Connecticut Department of Social Services

Health Information Technology Strategic & Operational Plan Meetings

2014

Meeting Proceedings

Roderick Bremby, Commissioner

1

55 Farmington Avenue – Hartford – Connecticut 06105

HIT Strategic & Operational Plan - Governance

ONC/HIE Cooperative Agreement

Meeting Agenda

Meeting Date	Meeting Time	Location
October 15, 2014	3:00-5:00 pm	DSS, 55 Farmington Avenue, Hartford, CT 06105 Room #530 North

Participant Name and Attendance

DSS Staff		Other	
Participant Name	**Attended**	**Participant Name**	**Attended**
Comm. Roderick Bremby (Co-Chair)		Minakshi Tikoo	
Mark Raymond (Co-chair)		Louis Polzella	
Comm. Jewel Mullen		Stanley Stewart	
Comm. Scott Semple		Vance Dean	
Comm. Patricia Rehmer		Karen Buffkin	
Comm. Joette Katz		Peter VanLoon	
Comm. Terrence Macy		James Michel	
Comm. Joe Perkins			
Comm. William Rubenstein			
Sec. Benjamin Barnes			
James Wadleigh			
John Vittner			

Meeting Schedule 2014 Dates - Nov 19, Dec 17
2015 Dates – Jan 21, Feb 18, March 18

	Agenda	Responsible Person	Time Allotted
1.	**Introductions and setting the stage**	**All**	**10 minutes**
2.	**Current HIT Landscape**	**Com. Bremby and Mark Raymond**	**20 minutes**
	a) The Medicaid EHR Incentive Program		
	b) Direct Messaging		
	c) Provider Directory and EMPI		
	d) TEFT - PHR		
	e) SIM proposal		
	Discussion		
	Resolution		
3.	**The IL Framework for Governance**	**Deneen Omer CSG**	**30 minutes**
	Presentation of the process and the framework		
	Discussion		
	Resolution		
4.	**Discuss the structure of the HIT planning process**	**All**	**40 minutes**
	Operationalizing Governance Principles for state of		

	Connecticut – the how?		
	1. Identify & Assemble strong executive leadership		
	2. Create a shared vision for HIT		
	3. Formalize governance structure		
	4. Establish clear decision-making process		
	5. Evaluate governance system and adapt as necessary		
	6. Maintain transparent communication		
5.	**Next Steps**	**All**	**20 minutes**
	Discussion		
	Resolution		

Action Items	**Responsible party**

Parking Lot Issues:

Attachments In order:

1. Commissioner Bremby's meeting Invitation (just the first page)
2. State of Connecticut HHS – Leveraging Opportunities for Transformation – where are we and where do we need to be? - Gartner
3. Commissioner's Memo on HIT initiatives – Oct 8, 2014
4. Integrating Connecticut's HIT - White paper http://www.healthreform.ct.gov/ohri/lib/ohri/HealthTechnologyWorkGroupFinalReportRecommendations.pdf
5. The Strategic Use of technology by the state of Connecticut - http://www.ct21.org/index.php/reports/14-framework-for-connecticut-s-fiscal-future/18-part-6-the-strategic-use-of-technology-by-the-state-of-connecticut
6. SOP lasted updated by HITE-CT - http://www.ct.gov/dph/lib/dph/state_health_planning/hit/2013_update_to_sop_for_hie_in_ct_final_022813.pdf
7. Evaluating Connecticut's Health Information Exchange – 2014 Executive Summary
    a. Executive Summary - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/ExecutiveSummary_HIEEvaluation.pdf
    b. Consumer survey -http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/CS_Final_Report.pdf
    c. Physician survey - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/PS_Final_Report.pdf
    d. Pharmacy survey - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/Final_PharmacyReport.pdf
    e. Laboratory survey -http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/LabEvaluationFINALApril2014.pdf
    f. Stakeholder report - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/FinalStakeholderReport.pdf
8. State of Connecticut Integrated Eligibility Working Group Tier IV Overview – Presentation by KPMG April 25, 2014
9. DSS IT Capital Investment Briefing – Sept 11, 2013. http://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.ct.gov%2Fopm%2Flib%2Fopm%2Ffinance%2Fitim%2Fdss_2013_capital_investment_brief_2014_funding.pptx
10. Establishing Governance for Health and Human Services – Interoperability Initiatives. Illinois Framework http://illinoisframework.org/
11. A 10-year Vision to Achieve an Interoperable HIT Infrastructure – The Office of the National Coordinator for HIT
12. Analytic Capability Roadmap for Human Services Agencies – APHSA
13. An Example: Illinois Framework Inter-governmental Agreement http://illinoisframework.org/illinois-framework-resource-library/
14. Presentation from CSG – State of Connecticut – Facilitation for HIT Governance 10/15/2014

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6. SOP lasted updated by HITE-CT - http://www.ct.gov/dph/lib/dph/state_health_planning/hit/2013_update_to_sop_for_hie_in_ct_final_022813.pdf
7. Evaluating Connecticut's Health Information Exchange – 2014 Executive Summary
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    b. Consumer survey -http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/CS_Final_Report.pdf
    c. Physician survey - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/PS_Final_Report.pdf
    d. Pharmacy survey - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/Final_PharmacyReport.pdf
    e. Laboratory survey -http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/LabEvaluationFINALApril2014.pdf
    f. Stakeholder report - http://cicats.uconn.edu/wp-content/uploads/sites/840/2014/04/FinalStakeholderReport.pdf
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STATE OF CONNECTICUT

DEPARTMENT OF SOCIAL SERVICES
OFFICE OF THE COMMISSIONER

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Commissioner

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James Dzurenda, Commissioner, DOC
Patricia Rehmer, Commissioner, DMHAS
Joette Katz, Commissioner, DCF
Terrence Macy, Commissioner, DDS
Benjamin Barnes, Secretary, OPM
Kevin Counihan, Chief Executive Officer, Access Health
Mark Raymond, Chief Information Officer, BEST
John Vittner, Information Technology Manager

From: Roderick Bremby, Commissioner RLB (KMB)

Date: August 7, 2014

Subject: Health Information Technology Strategic and Operational Plan Meetings

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I am writing this letter to ask you to join me in a discussion over the coming months about a process to update the Health Information Technology Strategic and Operational Plan. As you may know, the existing plan was created by HITE-CT, an agency that was sunset on June 30, 2014. The Governor has asked us to lead this effort together and adopt best practices and standards in HIT to improve health care delivery and quality of care (Bill 5597 attached).

At this time I am asking you to commit to six monthly meetings to focus on the following:

- Refresh the HIT vision statement for our state
- Identify common HIT goals
- Affirm and support an identified HIT "enterprise" built on an interoperable framework
- Create a cross-agency governance structure that builds upon and integrates various health and human service (HHS) initiatives that have been undertaken over the last 4-years (i.e., the health insurance exchange marketplace, an integrated eligibility and enrollment system, adoption of direct messaging to improve care coordination across communities and providers, purchase of an health provider directory and an enterprise master patient index).

Tentatively, I am looking to initiate this process on the 3rd Wednesday of the month from 3:00pm to 5:00pm, starting with September 17, 2014. Future meetings will be held on 10/15, 11/19, 12/17, 1/21/15, 2/18/15. I want to thank you for your willingness to move an HIT agenda forward with a collaborative spirit. My staff will be reaching out to you again shortly, to discuss and explore additional ways we can work together to update a statewide HIT/HIE strategic plan. Please do not hesitate to reach out to me or Minakshi Tikoo, HHS HIT Coordinator (tikoo@uchc.edu), should you have any questions or suggestions as we embark on developing the HIT Roadmap for the state of Connecticut.

cc: Minakshi Tikoo, PhD, HHS HIT Coordinator
Attachment: Budget Bill 5597, February 2014

State of Connecticut Health and Human Services

Leveraging Opportunities for Transformation – Where are we and where do we need to be?

Frank Petrus
Senior Managing Partner
Health and Human Services Practice

Gartner

Agenda

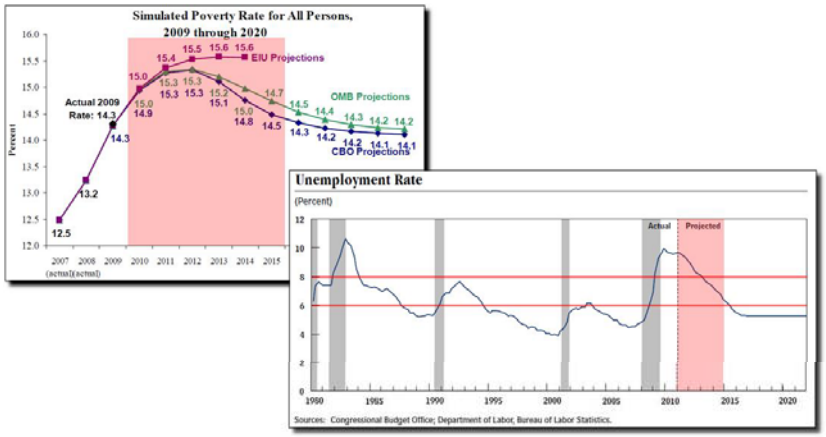
- Budget and Demand Challenges – *Doing Better and More With Less*
- Transformation Agenda for Health and Human Services
- Leveraging the Healthcare Reform and Health Information Technology (HIT) Agenda and Enhanced Funding
- Integrated Health and Human Services - *Moving from Agency-Centric to Person-Centric*
- Getting Started:
  - Key Gates
  - The Future HHS Solution Pattern – Building on Service Oriented Architecture
  - Where to Start
- Bringing It All Together – *Critical Success Factors*

