hill Medical Center, PC	Guilford Pediatrics
Gyn Center For Women's Health	Hamden Pediatrics	Hartford Gyn Center
Harvey E. Armel	Hematology & Oncology Associates Of Greenwich	Internal Medicine Associates Of Darien
Internal Medicine Of Clinton	Ivan S. Cohen, MD, P.C.	J Robert Shapiro MD
Jefferson Radiology	Jeffrey D Small MD	Jeffrey N. Alter MD
Joseph Bowen MD, PC	Julia B Sabetta MD	Kalman L. Watsky MD
Kenneth L. Burke, O.D	Lawrence J Fortier MD	Leonard A Fasano MD
Long Ridge Dermatology	Mahmood H. Yekta	Med Specialists Of Ffd/Cooper-Burd Lab
Medical Associates Of Stamford	Medical Specialists Of Fairfield	Michael R Sharon MD
Middlesex Pediatric Assoc.	Middlesex Urology PC	Milford Pediatric Group
Milton Armm	Neil Stein MD	New Britain Pediatric Group
New Canaan Medical Group Inc.	New England Dermatology Associates	New England Fertility Institute
New England Pediatrics	New England Pediatrics, LLP	New Fairfield Family Practice
New London Cancer Center Inc.	North Central Oncology Hematology Practice	Norwich G I Histology Laboratory
Oncology & Hematology Care Of Connecticut	Oncology Assoc. Of Bridgeport	Oncology Assoc. Of Bridgeport PC
Oncology Associates - Southington Lab	Oncology Associates Avon Lab	Oncology Associates Main Laboratory
Oncology Associates Willimantic Lab	Oncology & Hematology Associates PC	Orange Pediatrics And Adolescent Medicine
Pediatric Assoc. Of Western Ct	Pediatric Associates Of Branford	Pediatric Healthcare Associates
Pediatric Healthcare Associates / Fairfield County Healthcare	Pediatric Medicine Of Wallingford, LLP	Pediatrics Associates Of New London
Pediatrics Plus, P.C.	Peter Demir MD	Phys For Womens Health/Sharon Ob-Gyn
Physicians For Womans Health D/B/A The OB/GYN Specialty Group	Physicians For Women's Health	Pioneer Valley Pediatrics Inc.
Plainfield Walk-In Medical Center	Primed	Pro-Health Drs. Macgilpin, Siraco, Harvey, Veale
Prohealth Physicians PC/Childrens Med Grp	Prohealth Physicians Laboratory	Prohealth Physicians/Children's Med Grp
Quinnipiac Medical Of Branford	Rheumatology Associates Of New Haven	Ridgefield Pediatric Associates
Ridgefield Primary Care	Robert A Woodbury MD	Rudy T Andriani MD
Seaport Dermatology	Sheard And Drugge PC	Shoreline Family Practice
Shoreline Obstetrics & Gynecology	Shoreline Ped & Adolescent Med PC	Shoreline Pediatrics & Adolescent Med
Simsbury Pediatrics	Skincare Physicians Of Fairfield County	Soundview Medical Associates
South Eastern Ct Medical Assoc.	Southern Connecticut Urological Associates	Southington Family Medical Center
St Francis Center For Occupational Health	St Francis Occupational Health Center	Stephen Spear MD & Stuart Nerzig MD, PC
Steven A Gaudio MD	Summit Medical Center Inc.	Summit Women's Center Inc.
Sydney Z Spiesel PhD MD	Thames Urology Center	The Boyd Center For Integrative Health
The Connecticut Dermatology Group, PC	The Pediatric Center	Urological Associates Of Bridgeport PC

Urology Associates Of Danbury PC	Urology Associates Of Norwalk PC	Urology Center
Urology Center PC, The	Urology Clinic Of Greenwich, PC, The	Urology Group PC
Urology Specialists, PC	Valley Pediatrics Of Greenwich	Vernon Pediatrics Healthwise
Victoria Blank MD PC	Walsh-Brunetti	William A Notaro MD
Willows Pediatric Group	Wilton Medical Associates, PC	Windham Medical Group PC
Witney Pediatric & Adolescent Med PC	Womens Medical Group, PC	Woodland Womens Health Associates
Yale Mohs Surgery Laboratory	Yale Pediatric Hematology / Oncology	

## 4.8 Appendix—Community Health Centers in Connecticut

<p>Charter Oak Health Center <a href="http://www.thecharteroak.org">http://www.thecharteroak.org</a></p>	<p>Greater Danbury Community Health Center</p>
<p>Community Health &amp; Wellness Center of Greater Torrington <a href="http://www.chwctorr.org">http://www.chwctorr.org</a></p>	<p>Generations Family Health Center <a href="http://www.genhealth.org/">http://www.genhealth.org/</a></p>
<p>Community Health Center, Inc. <a href="http://www.chc1.com">http://www.chc1.com</a></p>	<p>Norwalk Community Health Center <a href="http://www.norwalkchc.org/">http://www.norwalkchc.org/</a></p>
<p>Community Health Services <a href="http://www.chshartford.org/">http://www.chshartford.org/</a></p>	<p>Optimus Health Center <a href="http://www.optimushealthcare.org/">http://www.optimushealthcare.org/</a></p>
<p>Cornell Scott Hill Health Center <a href="http://www.hillhealthcenter.com/">http://www.hillhealthcenter.com/</a></p>	<p>Southwest Community Health Center <a href="http://www.swchc.org/">http://www.swchc.org/</a></p>
<p>East Hartford Community HealthCare <a href="http://www.ehchc.org/">http://www.ehchc.org/</a></p>	<p>StayWell Health Care <a href="http://www.staywellhealth.org/">http://www.staywellhealth.org/</a></p>
<p>Fair Haven Community Health Center <a href="http://www.fhchc.org/">http://www.fhchc.org/</a></p>	<p>United Community &amp; Family Services <a href="http://www.ucfs.org/">http://www.ucfs.org/</a></p>

## 4.9 Appendix—Insurance Companies

Connecticut HMOs	Service Areas
Aetna Health, Inc. 151 Farmington Ave Hartford, CT 06156 1-800-323-9930	Statewide
Anthem HealthPlans, Inc. dba Anthem Blue Cross & Blue Shield of Connecticut 370 Bassett Road North Haven, CT 06473 1-203-239-4911	Statewide
Cigna Health Care of Connecticut, Inc. 900 Cottage Grove Road, A-118 Bloomfield, CT 06152-1118 1-800-345-9458	Statewide
ConnectiCare, Inc. 175 Scott Swamp Road Farmington, CT 06032-2574 1-800-723-2986	Statewide
Health Net of Connecticut, Inc. One Far Mill Crossing P.O. Box 904 Shelton, CT 06484-0944 1-800-441-5741	Statewide
Oxford Health Plan (CT), Inc. 48 Monroe Turnpike Trumbull, CT 06611 1-800-444-6222	Statewide
<b>Companies Approved Individual Health Insurance Policies</b>	
Aetna Life Insurance Company 151 Farmington Avenue Hartford, Ct 06156 (800) 694-3258 (860) 582-9629	Connecticare Insurance Company 175 Scott Swamp Road Farmington, Ct 06032 (866) 999-7656
American Republic Insurance Company Po Box 1 Des Moines, Ia 50301 (515) 245-2000	Connecticut General Life Insurance Company (Cigna) 922 Cottage Grove Road Hartford, Ct 06152 (866) 438-2446
Anthem Health Plans, Inc. Db Anthem Blue Cross Blue Shield Of Ct 370 Basset Road North Haven, Ct 06473 (800) 331-0150 (866) 503-2829	Golden Rule Insurance Company 712 Eleventh Street Lawrenceville, Il 62439-2395 (800) 444-8990
Celtic Insurance Company Sears Tower 233 South Wacker Drive, Suite 700 Chicago, Il 60606-6393 (800) 779-7989	Time Insurance Company Po Box 3050 Milwaukee, Wi 53201 (800) 394-4296