Budget and Demand Challenges

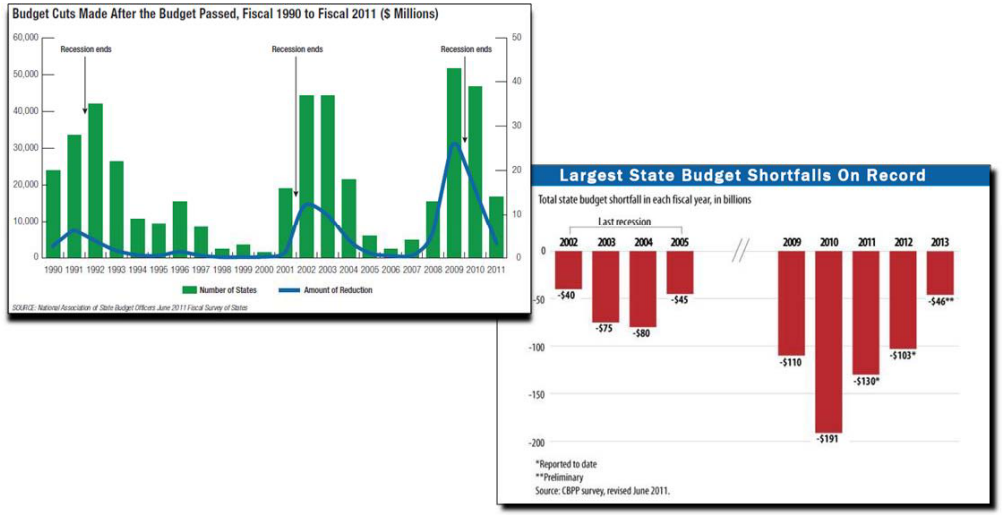
Doing Better With Less

U.S. Unemployment and Poverty Rates Will Remain High through 2015

State Budgets Will Continue to Experience Shortfalls



Sources: Monea & Sawhill. *An Update to "Simulating the Effect of the 'Great Recession' on Poverty."* Brookings Institution. September 16, 2010.
Congressional Budget Office. *The Budget and Economic Outlook: Fiscal Years 2011 to 2021*. January 2011



Sources: National Governors Association and the National Association of State Budget Officers. *The Fiscal Survey of States."* Spring, 2011.
McNicol, et al. *States Continue to Feel Recession's Impact.* Center on Budget and Policy Priorities. Updated June 17, 2011

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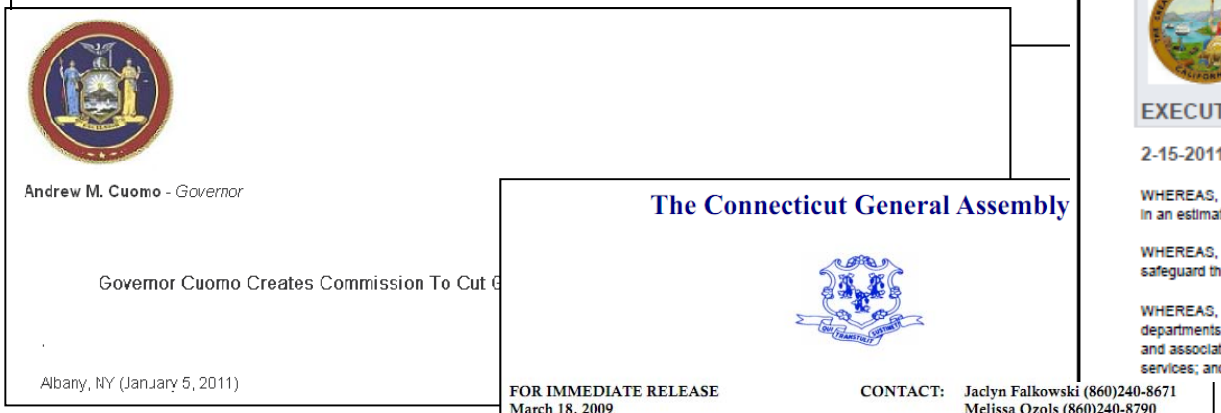
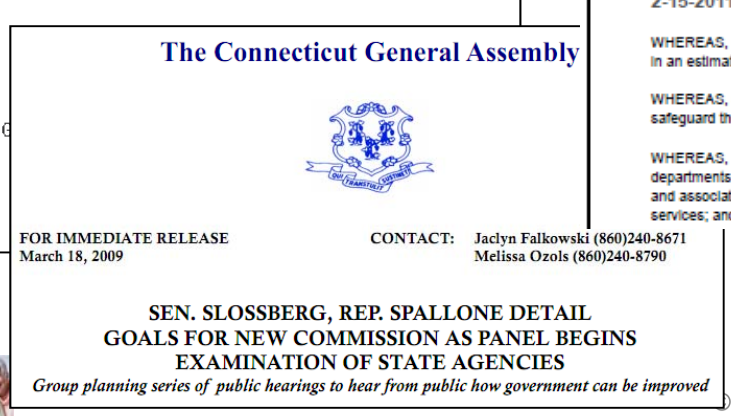
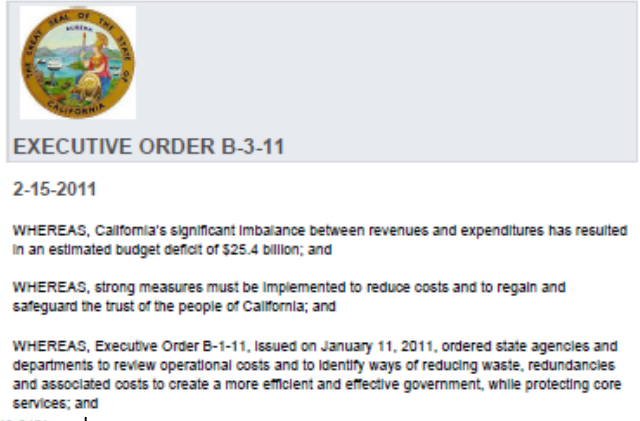
Governors and Legislators Respond by Pushing the Reset Button…

www.gov.louisiana.gov

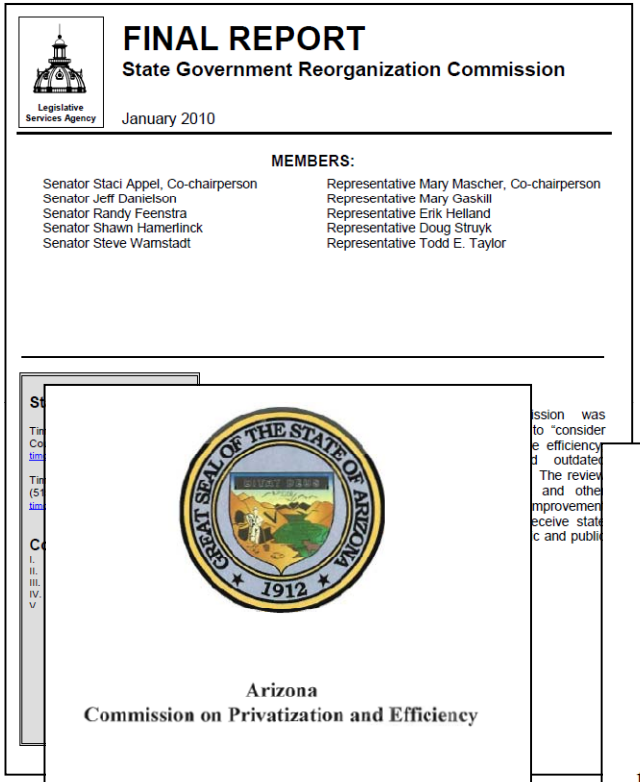
Governor Jindal Issues Executive Order Establishing Commission on Streamlining Govern

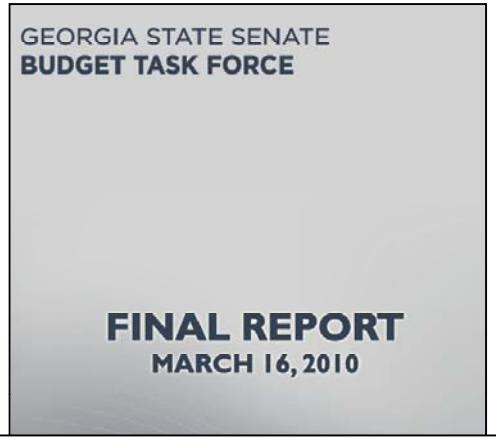


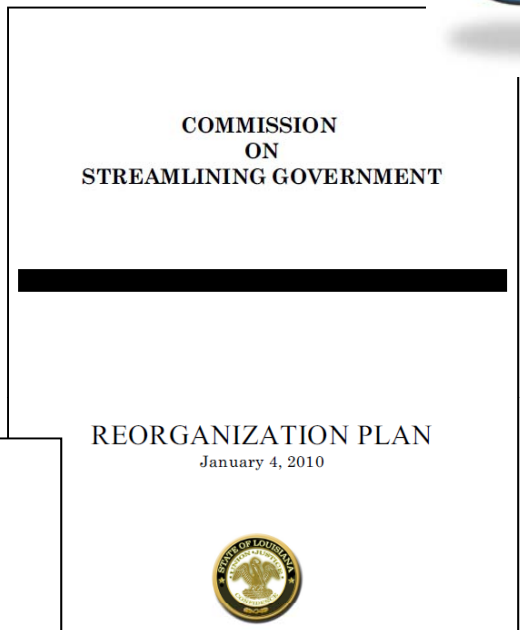


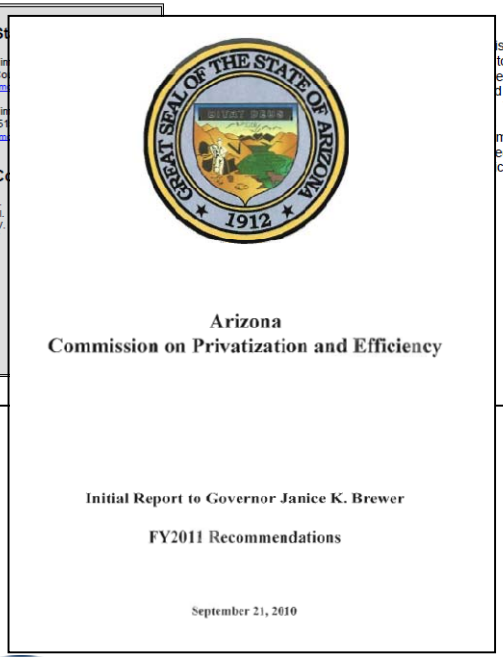


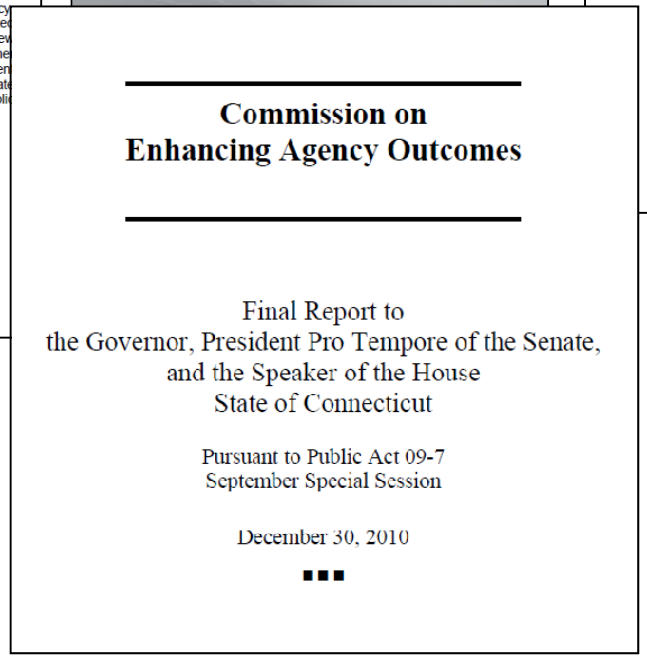
…and State Government is Being Transformed