<b>State Sponsored Individual Health Programs</b>	
Charter Oak Health Plan Offers Affordable Individual Coverage With No Pre-Existing Condition Limitations (877) 772-8625 <a href="http://www.Charteroakhealthplan.Com">Http://Www.Charteroakhealthplan.Com</a>	Husky Health Plan Healthcare For Uninsured Kids And Youth (877) 284-8759 <a href="http://www.Huskyhealth.Com">Http://Www.Huskyhealth.Com</a>
Health Reinsurance Association Offers Coverage To Individuals With Pre-Existing Medical Conditions Through The Connecticut High-Risk Pool. (800) 842-0004 <a href="http://www.Hract.Org">Http://Www.Hract.Org</a>	
<b>Dental Policies</b>	
Aetna Life Insurance Company <i>(Only Available If Purchased With Aetna Individual Medical Plan)</i> (800) 694-3258	Renaissance Life & Health Insurance Company Of America * (800) 963-4596
Dentegra Insurance Company * <i>Available To Aarp Members Only.</i> (866) 583-2085	Starmount Life Insurance Company (Alwayscare) (888) 729-5433
Mega Life & Health Insurance Company * (Marketed Through Healthmarkets) (800) 527-5504	Stonebridge Life Insurance Company * (Encore Dental) (800) 758-2958
<b>Vision Policies</b>	
Mega Life & Health Insurance Company (800) 527-5504	
<b>Cancer Policies</b>	
American Family Life Assurance Company (800) 366-3436	Combined Insurance Company Of America (800) 225-4500
American Fidelity Assurance Company (800) 654-8489	John Alden Life Insurance Company (404) 633-5353
Assurity Life Insurance Company (866) 289-7337	Loyal American Life Insurance Company (800) 752-7818
American Heritage Life Insurance Company (800) 521-3535	Manhattan Life Insurance Company (800) 669-9030
Colonial Life & Accident Insurance Company (800) 845-7330	

\* Indicates a group plan marketed to individuals. Membership dues or other association fees may apply

<b>Companies with Approved Small Employer Health Insurance Policies*</b>	
Aetna Life Insurance Company 860-273-0123	Mega Life and Health Insurance Company 800-527-5504
Aetna Health, Inc. 860-273-0123	Metropolitan Life Insurance Company 212-578-2211
American Medical and Life Insurance Company 516-822-8700	Mid-West National Life Insurance Company of Tennessee 800-733-1110
Anthem Blue Cross & Blue Shield of Connecticut 203-239-4911	New England Life Insurance Company 617-578-2000
CIGNA Healthcare of Connecticut, Inc. 800-456-6575	Oxford Health Insurance Inc. 800-889-7658
Connecticut General Life Insurance Company 860-226-6000	Oxford Health Plans (CT) Inc. 800-449-8880
CONNECTICARE, Inc. 860-723-2986	Trustmark Life Insurance Company 800-666-6977
Guardian Life Insurance Company of America 212-598-8000	Union Security Insurance Company 800-733-7879
Health Net Insurance of Connecticut, Inc. 203-402-4200	United Healthcare Insurance Company 860-702-5000
John Alden Life Insurance Company 800-800-1212	

\*Self-Employed individuals may qualify for coverage as a small employer

### **Underwriting guidelines for Small Employer Group Plans**

- Insurers listed above must offer all small group plans on a guaranteed issue basis to groups with (2) employees to (50) employees.
- Employer groups with (1) employee, including self-employed individuals, are subject to medical underwriting based on the carrier's underwriting guidelines. Individuals who do not meet the underwriting guidelines are eligible to apply on a guaranteed issue basis for the carrier's statutory small employer plan (Blue Ribbon) or through the MEHIP program listed below.

### **Self-employed Individuals - Criteria for eligibility as a Small Employer Group Plan**

- Must be actively engaged in business for at least three consecutive months.
- Must have a valid Connecticut Tax ID #.
- Must be actively at work for a minimum of 30 hours per week.

## 4.10 Appendix—Danbury Hospital’s HealthLink

Danbury is a distinct geographic part of western Connecticut, somewhat separate from the rest of the state. This geographic segregation inherently ties local practitioners to the city’s one hospital, Danbury Hospital. . In cooperation with many of the area practices, laboratories and pharmacies, Danbury Hospital has developed a working HIE. The system now incorporates over 250 providers, 500 support staff and 500,000 patient records equating to approximately one-third of the medical community in the area.

The program is a suite of products that strive to improve quality, reduce health care costs and facilitate business growth. It serves three purposes: A HIE through a patient-centric technology platform; a repository for critical patient information, including medications, allergies, diagnoses, test results, and others; and a physician toolkit to easily allow ordering and tracking of tests, e-Prescribing, access to clinical documentation and communications between providers involved in a patient’s treatment.

The technology of the HIE is robust and flexible, with the following benefits:

- The platform is built on standards-based technologies
- It has achieved interoperability with existing and emerging data standards
- It can support both centralized and federated models
- The solution is light-weight—a provider needs only access to the Internet to access
- Will connect to the State HIN and NHIN when available
- Provides access to DICOM images
- Provides patient privacy and individual choice
- HIPAA-compliant.

The HIE incorporates several services, including:

- HealthLink Print/Fax—Print/fax capabilities for providers who do not have electronic capabilities
- HealthLink VHR—A Virtual Health Record (VHR); a migration from their legacy system which has 80-90% adoption
- HealthLink eRx—ePrescribing, with a goal for 80% adoption by the end of 2010 and 100% by the end of 2011
- HealthLink EMR—An Electronic Medical Record including an “EHR lite” offering
- HealthLink EMR Connector —A last mile two-way task interface
- HealthLink Image Exchange—An imaging and reports repository exchange, which is expected to launch later in 2010

The success in adoption has been partially due to negotiated contracts with multiple vendors for EHR connector interfaces at a significantly reduced price. These negotiated prices have allowed practices to integrate with the HIE for considerably less than custom designed interfaces and has barred any one vendor from blocking other vendors from service.

The Program has identified the following benefits for the community:

- Enhance patient safety through e-Rx
  - Drug interaction and allergy checking
  - Legible prescriptions
  - Spans all settings, Inpatient, Emergency Department, Clinics, Practices
  - Improve office workflow efficiency

- Less paper to handle, drives tasking within the practice
- Reduce costs
  - Eliminate paper charts and associated overhead expenses for providers
  - Reduces duplicative testing for patients
  - Reduces costs for Medicare, Medicaid, insurers, consumers
  - Easily collaborate with other health care stakeholders in the community
  - Immediately route clinic documents to treating providers
  - Speeds delivery of care and care decision making

The consent model meets the needs of all the stakeholders that are involved in the process. All information is tracked or stored at the central repository, allowing access at any time by any authorized provider or entity, but also allows patients to opt-out of the project if they so choose.