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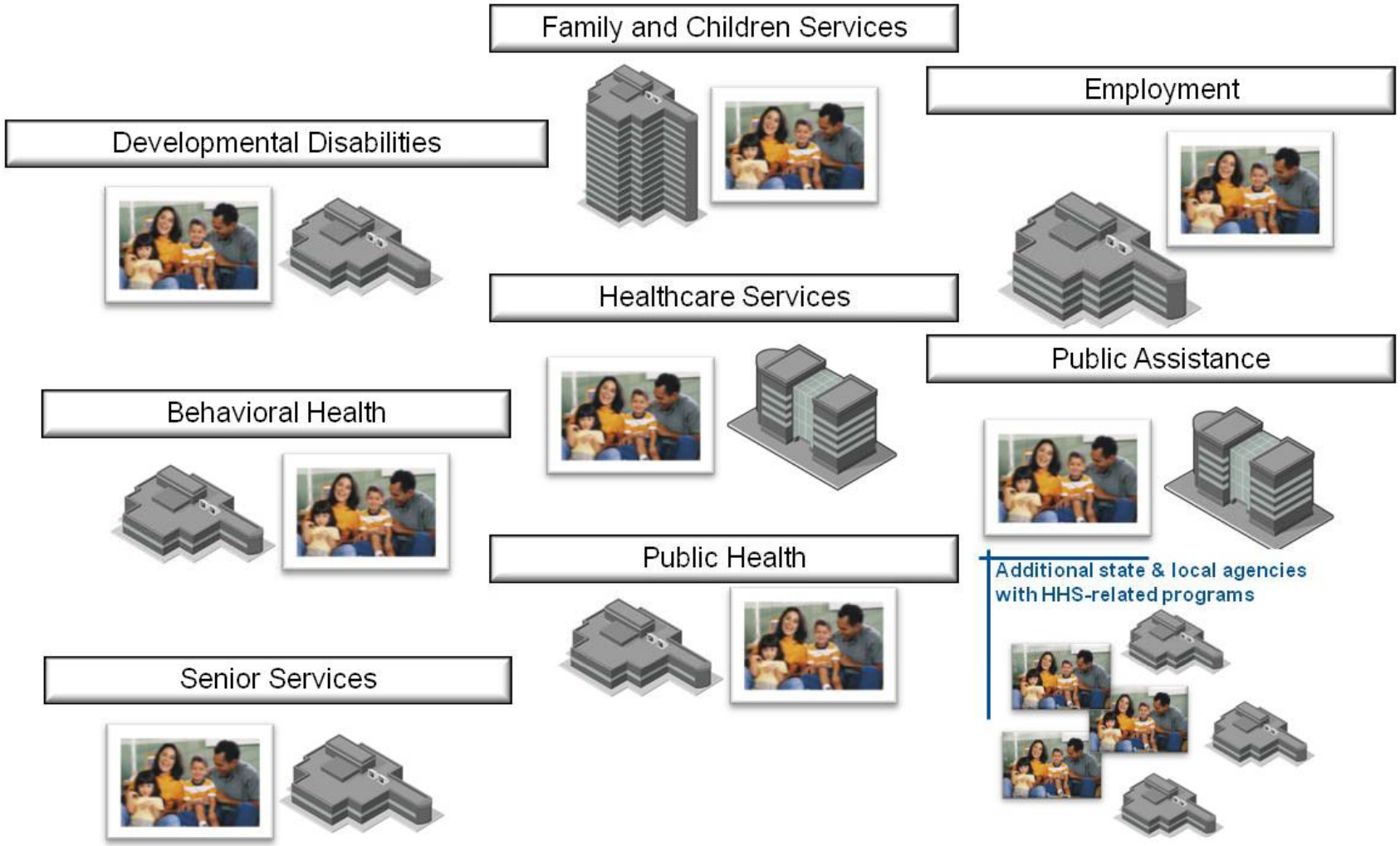
Health and Human Services (HHS) Agency Today:
Agency-Centered Collection of Programs



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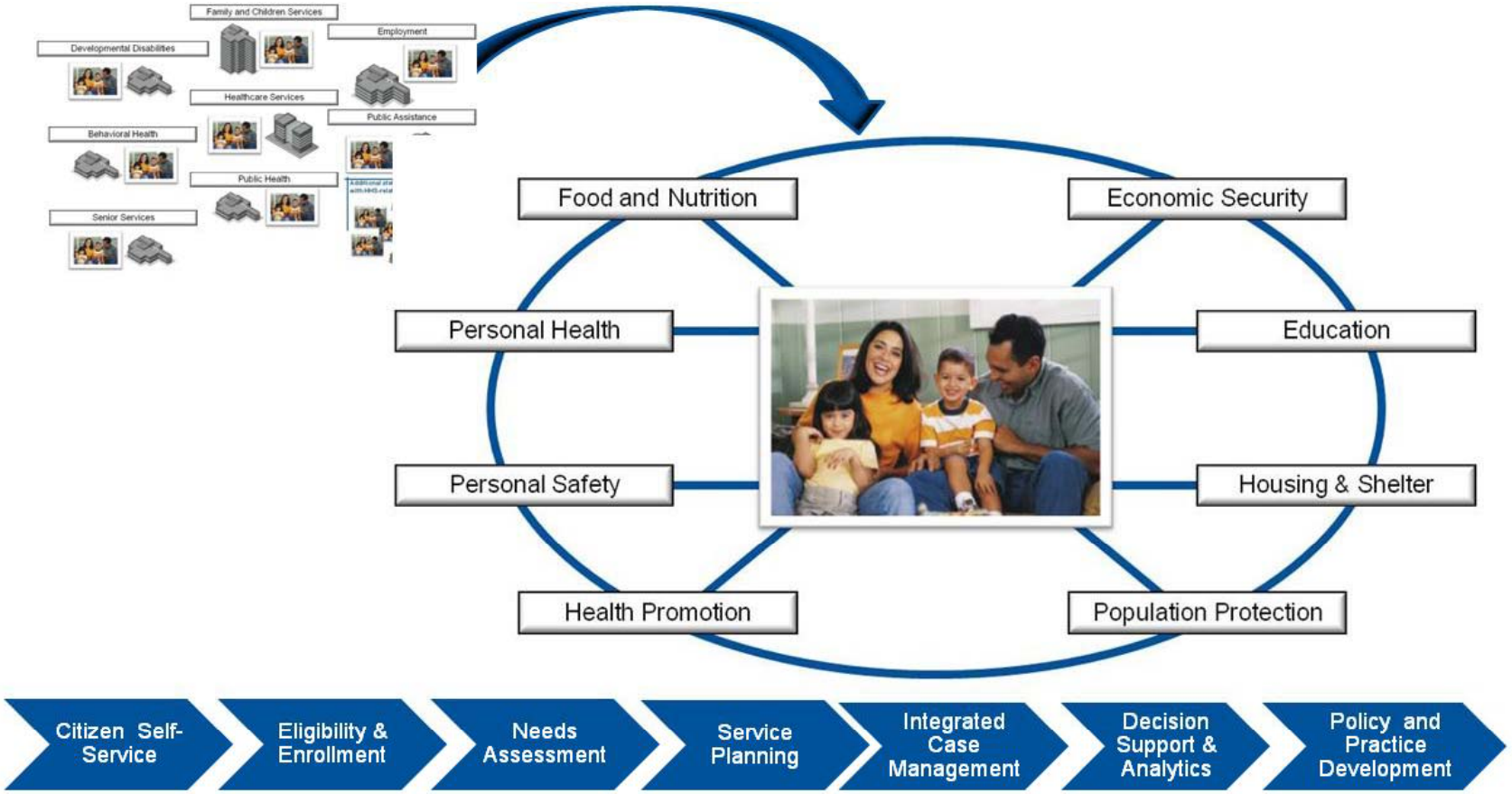
Health and Human Services (HHS) Agency The Future:
Transformation to a High Performance and Person-Centered HHS Model of Practice



Transformation of HHS
Leveraging the Healthcare Reform and
Health Information Technology (HIT) Agenda

Follow the Money

National HIT Funding Streams and Opportunities - $50 Billion Invested

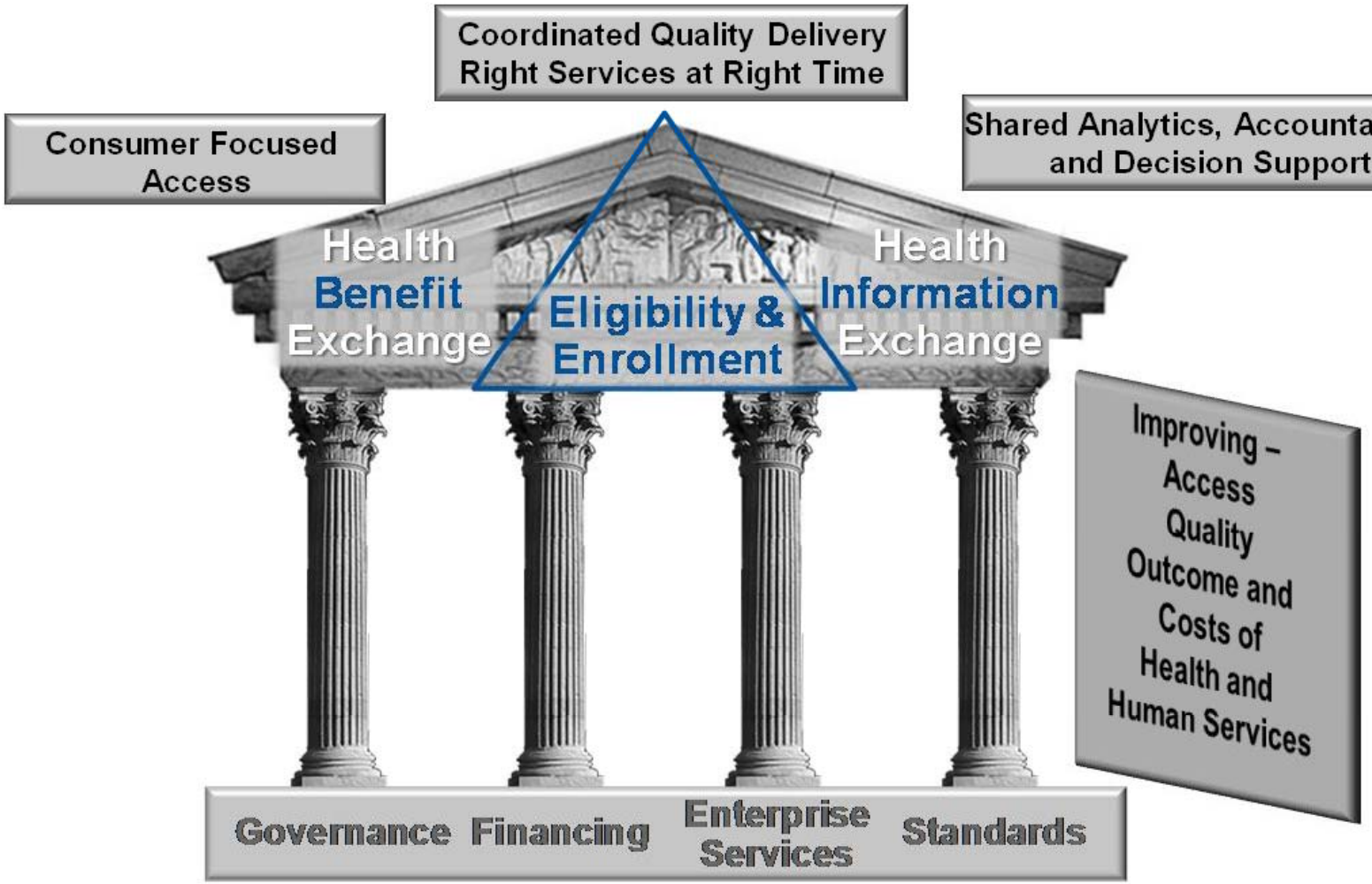
More in the pipeline - Follow the Money

- Office of the National Coordinator (ONC) – Section 3013 (State HIE); Section 3011 (Jurisdictional HIT); Beacon Grant Opportunities; and Regional Extension Centers (REC)
- Health Insurance Exchange (HIX)
- Centers for Medicare and Medicaid Services (CMS)
  - State Medicaid HIT Planning - SMHP (Electronic Health Record - EHR / HIT Adoption – Meaningful Use) - Implementation and Management of Medicaid Incentive Program for Medicaid Providers
  - Centers for Medicare and Medicaid Services Innovation (CMMI)
  - Enhanced Eligibility Determination and Integrated Approaches
  - Medicaid Information Technology Architecture (MITA) Assessment, Roadmap and MMIS Enhancements
- Center for Disease Control (CDC) Public Health Infrastructure Improvement and Registry Modernization
- Women, Infants and Children (WIC) Clinic and Electronic Benefit Transfer (EBT) Development and Modernization
- Behavioral Health EHR Certification Standards and Future Approval for CMS Incentive Dollars

Changing Political Landscape

- Need for agility and to be prepared for several “what if” scenarios
- Key aspects of Healthcare Reform and Human Services redesign will continue:
  - Health Information Technology (HIT) – *Interoperability and Enterprise Information Exchange*
  - Movement Towards Pay for Performance, Accountability and Shared Analytics
  - Integration of Health and Human Services - Improved Coordination and Minimizing Duplication
- Leveraging Existing Investments and Developing “Shovel Ready” IT Enhancement Strategies and Plans

Three Healthcare Reform and HIT Initiatives Rest On Four Pillars



Health Benefit Exchanges Can Drive State HHS Transformation

State Exchanges can be

Innovation
Rules Engines

for

HHS Transformation

Adapted from: State of Wisconsin. "Wisconsin Early Innovator Grant Application." Cooperative Agreements to Support Innovative Exchange Information Technology Systems, CFDA:93.525. December, 2010.

Integrated Health and Human Services

Moving from Silos to an Integrated Enterprise Approach

Emerging Model of Practice Trends Impacting HHS

Traditional HHS Focus	Emerging Trends for HHS Focus
Program Specific Services	Integrated and Coordinated Services Across Programs
Resource and Process Objectives – "Counts"	Outcome and Impact Objectives – "ROI"
Service and Benefit Centered	Client/Patient (Person) Centered
Deficit (Problem) Based Practice Model	Strength Based Model of Practice
Compliance and Control	Business Intelligence and Advanced Analytics for Decision Anticipation, Support and Validation

Best Practices – *What we know about Health and Human Services Best Practices -*

- Person and Context Oriented Services – Not Program Oriented Services
- Accessible – "No Wrong Door"
- Focus on Prevention, Wellness, Development and Self Sufficiency
- Comprehensive and Coordinated Array of Services and Formal and Information (Social) Supports
- Outcome and Return On Investment (ROI) Focused
- Anticipatory and Responsive
- Cuts Across Public and Private Providers, Services and Supports
- Strengthens Individual's Capacity to Build Mediating Structures – *Not Solely Government Dependent*

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Emerging IT Trends Impacting HHS

Traditional IT Focus	Emerging Trends for IT Focus
Program Specific Support	Enterprise and Cross Program Views and Support
Cost Reduction	Financial and Programmatic Performance, Trends and Benefits
Support Existing Workflows – Status Quo	Support Redesign of Workflows and Integration of Efforts – Reengineering and Collaboration
Maintenance, Control and Compliance – Tactical	Agility, Innovation, and Responsiveness – Strategic
Data Entry, Repository and Reporting	Case Management and Decision Support and Business Intelligence and Advanced Analytics for Decision Anticipation, Support and Validation

Benefits of Technology Transformation

- Seamless flow of processes and information across the enterprise and with trading partners
- Enhances the quality and usefulness of health and human services data and information
- Ensuring security, accuracy and timeliness of data and information
- Enables advanced analytics and predictive modeling
- Strengthens the continuity and congruency of program initiatives and services
- Improving outcomes of programs and services
- Enhances the agility of the agency in anticipating, predicting and responding to changing demands
- Minimizes duplication of efforts and expenditures
- Strengthens cost predictability, achievement of savings and quantifiable Return on Investment (ROI)

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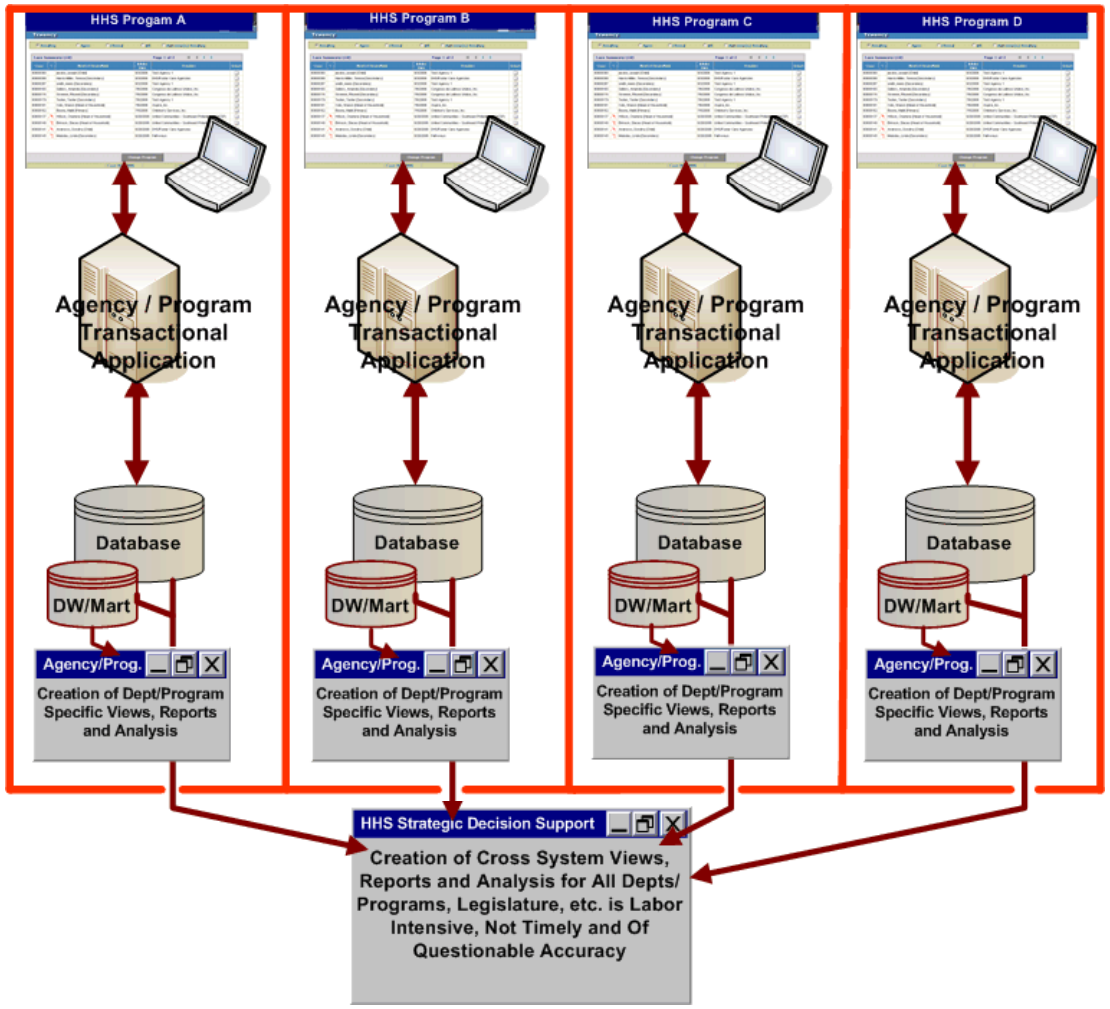
Integrated Health and Human Services