## 4.11 Appendix— The Medicaid Transformation Project: A Health Information Exchange pilot through the Department of Social Services

The Health Information Exchange project was part of the Medicaid Transformation Grant awarded to the Department of Social Services (DSS) in February, 2007. In January 2009, the DSS contracted with eHealthConnecticut to conduct a pilot project that would demonstrate the technology, functionality, and benefits of Health Information Exchange (HIE) for healthcare providers, purchasers, payers, consumers, and health policy makers.

eHealthConnecticut selected Mysis Open Source Solutions (MOSS) as the vendor platform for the HIE pilot. For the pilot, the newer MOSS 2.0 version is implemented. MOSS platform 2.0 will offer additional functionality to pilot participants. Many of these components align with the meaningful use requirements. Functions include:

- e-Prescribing
- e-Referrals
- Discrete Data Display using Clinical Data Repository
- Secure Messaging
- Radiology Imaging Viewer
- Lab Routing
- Reporting (Public Health and Quality reporting, Population stats, etc.)
- Registry
- Meaningful Use Plug-ins

Version 2.0 is currently operating live with the central servers and at Harford Hospital. Hartford Hospital, a pilot participant, is feeding actual patient registration and discharge summary data to the HIE central server and storing the data on their secure edge server. The process is underway to update the other pilot participants' servers with version 2.0. The other pilot participants include:

- Saint Francis Hospital, Hartford
- Lawrence and Memorial Hospital, New London
- Community Health Center, Inc., Middletown
- Staywell Health Center, Waterbury

Participants have connected to the HIE platform and tested patient registration and Continuity of Care Document (CCD) registration transactions, but must repeat testing once version 2.0 is installed. Lawrence and Memorial Hospital has completed their version 2.0 interface programming and will begin testing before going live. Lawrence and Memorial Hospital will be contributing Emergency Department encounter summaries to the pilot HIE. eHealthConnecticut is working with Saint Francis, Staywell, and CHC on the version 2.0 installation process. The HIE pilot objective is to have all participants, representing three communities (New London County, Hartford, and greater Waterbury) live by the end of the year.

Installation of the MOSS version 2.0 platform has been more difficult than anticipated. Several weeks were required to configure the platform, including linkages between each of the several platform components, and to test and debug the system. Technical details continue to create difficulties as participants and their vendors are taking longer to set up edge servers, develop and test interfaces, and implement encryption software. eHealthCT is concerned that version 2.0 will bring about additional concerns and technical issues.

eHealthConnecticut has completed several activities needed to operate the HIE. Training courses and website education resources were developed and are posted on their website:

(<http://ehealthconnecticut.org/HIE.aspx>). Courses include:

- Pilot Program overview

- Privacy, patient consent, and sensitive health information
- HIE portal: clinical user guide
- HIE technical requirements
- HIE portal: administrator user guide (not online)
- Integrating with eHealthConnecticut's HIE: what your organization can expect

eHealthConnecticut has developed the privacy and security policies for the pilot health information exchange. These policies provide basic, minimum policy requirements for data exchange during the pilot phase of the HIE. The HIE policies are as follows:

- Compliance with Applicable Law and eHealthConnecticut HIE Policy
- Notice of Privacy Practices
- Individual Participation and Control of Information Posted to the HIE
- Uses and Disclosures of Health Information
- Information Subject to Special Protection
- Minimum Necessary
- Workforce, Agents, and Contractors
- Amendment of Data
- Mitigation
- Technical Security Safeguards and Controls

The HIE privacy and security policies can be found on the eHealthCT website at <http://ehealthconnecticut.org/LinkClick.aspx?fileticket=rnjji59yKQk%3d&tabid=75>.

eHealthConnecticut finalized and executed Data Use and Reciprocal Support Agreements (DURSA) with all the pilot participants. The purpose of the DURSA is to provide a legal framework that will enable participants to exchange data

## 4.12 Appendix—Excerpt from the MEMORANDA OF AGREEMENT Between The Department of Public Health And University of Connecticut Health Center for Evaluation Services

STATE OF CONNECTICUT

MEMORANDA OF AGREEMENT  
between

The Department of Public Health and

The University of Connecticut Health Center

### 1. Purpose and Parties

- a. This Memorandum of Agreement (hereinafter "Agreement") is for the purpose of conducting comprehensive evaluation for the Health Information Technology and Exchange (HITE) Cooperative Agreement to:
  - i) Assess the process of developing the Connecticut HITE Agency, and its Board of Directors.
  - ii) Demonstrate the economic and quality outcomes of health information exchange investments and the effects of these investments on providers and consumers.
  - iii) Determine what is currently working and what needs to be improved.
  - iv) Disseminate these lessons learned broadly within the state and establish processes for continuous improvements.
  - v) Monitor and track meaningful use Health Information Exchange capabilities in the state.
- b. The parties to this Agreement are the State of Connecticut Department of Public Health (hereinafter "DPH") and the University of Connecticut Health Center (hereinafter "UCHC").
- c. Background: The Health Information Technology and Exchange Cooperative Agreement was created through a Cooperative Agreement from the United States Department of Health and Human Services Agency Office of the National Coordinator. The purpose of the Cooperative Agreement is for planning and building a coordinated, sustainable statewide Health Information Exchange (HIE) system for Connecticut.

### 2. Definitions

For the Purpose of this Agreement, the following definitions shall apply:

- a. **American Recovery and Reinvestment Act (ARRA)**: This statute includes the Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009 that sets forth a plan for advancing the appropriate use of health information technology to improve quality of care and establish a foundation for health care reform. Also, referred to as the Stimulus or the Recovery Act.
- b. **Department of Social Services (DSS)**: DSS is authorized by the Centers for Medicare and Medicaid Services, through ARRA, to administer incentives to eligible professionals and hospitals for meaningful use of electronic health records. DSS is a partner of DPH for the Health Information Technology and Exchange Cooperative Agreement Health.

- c. **eHealthConnecticut:** eHealthConnecticut is the designated Regional Extension Center, through ARRA, to provide technical assistance and education in the selection, acquisition, implementation, and meaningful use of an electronic health record to improve health care quality and outcomes. eHealthConnecticut is a partner of DPH for the Health Information Technology and Exchange Cooperative Agreement Health.
- d. **Funding Opportunity Announcement:** A publicly available document by which a Federal Agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, requests for applications, notices of funding availability, solicitations, or other names depending on the Agency and type of program.
- e. **Health Information Exchange (HIE):** The mobilization of healthcare information electronically across organizations within a region, community or hospital system.
- f. **Health Information Technology and Exchange Advisory Committee (HITE-AC):** Advises the DPH on the development and implementation of the HITE Cooperative Agreement.
- g. **Connecticut Health Information Technology and Exchange Agency (HITE-CT or Agency):** From January 2011, the Agency and its Board of Directors will fulfill the development and implementation of the health information exchange in Connecticut. The Agency will replace the Health Information Technology and Exchange Advisory Committee.
- h. **Health Information Technology and Exchange Cooperative Agreement:** The DPH has entered into an agreement with the Office of the National Coordinator to develop strategic and operational plans for the implementation of a statewide HIE.
- i. **National Program Evaluation:** ONC will conduct a national program evaluation and offer technical assistance for state-level evaluations in an effort to implement lessons learned to ensure appropriate and secure HIE resulting in improvement in quality and efficiency.
- j. **Office of the National Coordinator (ONC):** Statutorily created by the HITECH Act and is located with the U.S. Department of Health and Human Services. ONC serves as the principal federal entity charged with coordinating the overall effort to implement a nationwide health information technology infrastructure that allows for the electronic use and exchange of health information.

### 3. Term Of Agreement

This Agreement shall begin on **July 1, 2010** and shall terminate on **March 14, 2014**, unless extended by Amendment.

### 4. Cancellation

Either Party may cancel this Agreement, without cause, by providing written notice of such intention to the other party with thirty (30) days advance notice.

### 5. Statutory Authority

The statutory authority for the agencies to enter into this Agreement is as follows:

- a. for the DPH, Connecticut General Statutes §§ 4-8 and 19a-2a;
- b. for the UCHC, Connecticut General Statutes § 10a-104.

### 6. Funding Availability

DPH assumes no liability for payment under the terms of this Agreement until and unless any federal/state funds for this Agreement are authorized and available.

## **7. Budget Compliance**

- a.** The University of Connecticut Health Center shall submit a budget of estimated costs to include staff to be assigned and their credentials, approximate hours needed and hourly costs, as applicable to the provisions of Section 9: Responsibilities of University of Connecticut Health Center below.
- b.** Expenditures under this Agreement must be in accordance with the budget approved in writing by DPH.
- c.** Any increase in a budget line item in excess of 10% of the maximum amount allowed under the approved budget shall require prior written approval by DPH.

## **8. Responsibilities of DPH**

- a.** Monitor the progress of the activities conducted by UCHC under this Agreement.
- b.** Assist UCHC's Principal Investigator in providing quantitative data.
- c.** Receive and review required expenditure reports pursuant to Section 7 of this Agreement.

## **9. Responsibilities of University of Connecticut Health Center**

The UCHC agrees to:

- a.** Conduct stakeholder interviews, as required.
- b.** Develop, conduct, and analyze multiple surveys to measure metrics as described by the Strategic and Operational Plans, federal guidelines, and subsequent ONC documents.
- c.** Coordinate with the ONC's National Program Evaluation as stated in the Funding Opportunity Announcement and leverage technical assistance from ONC for Connecticut's evaluation in an effort to implement lessons learned to ensure appropriate milestone achievements.
- d.** Review and measure the collaboration, coordination and communication among DPH, DSS, and eHealthConnecticut, as well as the Health Information Technology Advisory Committee, subsequent Advisory Board of the CT HITE Agency, and other key stakeholders, with respect to CT-HITE Cooperative Agreement.
  - i)** Develop protocols and tools for collecting evaluation information and define details of the evaluation process.
  - ii)** Measure the effectiveness of the HITE Advisory Board's investment and leadership for the HITE-CT Agency's success.
  - iii)** Evaluate how the HITE-CT Agency is developed as a quasi-public agency.
  - iv)** Create a measure for assessing the "value proposition" to garner support from legislators, consumers, providers, and others.
  - v)** Assess the synergy created by the three ARRA funded projects and efforts related to health information technology in Connecticut.
- e.** Continuous evaluation and reassessment of the State's Strategic and Operational Plan.
- f.** Analyze issues and challenges.
- g.** Assess the effectiveness of the DPH and the HITE-CT Agency in furthering information exchange capability within the state.
- h.** Meet reporting and performance requirements specified in the State HIE Cooperative Agreement, Federal Program Information Announcements and subsequent ONC

documents. Additional requirements shall be identified during the development of the Strategic and Operational Plans.

- i. Report on quality improvement through tracking key performance measures.
- j. UCHC will provide the following deliverables:
  - i) Annual report on the establishment of HITE-CT Agency and/or its progress.
  - ii) Quarterly formative evaluation reports.
  - iii) Annual evaluation report.
  - iv) Attendance at the CT-HITE Advisory Committee meetings, HITE-CT Agency meetings, meetings between DPH, DSS and eHealthConnecticut as related to this initiative as well as additional meetings as deemed appropriate.

**10. Reporting Requirements**

- a. UCHC shall submit to DPH **written deliverables, progress and financial reports** according to the following schedule each year for this Agreement:

REPORTING PERIOD	REPORTS DUE BY
January 1 <sup>st</sup> through March 31 <sup>st</sup>	April 15 <sup>th</sup>
April 1st through June 30th	July 15 <sup>th</sup>
July 1st through September 30th	October 15 <sup>th</sup>
October 1st through December 31st	January 15 <sup>th</sup>

- b. UCHC shall submit to the DPH a **written final financial Expenditure Report** detailing all program costs, no later than 30 days after completion of all scheduled work under this Agreement or after expiration of this Agreement, whichever is earlier.

**11. Subcontractors**

- a. Written approval must be obtained from DPH, prior to entering into subcontracts. Any subcontracts made pursuant to this contract, must require the subcontractor to comply with all provisions of this original contract, as may be subsequently amended.

**12. Unspent Funds**

Any funds unspent upon termination of this Agreement will be returned to the DPH within 90 days after the date of termination.

**13. Revisions and Amendments**

- a. A formal amendment, in writing, shall not be effective until executed by both parties to this Agreement and, where applicable, the Attorney General.
- b. Such amendments shall be required for extensions to the final date of the Agreement period and changes to Terms and Conditions of this Agreement, including but not limited to revisions to the maximum Agreement payment, to the unit cost of service, to the Agreement's objectives, services, or plan, to due dates for reports, to completion of objectives or services, and to any other Agreement revisions determined material by the DPH.
- c. No amendments may be made to a lapsed Agreement.

**14. Delinquent Reports**

- a.** UCHC shall submit reports as required by the DPH and by the designated due dates identified in this agreement.
- b.** After notice to the UCHC and an opportunity for a meeting with a DPH representative, DPH reserves the right to withhold payments for services performed under this Agreement, if the DPH has not received acceptable progress reports, expenditure reports, refunds, and/or audits as required by this Agreement or previous agreements for similar or equivalent services UCHC has entered into with the DPH

## 4.13 Appendix— HIE Communications Plan

This communications plan is designed to support activities related to the HITE-CT initiative and to the extent possible support other associated health IT and e-health initiatives. This plan leverages resources to coordinate communications efforts with eHealthConnecticut, the Connecticut Department of Social Services, the Office of the National Coordinator, the Centers for Medicare and Medicaid Services, as well as any and all national and Connecticut-specific health reform efforts.

All communications, education and public outreach efforts produced by the HITE-CT must be:

- Accurate, honest and transparent,
- Responsive to the needs of HIE stakeholders,
- Up-to-date at all times
- Coordinated with appropriate HIE partners, such as eHealthConnecticut and CT DSS.

### 1. Communications Goals

Coordinated, collaborative communication is foundational to the development of a successful HIE in Connecticut. Therefore, the goals of this communications plan are to:

- Build consumer and stakeholder confidence and trust in Connecticut's HIE by informing them about the benefits of electronic health records and health information exchange as well as about protections in place to ensure the privacy and security of their health information.
- Establish an effective statewide network of EMR/HIE communications channels that build on existing relationships and create new relationships between consumers, health care providers, hospitals and other relevant audiences.
- Coordinate and integrate multi-directional communication efforts with consumers and stakeholders from across the health care continuum, particularly eHealthConnecticut, as the Regional Extension Center, and the Connecticut Department of Social Services as the CMS state entity.

### 2. Communications Objectives

There exists a Communications Workgroup, which is made up of staff from the communications and public affairs offices of DPH (as the SDE; later, the HITE-CT), DSS (representing CMS) and eHealthConnecticut (as the statewide Regional Extension Center).

The communications objectives that support these goals for the HITE-CT are as follows:

- Inform and educate eligible health care providers and hospitals of opportunities to access Medicare and Medicaid incentive program payments for meaningful use of electronic medical records.
- Inform and educate all health care providers about the benefits of EMR/HIE, including providing information on resources and technical assistance available through the Regional Extension Center to achieve meaningful use,
- Implement a public education campaign on HIE that outlines the benefits of HIE, and addresses concerns about privacy and security of health information data.

- Develop a network of HIE stakeholders who will create and implement communications strategies and support priority HIE initiatives within their organizations,
- Promote transparency and offer inclusion into the HIE development and maintenance process,
- Inform consumers and stakeholders of state and national HIE activities.

### 3. Target Audiences

External target audiences include, but are not limited to, the following stakeholders and partners:

- Business coalitions
- Consumers
- Federally Qualified Health Centers and look-alikes,
- General public
- Health plans
- Hospitals
- Large employers,
- Local health departments
- Patients and caregivers,
- Provider practices and groups
- School-based health centers,
- State government (all branches)

Internal target audiences include, but are not limited to, the following stakeholders and partners:

- HITE-AC, its subcommittees and workgroups
- HITE-CT Board of Directors, its employees, subcommittees and workgroups
- Core DPH HIE team
- Board and membership of the statewide Regional Extension Center, eHealthConnecticut.
- Connecticut Department of Social Services

### 4. Key Messaging

- Health Information Exchange (HIE):
  - Provides for the electronic movement of health-related information utilizing nationally recognized standards and policies.
  - Provides a key building block for improved patient care, quality and safety.
  - Provides the means to reduce duplication of services, resulting in lower health care costs to call,
  - Enables the integration of sick care with that of well care, resulting in a more proactive and holistic approach treatment at the point of service.