Technology Migration Considerations
Key To Better Outcomes and Lower Costs

Current Silo Approach to HHS
Created by Federally Funded State Systems



- **Agency – Program Focused.** Silo by Silo solution to application development and legacy replacement
- **Costly in Time and Money.** More costly and lengthy approach to achieving integrated services support
- **Diversity of Tools and Standards and Capacity.** Within agencies / programs and across HHS a wide variety of applications, tools and protocols as well as varying reporting and analytical capabilities
- **Limited BI Capabilities.** Traditional HHS environment and the silo approach makes any cross systems business intelligence labor intensive to achieve and too often outdated information once it is gathered - Limited strategic decision support at all levels

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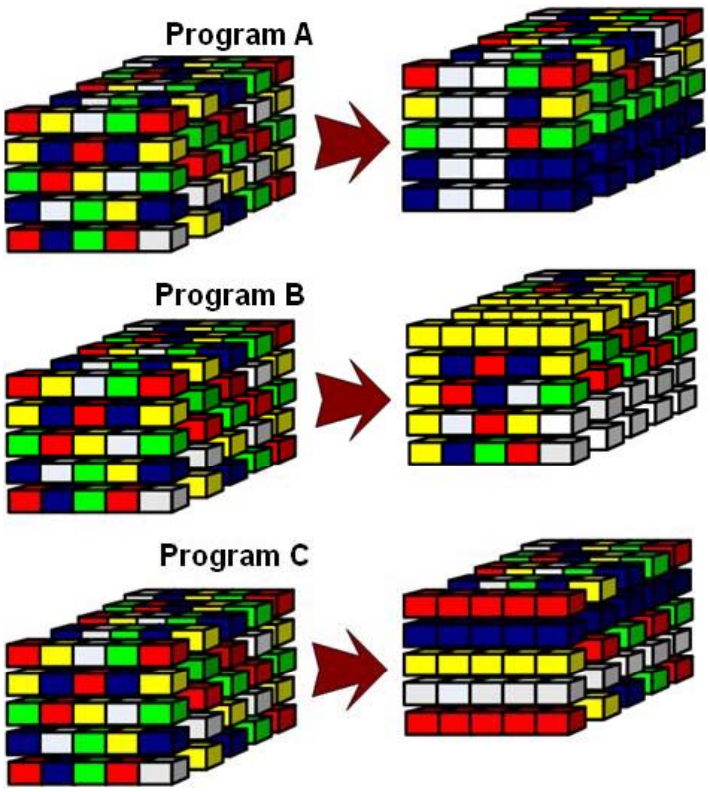
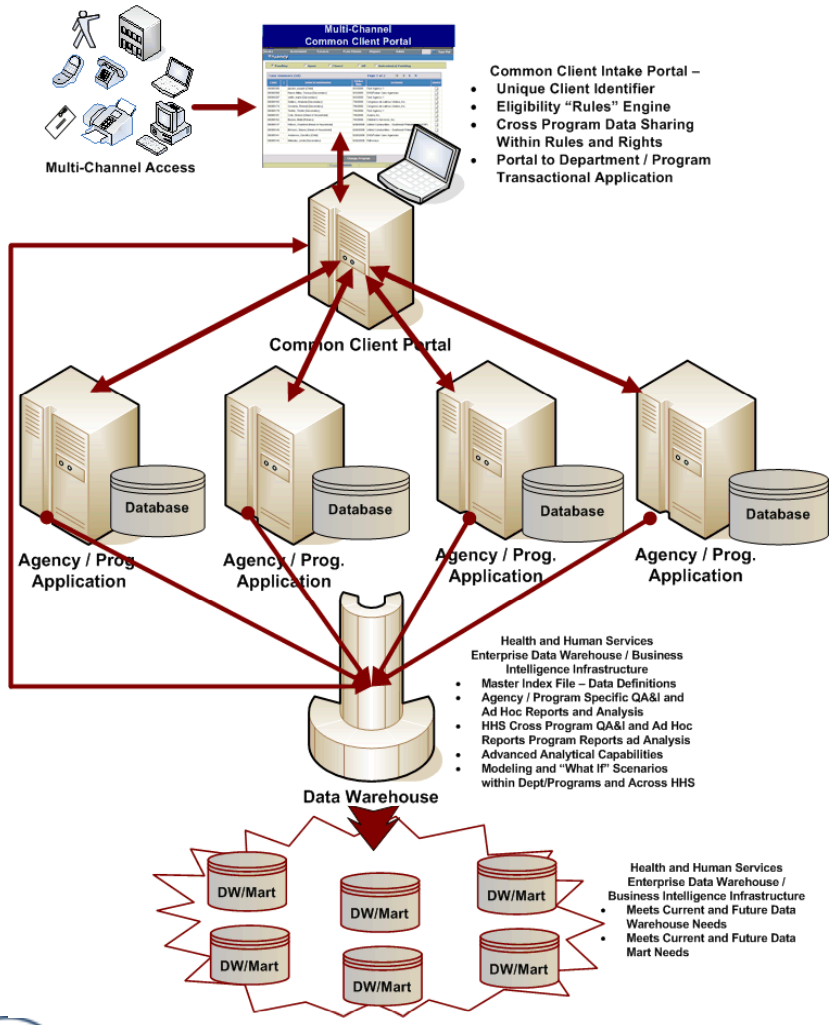
Current-State HHS Decision Support Capacity



- Data definitions, structure and protocols are specific to each agency and program
- Wide variance in capacity across HHS for data queries, manipulation, analysis and reporting
- Provides limited and segmented view of activities within agencies and programs
- Limits the capacity of HHS to benefit from cross systems (enterprise) views that could be supportive of individual agencies and programs

Future State Infrastructure
Movement to Integrated HHS IT Approach



- Leverages Service Oriented Architecture
- Supports Integrated Consumer Access, Intake and Service Delivery
- Leverages the capacity of current transactional applications and minimizes need to replace all legacy applications at one time
- Improves both user and consumer's experience
- Provides for Improved Data Quality
- Establish Master Client and Provider Index Capabilities
- Establishes Enterprise Data Warehouse and BI standards for governance, data, technology, protocols, interfaces and tools

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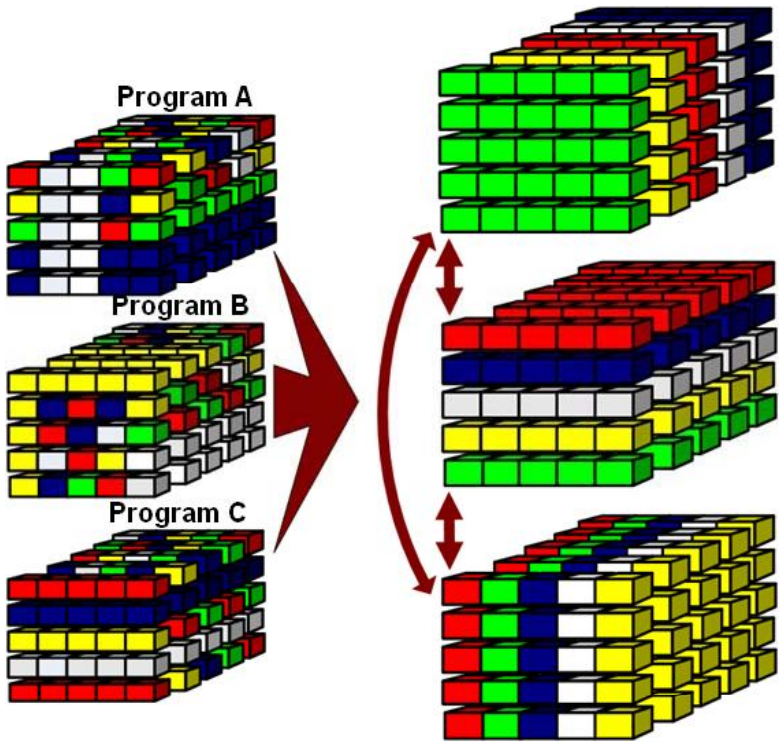
HHS Emerging Trends
Future-state Decision Support Capacity



- Establishment of data governance, stewardship and standards
- Within legal and regulatory requirements, develop an integrated approach to an Enterprise Data Warehouse / Business Intelligence (EDW/BI) infrastructure and data analytics
- Strengthens agency / program reporting and decision support capabilities
- Provides for a robust decision support capacity across HHS
  - Real time interactive access, queries, manipulation, analysis and modeling of data and information
  - Greater support to ***Anticipate, Support*** and ***Validate*** key decisions and activities at both the agency / program level and across the continuum of HHS programs and services
  - Addresses the key question *"…we don't know what we don't know…"*