- The HITE-CT has a responsibility to ensure that the electronic exchange of health information improves the health status of our state’s residents as part of an efficient and accessible health care system.
- The HITE-CT has an obligation to protect the medical information of all consumers and providers by ensuring the confidential and secure exchange of health information.
- In creating, building and sustaining Connecticut’s HIE system, the HITE-CT is committed to a process that is open, inclusive and transparent to all stakeholders.
- The HITE-CT supports the creation of strong practices and protocols surrounding the privacy and security of electronic medical information.
- The HITE-CT encourages current and future initiatives that develop and expand existing local and regional HIE systems.

## 5. Communications Channels

The HITE-CT is responsible for communication regarding statewide HIE to stakeholders and consumers. As part of the 3C3 Communications subcommittee, it is working (through DPH, later, through the HITE-CT) to develop specific communication strategies to support the Connecticut’s priority HIE initiatives and to educate stakeholders with regard to HIE in the state. This group will leverage available resources within respective organizations as well as from outside entities (for example, ONC and CMS) in order to coordinate communications and public outreach efforts.

These coordinated strategies include, but are not limited to, the team development of the following:

- Key HIE messaging
- General audience Frequently Asked Questions (FAQs)
- Topic specific FAQs (for example, privacy & security, meaningful use, CMS incentives, EMRs, etc.)
- Press Releases (proactive & reactive)
- Opinion pieces/op-eds
- Editorial board/news room tours
- Proactive print, online, radio & TV interviews and features
- Common contact e-mail lists

In order to serve all, the HITE-CT will seek active input from the Special Populations subcommittee of its Board in order to make certain that all communications materials are culturally and linguistically appropriate.

When the HITE-CT is established on January 1, 2011, its first and most immediate communications step is to establish at HITE-CT Website, which is the anchor for its overall communications channel matrix.

### External Communications Channels

Channel	Description	Priority Audiences	Tools & Information within channel	Launch time frame
Website	Create and maintain a website for information about statewide HIE in Connecticut and information for meaningful use and Medicaid incentive. Site to	<ul style="list-style-type: none"> <li>■ Consumers</li> <li>■ Health Care Providers</li> <li>■ Stakeholders (general)</li> </ul>	<ul style="list-style-type: none"> <li>■ Newsletter</li> <li>■ FAQs</li> <li>■ Meeting schedule</li> <li>■ Meeting minutes &amp; transcripts</li> </ul>	Winter 2011

Channel	Description	Priority Audiences	Tools & Information within channel	Launch time frame
	include links to relevant partner websites particularly ONC, CMS, DSS and eHealthConnecticut.		<ul style="list-style-type: none"> <li>■ Press releases</li> <li>■ Laws/regs</li> <li>■ Presentations/Plans</li> <li>■ CEO Blog</li> <li>■ Photo galleries</li> <li>■ Webinars</li> <li>■ RSS feeds</li> <li>■ Discussion forums</li> <li>■ Secure "members only" section</li> </ul>	
Speakers Bureau	Identify and train stakeholder champions charged with carrying key messages to peer stakeholder groups. Book participants to speak before key constituent group meetings (for example, meetings of partner organizations, community group meetings, legislative hearings, etc.) and the press, as needed.	<ul style="list-style-type: none"> <li>■ Health care providers</li> <li>■ Consumers</li> </ul>	<ul style="list-style-type: none"> <li>■ FAQs</li> <li>■ Key messaging</li> </ul>	Spring 2011
Social media	In order to create and maintain an interactive relationship with consumers and stakeholders for the purpose of ongoing education, the HITE-CT will develop and actively populate various social media sites with key messaging, and request feedback from followers and friends with regard to current HIE topics.	<ul style="list-style-type: none"> <li>■ Consumers</li> </ul>	<ul style="list-style-type: none"> <li>■ Facebook</li> <li>■ Twitter</li> <li>■ YouTube</li> <li>■ Flickr</li> </ul>	Winter 2010/11
Print	Producing print materials in small numbers remains an imperative, for there are members of the community without access to printers and/or computers. All print materials will also be made available in a printable format on the HITE-CT website.	<ul style="list-style-type: none"> <li>■ Consumers</li> <li>■ Stakeholders</li> <li>■ General public</li> </ul>	<ul style="list-style-type: none"> <li>■ Posters</li> <li>■ Letters</li> <li>■ Reports</li> <li>■ Brochures</li> </ul>	Winter 2010/11
Public relations	Events such as press conferences, HIE Board and subcommittee meetings, conferences and forums allow for the participation of consumers and stakeholders from across the spectrum of interested HIE partners. Having active and ongoing face-to-face feedback provides transparency to the	<ul style="list-style-type: none"> <li>■ Consumers</li> <li>■ Health care providers</li> <li>■ Legislators</li> <li>■ Stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>■ Events</li> <li>■ Endorsements</li> <li>■ Conferences</li> <li>■ Forums</li> </ul>	Ongoing

Channel	Description	Priority Audiences	Tools & Information within channel	Launch time frame
	development process and gives a voice to all.			
Press	A proactive and positive relationship between the HITE-CT and local, state and national media is essential to successfully communicating to general audiences about topics associated with the development and operation of Connecticut's HIE.	<ul style="list-style-type: none"> <li>■ TV</li> <li>■ Radio</li> <li>■ Newspaper</li> <li>■ Online publications</li> <li>■ Partner newsletters</li> </ul>	<ul style="list-style-type: none"> <li>■ Press releases</li> <li>■ Interviews with HIE champions</li> <li>■ Features</li> <li>■ Op-ed/articles</li> </ul>	Autumn 2010

**Internal Communications Channels**

Channel	Description	Priority Audiences	Tools & Information within channel	Launch time frame
E-mail listservs	In coordination with eHealthConnecticut, create and maintain a master e-mail listserv of all HIE stakeholders.	<ul style="list-style-type: none"> <li>■ Stakeholders (general)</li> </ul>	Seek ways to increase e-mail listserv numbers through HITE-CT website as it is being developed.	Ongoing development
Consumer communications workgroup	Workgroup to ensure that consumers are informed about HITE-CT, and how consumers may participate in HIE for the betterment of the care they receive and the care delivered to the underserved.	Consumers		Winter 2010/11
Board and subcommittee meetings	Ensure that all meetings publicly noticed, posted to HITE-CT website and are inclusive of a public audience.	<ul style="list-style-type: none"> <li>■ Stakeholders (general)</li> </ul>	<ul style="list-style-type: none"> <li>■ Notice the office of the Secretary of the State.</li> <li>■ Post agenda and meeting notice to HITE-CT website in a prominent and timely manner.</li> <li>■ E-mail notifications of all meetings to listserv and partner organizations.</li> <li>■ Post meeting minutes and/or transcripts to HITE-CT website</li> <li>■ Provide electronic access to meetings when stakeholders cannot be there in person (for example, phone or webinar)</li> </ul>	

**6. Evaluating Success**

To determine the success of a communications plan, it is essential to periodically revisit and review the plan's objectives.

Formal evaluation methods include focus groups, phone polls or online surveys targeted at specific audiences to determine changes in the level of knowledge about topics surrounding HIE and HIT in Connecticut. While such methods of communication evaluation are often expensive, it is clear that the use of online surveys (such as those available through [www.surveymonkey.com](http://www.surveymonkey.com)) could produce valuable data in a cost-effective manner.