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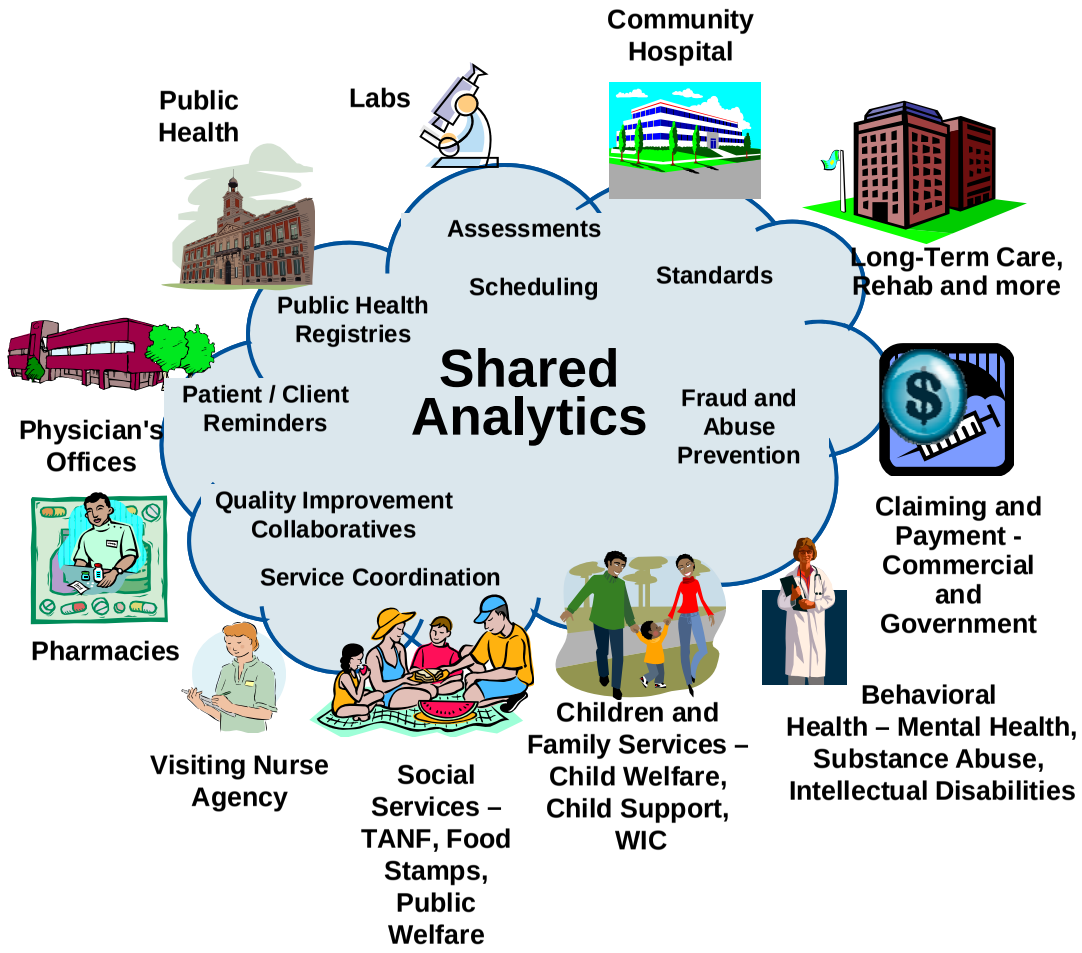
Integrated HHS Information

Framework for Improving Access, Quality, Outcomes and Cost



- Internal State Enterprise Information Exchange can support the protection and promotion of health and well-being at both the population and client level across all of the State's HHS programs and services
- An internal Enterprise Information Exchange, built on national interoperability standards aligned with ONC's HIE initiative strengthens public/private partnerships to produce better outcomes more efficiently
- Shared analytics, with appropriate security and privacy protection controls is vital to improving the quality, outcome and costs of State HHS programs and services

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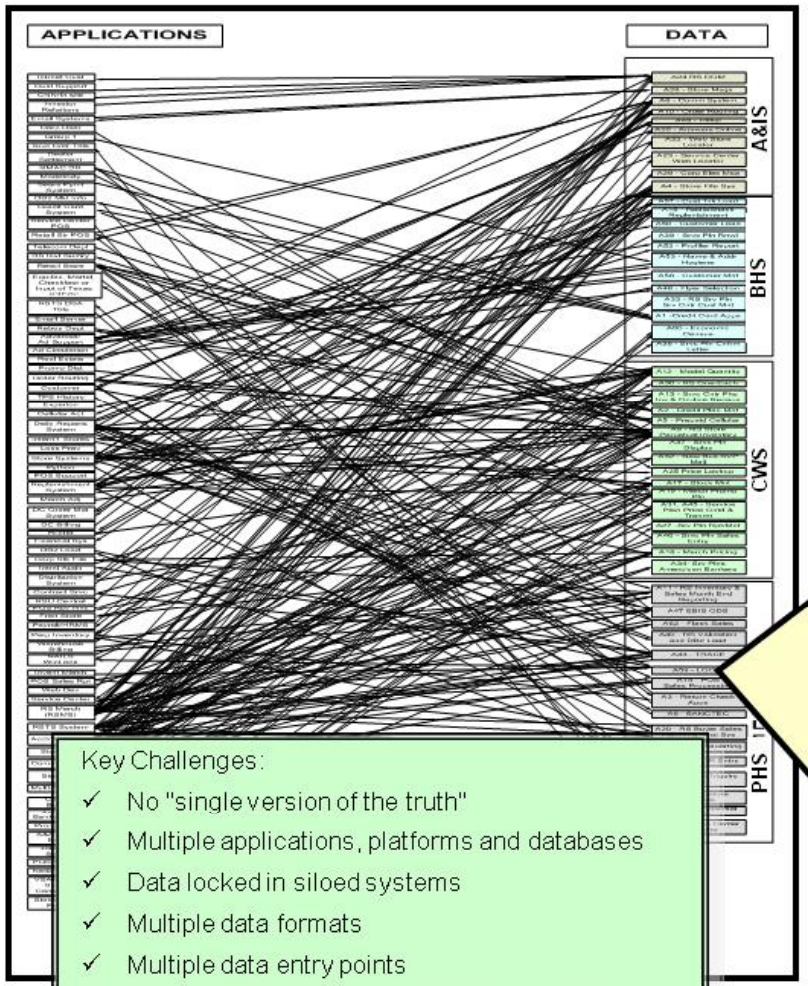
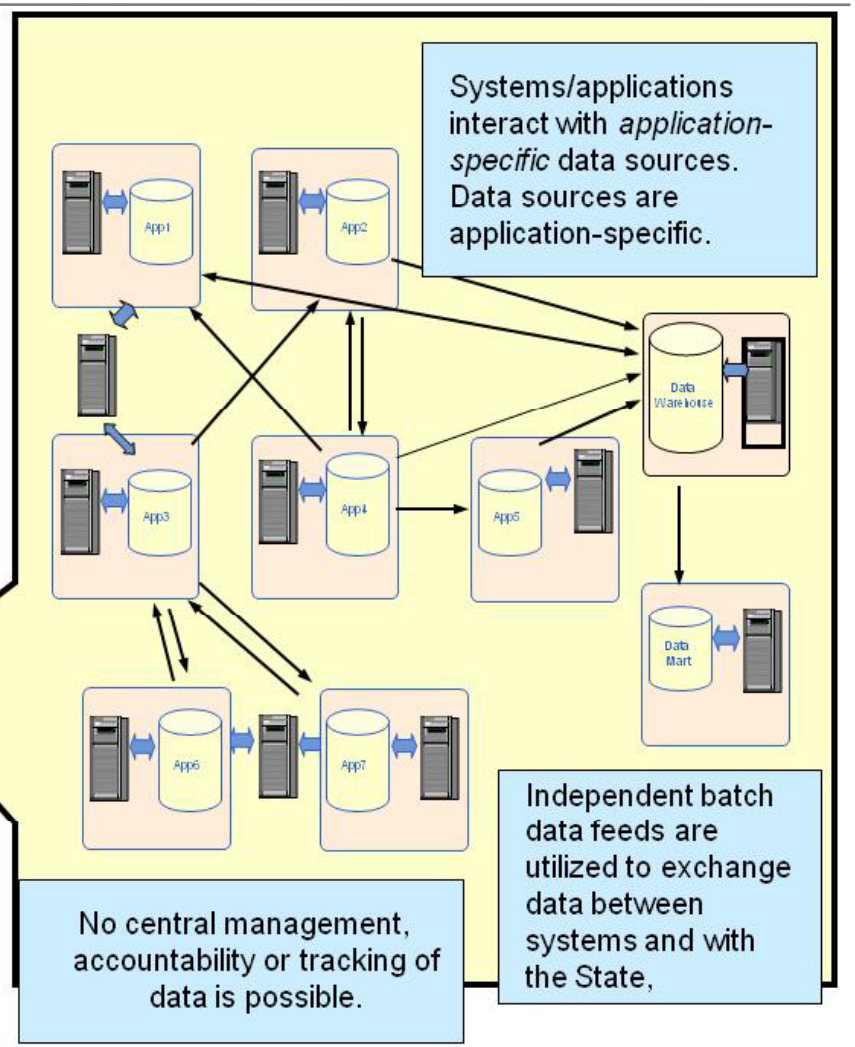
Current HHS Point to Point System Interface

Challenge to HHS Information Integration



Key Challenges:

- ✓ No "single version of the truth"
- ✓ Multiple applications, platforms and databases
- ✓ Data locked in siloed systems
- ✓ Multiple data formats
- ✓ Multiple data entry points
- ✓ Incompatible and inconsistent business data