Less formal evaluation tools may also be put in place to measure the success of the communications plan, including the continued tracking of:

- Practitioners and hospitals participating in meaningful use incentive program
- Participation in educational programs, conferences, forums, etc.
- Visits to HITE-CT website/Web pages
- Unsolicited media inquiries
- No-cost media placements
- Use of social media sites
- Nature of incoming phone/e-mail inquiries to HITE-CT

## **4.14 Appendix— HITE Transition Brief**

### **HEALTH INFORMATION TECHNOLOGY AND EXCHANGE (HITE)**

Health Information Technology & Exchange (HITE) provides for the electronic movement of health-related information utilizing nationally recognized standards and policies of privacy and security, and constituting a foundation for national healthcare reform. HITE is a key building block for improved patient care, quality and safety, and allows for the integration of sick care, with that of well care, resulting in a more proactive and comprehensive approach to clinical treatment at the point of service.

Health Information Exchange (HIE) objectives dovetails with the Institute of Medicine's goals for a quality healthcare system: safety, timeliness, patient-centeredness, efficiency, effectiveness, and equity in care. Connecticut's goal, similar across the nation, is for HIE systems to facilitate the availability of data at the time appropriate to deliver the right care for each individual. HIE encourages the exchange of electronic health records (EHRs) in all healthcare settings, and take the place of the traditional paper medical records. This exchange among many providers encourages care coordination for each individual patient. This, in turn, leads to improved care quality and safety, increased overall value and a more streamlined and effective care process.

There are both federal and state based programs which are addressing the design and implementation of HITE and these are described below.

### **FEDERAL DIRECTIVES AND SUPPORT**

The American Recovery and Reinvestment Act of 2009 (ARRA) provides major opportunities for the improvement of our nation's healthcare through HITE. ARRA legislation includes the Health Information Technology for Economic and Clinical Health Act (HITECH Act) that supports meaningful use of health information technology to improve the quality and value of American health care. The HITECH Act also established the Office of the National Coordinator for Health Information Technology (ONC) within the U.S. Department of Health and Human Services (HHS) as the principal federal entity responsible for coordinating the effort to implement a nationwide health information technology infrastructure that allows for the use and exchange of electronic health information.

The ONC has developed a multi-tiered approach to achieve HITECH goals. The first goal is for each state to develop and then operationalize a strategic plan to direct and create HIE systems that serve both providers and consumers. ONC funded the development of each state strategic and operational plan and, upon federal approval of the plan, implementation funds will be awarded. ONC defined and directed each state to assure the meaningful use of health data as a priority for HIE operations. The first phase of implementation focuses on improved patient care by laboratories, pharmacies, and primary care providers to exchange appropriate health data. An expectation of ONC and HITECH is that health data exchanges will connect with other interstate and intrastate exchanges, resulting in a seamless healthcare delivery system.

In coordination with the ONC, the Center for Medicare and Medicaid Services (CMS) oversees and administers sections of the ARRA that provide Medicare and/or Medicaid bonus payments to eligible healthcare providers who meaningfully use certified EHRs by calendar years 2011 to 2014, and for hospitals that meaningfully use certified EHRs by fiscal years 2011 to 2015. Beginning in 2015, the ARRA mandates penalties under Medicare for eligible professionals and

hospitals that fail to demonstrate meaningful use of certified EHRs. A detailed description of the Medicare & Medicaid EMR incentive programs, including federal guidance on “meaningful use,” may be found at: [https://www.cms.gov/EHRIncentivePrograms/01\\_Overview.asp](https://www.cms.gov/EHRIncentivePrograms/01_Overview.asp).

The ONC established and funded the nationwide Regional Extension Center (REC) program under ARRA to provide education, outreach, and technical assistance for physicians to successfully implement and meaningfully use certified EHR technology to improve the quality and value of health care. Regional Centers are designed to help providers achieve, through appropriate available infrastructures, the exchange of health information in compliance with applicable statutory and regulatory requirements, and patient preferences. The support for health information exchange that is provided by Regional Centers will also be consistent with any applicable State Plan(s).

ARRA also supports institutions of higher education to establish or expand health informatics education programs, including certification, undergraduate, and master’s degree programs, for both healthcare and information technology students. This effort will ensure the rapid and effective utilization and development of health information technologies to support the healthcare infrastructure. In addition, Community Health Centers received ARRA funds related to health information exchange infrastructure and service. More detail on each of these programs is included below in the State Programs section.

## **CONNECTICUT DIRECTIVES AND SUPPORT**

Efforts at the state level will establish and implement appropriate governance, policies, and network services within the broader national framework.

Governor M. Jodi Rell and the Connecticut legislature have supported and directed the state health information exchange governance and planning process. The 2007 Connecticut General Assembly required and funded the DPH to develop the first statewide health information technology plan. In June 2009, the DPH published the *Connecticut State Health Information Technology Plan*, setting the baseline agenda for healthcare information exchange and technology in the state. The 2009 legislature designated DPH as the State Designated Entity (SDE) responsible for Connecticut’s Health Information Technology and Exchange Development Project with a legislatively appointed Advisory Committee.

In 2010, Sections 80 through 92 of Public Act 10-117 (“*An Act Concerning Revisions to Public Health Related Statutes and the Establishment of the Health Information Technology Exchange of Connecticut*”) established the Health Information Technology Exchange of Connecticut (HITE-CT) to be Connecticut’s SDE effective January 1, 2011. The HITE-CT will be a quasi-public state agency managed by a Board of Directors that are legislatively appointed members representing consumers, health providers, insurers, large employers, public health, and state agencies responsible for health information exchange. The Lieutenant Governor is also appointed to the Board representing executive leadership.

Under the terms of ONC’s Cooperative Agreement, the state is required to appoint a State HIT Coordinator to provide HITE leadership and coordination across federally funded state programs. The State HIT Coordinator is also tasked with developing and advocating for HITE policy to achieve statewide goals, and coordinating HITE efforts between Medicaid, public health, federal programs (such as the Indian Health Service) and other federally-funded state

programs. Governor Rell appointed a senior-level Public Health Administrator at DPH as the Connecticut State HIT Coordinator.

Recognizing the authority needed to oversee these programs, the ONC, DPH, DSS, and eHealthConnecticut *strongly advise* that the role of State HIT Coordinator be independent of each of the ARRA funded HITE entities, and empowered by the Office of the Governor to support and oversee the appropriate implementation of HITE policy and protocols in Connecticut.

### ***Connecticut Department of Public Health (DPH)***

The DPH, as a public health advocate, regulator, and educator, is the leader in the development of a statewide HIE. DPH has dedicated staff and other resources to ensure that the electronic exchange of health information improves the health status of our state's residents as part of an efficient and accessible healthcare system. The Department has an obligation to protect the medical information of all consumers and providers by ensuring the confidential and secure exchange of health information.

As the current SDE, DPH is the awardee of \$7.29 million in ARRA funding through a 4-year Cooperative Agreement with ONC for the purpose of planning for and establishing a secure and operational statewide information exchange system. The cooperative agreement focuses on developing the statewide policy, governance, technical infrastructure and business practices needed to support the delivery of HIE services.

One of the responsibilities funded by ARRA was the development of the *2010 Connecticut Strategic and Operational Plan for Health Information Exchange* that defines the current and expected HITE policies and initiatives. DPH submitted the Plan to ONC for consideration in September 2010. Upon approval, ONC will release approximately \$6.56 million in ARRA funds over three years (2011 through 2013) to be used toward the Plan's implementation.

The scope of DPH involvement in statewide HITE shifts significantly upon establishment of the HITE-CT on January 1, 2011. The DPH Commissioner will continue his/her leadership role as both chair of the HITE-CT Board of Directors and public health advocate. DPH will continue management and administration of the ONC Cooperative Agreement that includes a contract with the HITE-CT to provide partial funding of the entity's start-up costs through 2013.

### ***Health Information Technology Exchange of Connecticut (HITE-CT)***

As of January 1, 2011, Connecticut Public Act 10-117 establishes the Health Information Technology Exchange of Connecticut (HITE-CT), a quasi-public state agency. The vision for HITE-CT is to facilitate secure health information exchange across the care continuum that supports patients' health needs at the point of treatment by providing immediate, direct and ongoing links between patients, their complete health records and their attending providers.

To realize this vision, the HITE-CT is responsible to implement the State Plan for developing HIE policies and protocols, setting HIE standards and enforcement measures, and integrating current local and regional HIE systems into the statewide HIE. DPH is working closely with the HITE-CT Board of Directors to assure a smooth transition of SDE responsibilities, and will continue to support the HITE-CT and its Board until the revised statewide HIE Plan submitted to ONC is approved, and federal funding is released to staff the agency.

Currently, the most significant challenge for the HITE-CT is the need to identify and obtain additional state, federal or private funds to support the actual implementation of the state HIE. While federal stimulus funds will be used to provide partial support for the HIE, the HITE-CT Finance Committee has projected significant funding gaps growing from \$4.62 million in 2011 to \$6.47 million in 2017.

As part of its Financial Feasibility Study, the HITE-CT Finance Committee has developed value propositions for various constituent groups and potential strategies for covering these funding gaps. Strategies include assessing fees on constituents and seeking additional federal or private funds. Additionally, the Finance Committee has discussed the need for state financial support, perhaps in the form of tax credits.

### ***Connecticut Department of Social Services (DSS)***

Section 4201 of ARRA establishes a program for states to provide incentive payments to Medicaid providers who adopt, implement or upgrade and become meaningful users of “certified Electronic Health Record (EHR) technology”. The Department of Social Services (DSS) is the state agency responsible for administering the Medicaid program in Connecticut. The DSS has begun implementation of the Medicaid Incentives program by developing a State Medicaid HIT Plan (SMHP) so as to secure funding from the Centers for Medicare & Medicaid (CMS). The SMHP provides guidance to the state to achieve its vision by moving from the current “As-Is” HIT landscape to the desired “To-Be” HIT landscape, including a comprehensive HIT Road Map and strategic plan for the next 5 years.

Health professionals and hospitals who meet the respective percentage of Medicaid patient encounter threshold may be eligible for the incentive payment. These eligible providers and hospitals must adopt, implement, or upgrade a certified EHR technology and meaningfully use this system to improve healthcare quality, reduce health disparities, and increase the efficiency of the care delivery system. *It is important to note that eligible providers may take advantage of either the Medicaid incentive plan reimbursement or Medicare payment, but not both.*

As Medicaid covers approximately 16% of Connecticut’s population, the CT Medicaid program will seek 75% federal financial participation from CMS to support its share of the costs associated with implementing and sustaining the statewide HIE. ***In order to obtain these federal funds, the state must contribute the remaining 25%.*** This will enable Medicaid providers to meet meaningful use.

With any new program of this magnitude and complexity, DSS needs to be securely acclimated to the new rules and subsequent modifications in order to appropriately address the development, implementation, monitoring and administration of the incentive program. It is DSS’s plan to establish dedicated state resources to manage this new program and interface with the statewide HIE as it develops.

### ***eHealthConnecticut***

eHealthConnecticut is a not-for-profit entity incorporated in January 2006 to create, champion and sustain a secure health information exchange to improve the safety, efficiency and quality of healthcare in Connecticut. eHealthConnecticut’s approach is to leverage the support and partnership of multiple stakeholders to create programs that promote the adoption of healthcare

technology and facilitate the meaningful exchange of healthcare information to ultimately have a positive impact on the quality, safety and value of healthcare available to Connecticut's citizens.

eHealthConnecticut is the awardee of \$5.75 million from the ARRA-funded Regional Extension Center (REC) grant program to assist 1,308 primary care providers in small practices and underserved population settings, such as Federally Qualified Health Centers (FQHCs), to select, implement EHR systems and achieve "Meaningful Use" of those systems within a 2 year period. Over time, eHealthConnecticut plans to provide similar and related services to all physicians in Connecticut. The creation of the REC is the result of a collaborative effort among many stakeholders from the Connecticut healthcare landscape.

In 2008, eHealthConnecticut received federal designation as a Chartered Value Exchange (CVE). CVEs are a select group of twenty four entities in the United States recognized by the Agency for Healthcare Research and Quality (AHRQ) of the Department of Health and Human Services (HHS) as communities of healthcare providers, employers, insurers, and consumers working to improve care and make quality and value information available.

In addition, eHealthConnecticut is currently implementing a pilot test of an HIE system that includes several hospitals, community health centers and a physician practice. The pilot is funded via a Transformation Grant awarded to DSS by CMS.

### ***Capital Community College Health Information Technology (HIT) Training Program***

In 2010, Tidewater Community College in Virginia was awarded \$16,017,608 in ARRA funding from the U.S. Department of Health and Human Services to lead a 12-state, community-college based consortium in HIT workforce development for approximately 7,500 students over the next two years. As a member of this consortium, Capital Community College in Hartford will be responsible to provide training and education for up to 300 information management specialists and clinicians in the emerging field of health informatics.

Individuals will participate in training to develop competencies in health information technology for the workforce roles of practice workflow and information management redesign specialists, clinician/practitioner consultants and software support technicians. The HIT training will be established alongside the College's array of nationally accredited programs in nursing and allied health. Capital is working in collaboration with DPH, DSS, and eHealthConnecticut to prepare a workforce to build the State's health information technology exchange capacity.

### ***Community Health Centers***

Community health centers operate more than 100 clinics across Connecticut and provide affordable health care for nearly 250,000 people. Health Centers deliver primary and preventive care services across Connecticut to patients regardless of their ability to pay. Three programs supported with ARRA funds have been made available to address immediate health information technology and exchange needs. The New Access Point, Capital Improvement, and Increased Demand for Services grants have been awarded to support the increased demand for services, and infrastructure improvements in Connecticut's twelve (12) FQHCs. The individual grants, ranging from \$250,000 to nearly \$2.2 million in Connecticut, address capital improvement needs, including construction, renovation, and equipment. Eligible activities under these grants include health information technology and exchange systems.

Health Center Grantee Name	City	New Access Point Award	Increased Demand for Services Award	Capital Improvement Program Award
CHARTER OAK HEALTH CENTER, INC.	HARTFORD		\$314,172	\$1,027,630
COMMUNITY HEALTH & WELLNESS CENTER OF GREATER TORRINGTON	TORRINGTON	\$1,300,000	\$100,000	\$250,000
COMMUNITY HEALTH CENTER, INC.	MIDDLETOWN		\$670,628	\$2,212,975
COMMUNITY HEALTH SERVICES, INC	HARTFORD		\$267,774	\$832,120
EAST HARTFORD COMMUNITY HEALTHCARE, INC.	EAST HARTFORD		\$216,655	\$619,900
FAIR HAVEN COMMUNITY HEALTH CLINIC, INC.	NEW HAVEN		\$281,251	\$740,385
GENERATIONS FAMILY HEALTH CENTER, INC.	WILLIMANTIC	\$1,125,000	\$261,264	\$768,210
HILL HEALTH CORPORATION	NEW HAVEN		\$398,511	\$1,288,520
NORWALK COMMUNITY HEALTH CENTER, INC.	NORWALK	\$1,300,000	\$100,000	\$250,000
OPTIMUS HEALTH CARE, INC.	BRIDGEPORT		\$592,573	\$1,763,750
SOUTHWEST COMMUNITY HEALTH CENTER	BRIDGEPORT		\$298,881	\$801,110
STAYWELL HEALTH CARE, INC.	WATERBURY		\$270,184	\$876,325

## CONCLUSION

Each of the ARRA-funded entities cited in this brief have dedicated both state and private funded staff and other resources to the planning and coordination of existing health information initiatives developed by hospitals, community health centers, and physician groups. The ARRA-funded entities are working together to implement HIE in Connecticut. The Community Health Centers and DSS are represented on the HITE-CT Board of Directors. In addition, DPH, DSS, Capital Community College, and eHealthConnecticut have created a “Coordination, Collaboration, and Communication” Workgroup that have worked together during 2010 to coordinate communication and administration activities.