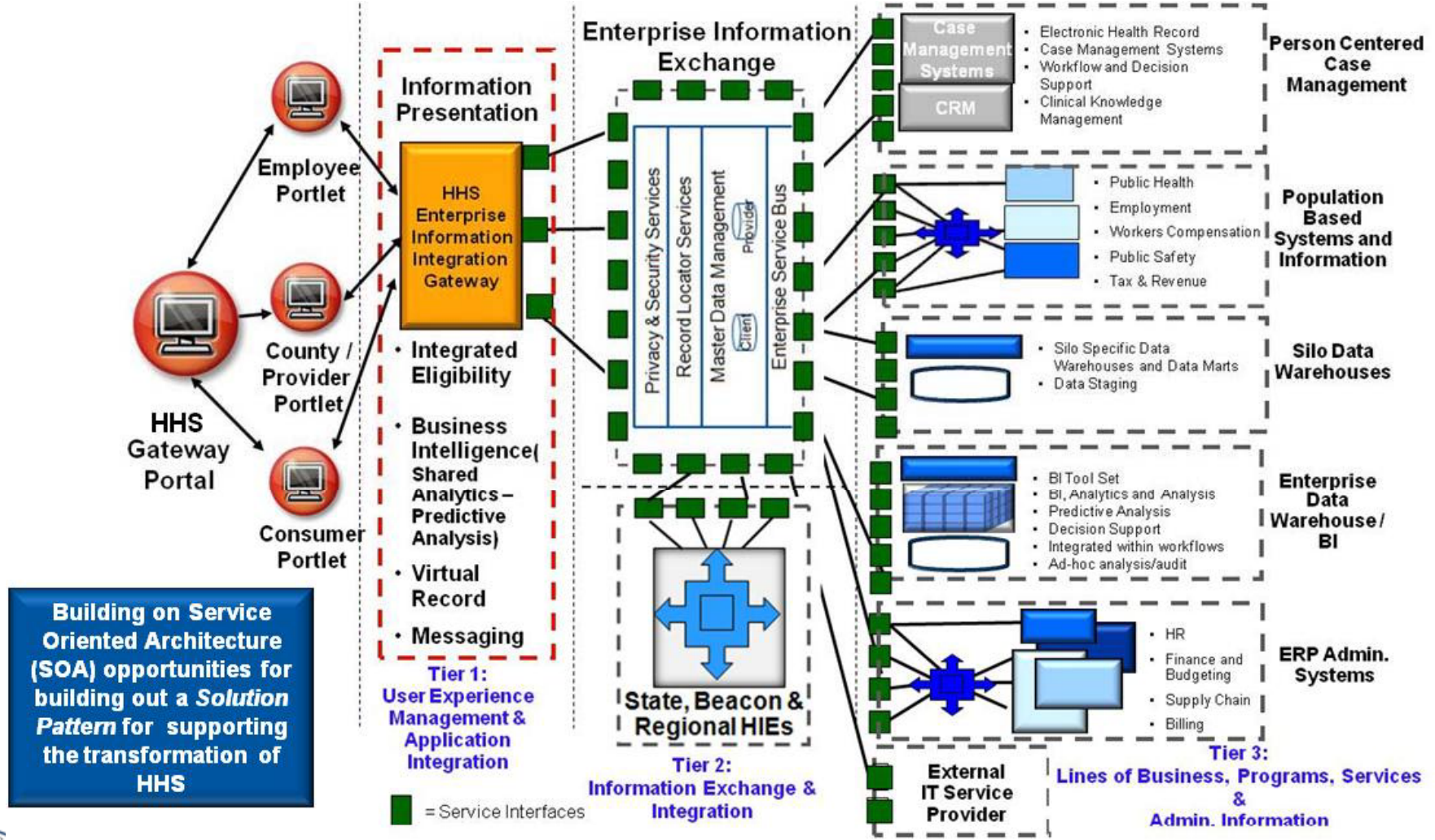


Integrated Health and Human Services

Getting Started: The Future HHS Solution Pattern

Solution Pattern Approach for Enterprise Information Integration

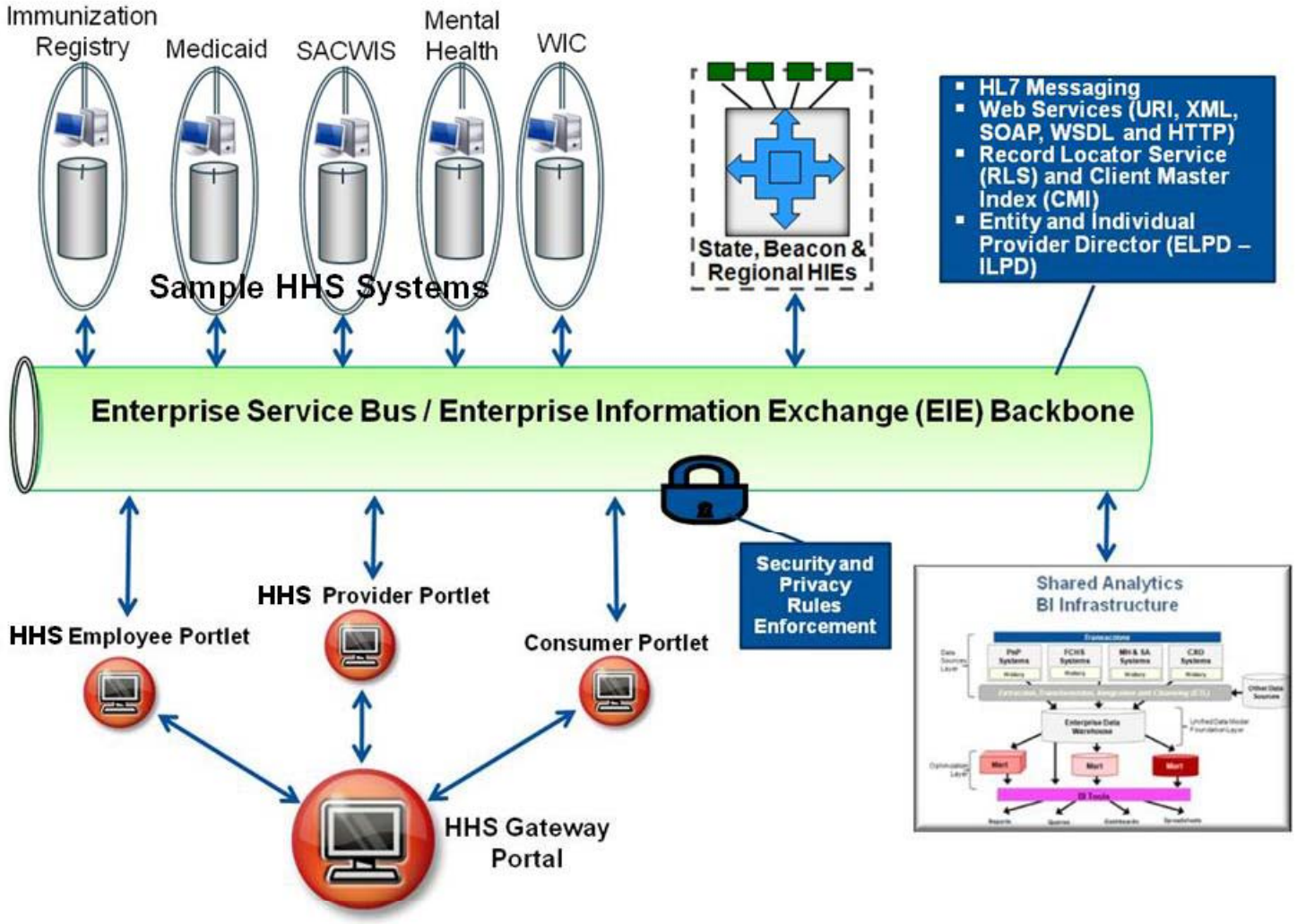
This is NOT about building a new system – **How you can leverage current investments?**



Building on Service Oriented Architecture (SOA) opportunities for building out a *Solution Pattern* for supporting the transformation of HHS

Gartner

Envisioned Target HHS Environment for Enterprise Information Sharing,
Shared Analytics and Decision Support



Getting Started

Key Gates and Critical Success Factors

Key “Gates” For Success

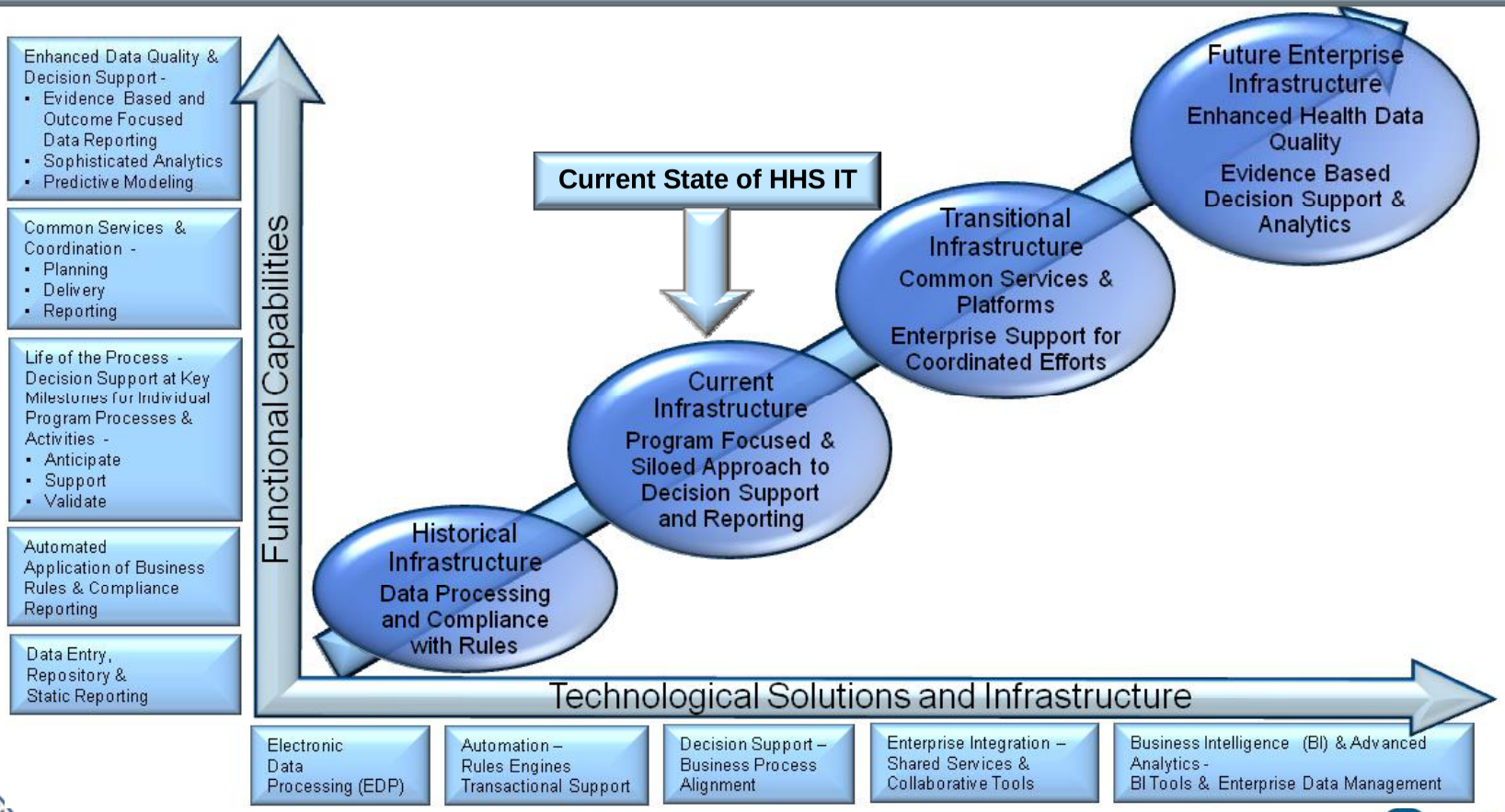
Opportunities for leveraging current investments and rapid deployment of new IT infrastructure to support HHS transformation