Connecticut is one of few states without state funding for health information exchange development and operations. The ONC funds will support the planning, development, and coordination of policies and protocols. **At this time, however, there are not sufficient funds to build and sustain a statewide HIE in Connecticut.** An operational HIE, as directed by ONC and CMS, will need to secure state and private funding of approximately \$7 million for each year of the development and installation.

Therefore, in order to succeed in building and sustaining a statewide HIE in Connecticut, the four contributors to this brief recommend the following:

1. That the State of Connecticut develop and execute an immediate funding strategy that identifies and obtains additional state, federal or private funds to support a viable statewide HIE;
2. That the State of Connecticut support the coordination, collaboration, and communication efforts among the ARRA-funded and other health information technology related projects;
3. That the Connecticut State HITE Coordinator have the authority of the Governor's Office to support the health information technology exchange policies and initiatives with Executive Branch authority to ensure state compliance with national policies and standards;

## 4.15 Appendix—References

Aseltine, R H., et al. Connecticut Physician Workforce Survey 2008: Final Report on Physician Perceptions and Potential Impact on Access to Medical Care. Connecticut State Medical Society, 2008. 11.

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Connecticut Public Act 10-117 "An Act Concerning Revisions To Public Health Related Statutes And The Establishment Of The Health Information Technology Exchange Of Connecticut." May, 2010. <http://www.cga.ct.gov/2010/ACT/PA/2010PA-00117-R00SB-00428-PA.htm>

Health Insurance Portability and Accountability Act of 1996, P.L. 104-191, as amended from time to time, and contained in 45 CFR 160, 164

## Endnotes

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<sup>1</sup> See estimate released May 2009 by the U.S. Department of Health and Human Services, available at <http://www.hhs.gov/recovery/index.html>. This includes an estimated \$46.8 billion in Medicare and Medicaid electronic health record incentive payment funding and \$2 billion to be distributed through the Office of the National Coordinator in a series of grants, loans, and technical assistance programs designed to support provider EHR use and to spur health information exchange.

<sup>2</sup> See guidance on these domains in the Office of the National Coordinator (ONC) for Health Information Technology's *State Health Information Exchange Cooperative Agreement Program* issued in August 2009.

<sup>3</sup> U.S. Census Bureau. <http://quickfacts.census.gov/qfd/states/09000.html>. Accessed October 9, 2010.

<sup>4</sup> 2007 data from <http://datacenter.kidscount.org>.

<sup>5</sup> Aseltine, R H., et al. Connecticut Physician Workforce Survey 2008: Final Report on Physician Perceptions and Potential Impact on Access to Medical Care. Connecticut State Medical Society, 2008. 11.

<sup>6</sup> Hing, Esther, et al. Electronic Medical Record Use by Office-based Physicians and Their Practices: United States, 2007. National Health Statistics Reports. Number 23. March 31, 2010

<sup>7</sup> Hing, et al.

<sup>8</sup> Connecticut State Health Information Technology Plan (CT SHITP). Connecticut Department of Public Health. June, 2009.

<sup>9</sup> Jha, A.K. Use of Electronic Health Records in U.S. Hospitals. The New England Journal of Medicine. Volume 360: 1628-1638. Number 16. April 16, 2009.

<sup>10</sup> Continued Progress: Hospital User of Information Technology. American Hospital Association. 2007.

<sup>11</sup> Hing, et al.

<sup>12</sup> CT SHITP

<sup>13</sup> Aseltine, et al.

<sup>14</sup> Connecticut Progress Report on E-Prescribing: E-Prescribing adoption and use statistics for years 2007–2009. <http://www.surescripts.com/about-e-Prescribing/progress-reports/state.aspx?state=ct&fulls>. Accessed 7/29/2010

<sup>15</sup> <http://www.ama-assn.org/amednews/2010/06/14/gvsc0614.htm>

<sup>16</sup> <http://www.surescripts.com/about-e-prescribing/progress-reports/state.aspx?state=ct>

<sup>17</sup> "Non-resident pharmacy" means a pharmacy, including an Internet-based pharmacy, located outside the state of Connecticut which delivers, dispenses, or distributes, by any method, prescription drugs or devices to an ultimate user physically located in this state. This includes pharmacies located outside the state, which provides routine pharmacy services to ultimate users in this state.

<sup>18</sup> CT SHITP

<sup>19</sup> Connecticut Public Act 09-232

<sup>20</sup> The Universal Assessment Fee is a mandatory fee that will be assessed for each provider of care in Connecticut to obtain initial funding from all the many organizations expected to benefit from the HITE-CT approach to HIE. Examples of how this fee will be assessed include: Flat and/or %- based fees from Connecticut Health Plans (Claims %), Hospitals (Bed or Discharge), Physicians (Flat Licensure Fee), CHCs (% claims), Pharmacies, Labs, LTC facilities and other potential for-profit and non-profit HIE users or contributors.

<sup>21</sup> Health Insurance Portability and Accountability Act of 1996, P.L. 104-191, as amended from time to time, and contained in 45 CFR 160, 164

<sup>22</sup> ONC will negotiate with each state to determine best way to further specify this measure based on the statewide directories and shared services pursued within each State under this program.

<sup>23</sup> As of July 8, 2010, the HITE-CT stakeholder agencies/groups are as follows:

Accenture	Gartner, Inc.
Advance Behavioral Health	Hartford Hospital
Aetna	Hewlett Packard
Anthem	Hospital for Special Care
Cardiology Associates of Waterbury	Lawrence & Memorial Hospital
Cigna	Libertas
Community Health Center Assoc. of CT	Middlesex Hospital
Community Health Centers, Inc.	Midstate Medical Center
Connecticut Department of Consumer Protection	Milford Hospital
Connecticut Department of Information Technology	MISYS Open Source
Connecticut Department of Public Health	Nexus Resources
Connecticut Department of Social Services	Office of the CT Lt. Governor
Connecticut Office of Policy & Management	Office of the National Coordinator
CT Area Health Education Center	Qualidigm
CT Assoc. of Not-for-Profit Providers for the Aging	Quest
CT Association of Health Care Facilities	Robinson & Cole
CT Center for Primary Care	SMC Partners
CT Development Authority	St. Francis Hospital

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CT Health and Educational Facilities Authority  
CT Health Policy Project  
CT Hospital Association  
CT Pharmacist's Association  
Danbury Hospital  
David O'Leary Group  
East Granby Family Practice  
Eastern Connecticut Health Network  
eHealthConnecticut

St. Luke's Lifeworks  
St. Vincent's Medical Center  
Stamford Hospital  
StayWell Health Care  
University of Connecticut Health Center  
Women's Health USA  
Yale University  
Yale-New Haven Hospital

<sup>24</sup> 45 CFR Part 170 Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule

<sup>25</sup> In the nomenclature of the IHE:

- a profile is a collection of standards and supporting specifications that are brought together to define interoperability among specific "actors" for a specific use case
- a domain is a group of profiles that support a specific community

<sup>26</sup> Connecticut Health Database Compendium: A Profile of Selected Databases Maintained by the Connecticut Department of Public Health. Third Edition. March 2010