Compelling Business Imperatives	Internal Market Scan of IT Capabilities	Identification of Gaps and Alternatives Analysis
Governance and Organizational Structure	Defining Requirements	External Market Scan and Procurement Strategy
Establishment and Compliance to Standards	Integration of Federal Initiatives, Funding and Approvals	Execute

“Go” – “No Go” Gates

HHS Infrastructure Transformation
Evolutionary Process

Requires the establishment of the governance structure, standards and a decision making framework essential to assess and identify the investments that need to go forward to support an enterprise approach to HHS



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HHS Infrastructure Transformation

Priority Setting and Decision Making Framework

Investments in new or existing IT applications must be measured against your state's vision for a person-centered enterprise approach to HHS

- Robust Enterprise Capabilities - Interoperability - Information Exchange - Agile and Responsive IT Infrastructure
- Business Intelligence (BI) & Advanced Analytics BI Tools & Enterprise Data Management
- Enterprise Integration – Shared Services & Collaborative Tools
- Decision Support – Program Specific Alignment
- Automation – Program Specific Rules Engines Transactional Support
- Electronic Data Processing (EDP) Digitized Records
- Paper & Fax

Technological Infrastructure

Enterprise Decision Framework Bar

Future Enterprise Infrastructure Standards

1. Person-Centered
2. Enterprise Focused
3. Supports Integration Standards
4. Interoperable Capabilities
5. Analytics Enabled & Focused
6. Service Oriented Agile Architecture

HHS Enterprise Pathway

Current Infrastructure

Program Siloed Approach to Service Delivery & Decision Support and Reporting

Time-Line – Toward Future for Enterprise IT Support

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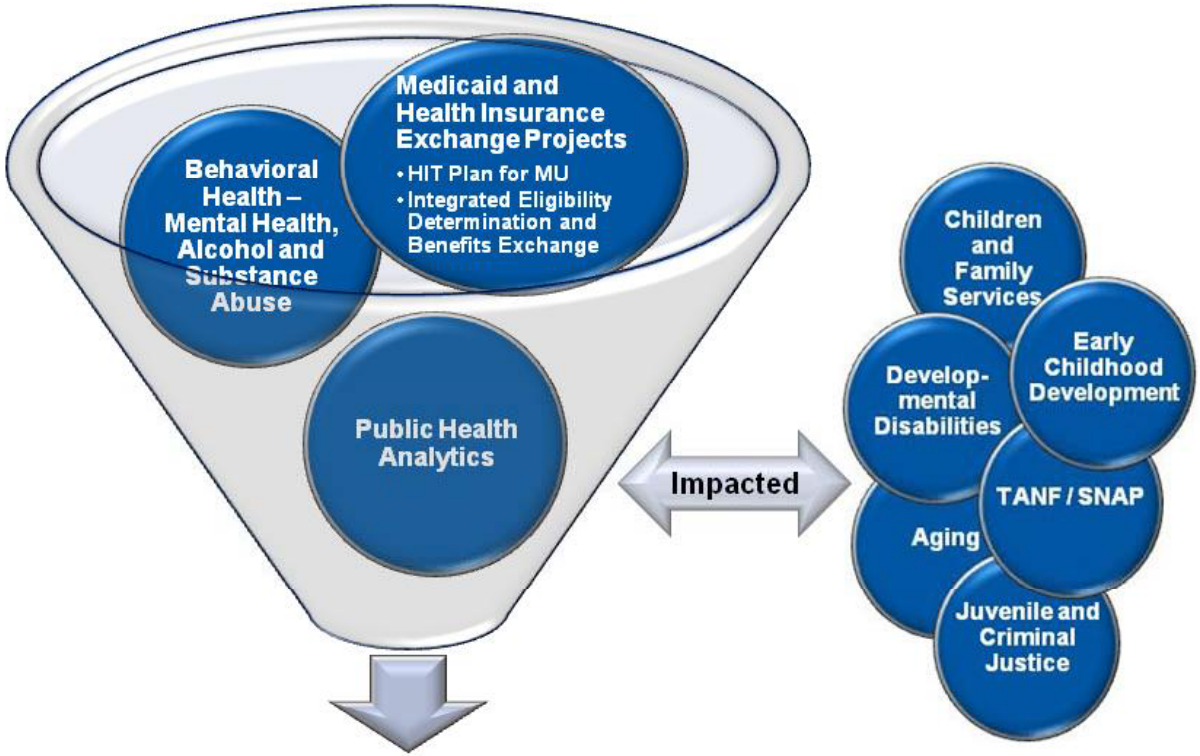
Considerations of Where to Start?

- Leverages 90/10 Federal Financial Participation
- Leverages Health Insurance Exchange Funding
- Supports Ability to Build Extensible Foundation
- Aligned with National and State Healthcare Reform and HIT Agendas



Integrated HHS Technology Foundation

- **Portal – Health and Human Services Gateway**
- **Integrated Eligibility Rules Engine and Health Insurance Exchange**
- **Enterprise Service Bus**
- **BI – Shared Analytics and Predictive Modeling**

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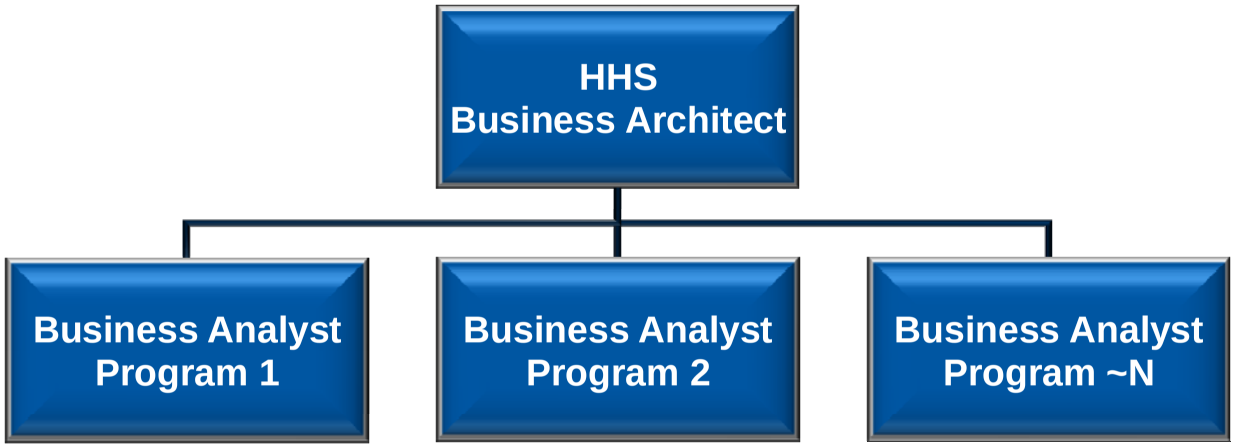
Integrated HHS

Business Architect - Requires a New Vision

- Develop a person-centric view of the state HHS enterprise - *How do our employees, partners, and clients experience us?*
- Move from program "silo" only understanding and capabilities to and "enterprise" focused approach – *Fidelity to the program and profession – but freeing up the data and information*
- Improving quality, outcome and cost of services - *Focus on integrated practice approaches and opportunities that can leverage agile technology solutions*
- Challenge the HHS continuum of programs to redesign where appropriate in strengthening an integrated HHS program development and service delivery approach – *Developing a new Business Architect role to facilitate the identification of opportunities for transformation*



Integrated HHS
Key Planning Guidelines

1. **Develop Consensus on a Unifying Vision –** *Vision and Scope for the HHS Integration Initiative*
2. **Involve the Right People and Focus on the Right Issues –** *Representative Stakeholders Focusing on Strengthening Collaboration and Transformation*
3. **Identify the Benefits to Be Achieved Through Integrated HHS** – *For Elected and Executive Leadership, Departments, Staff, Collaborative Partners and Consumer - Measurable Benefits and Outcomes*
4. **Identify Common Needs and Concerns–** *Opportunities for Improving Continuity and Congruency of Services to Produce Better Outcomes at Lowest Cost*
5. **Identify Citizen, Consumer, Staff, Managerial and Executive Needs to be Achieved -** *Operations/Funding/Policies/Procedures/Practice/Results*
6. **Develop Functional and Technical Requirements –** *Aligned with the Mission, Mandates, Model of Practice, Programmatic Needs, and Envisioned Outcomes and ROI of the Collaborative Partners through an Integrated HHS Enterprise*
7. **Plan and Budget for HHS Integration Initiative –** *Prioritizing and Sequencing – "Doable" Staged Process Building on Demonstrated Successes Along the Way*

Contact

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Gartner Consulting
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To: Connecticut Stakeholders in Health Information Technology

From: Roderick L. Bremby, Commissioner
Connecticut Department of Social Services

Date: October 8, 2014

Subject: **Health Information Technology Initiatives**
And Implementation of Public Act 14-217

***

I am writing to share an important update about the many Health Information Technology (HIT) initiatives underway in Connecticut, and others we are exploring as potential solutions. Our primary goal in the HIT arena is to adopt and advance the use of national standards that support secure data exchanges and enhance interoperability.

Below is a list of initiatives with a brief project status.

1. Planning: We have initiated a process to update the Health Information Technology Strategic and Operational Plan over the coming year. The initial plan was created by HITE-CT, an agency that was sunset on June 30, 2014. Public Act 14-217 designates the Department of Social Services to lead this effort in partnership with other agencies by adopting best practices and standards in HIT to improve health care delivery and quality of care. We are planning to meet over the next six months with a focus on the following:

    a. Create a HIT vision statement for our state;
    b. Identify common HIT goals;
    c. Identify and support an enterprise built on an interoperability framework; and
    d. Operationalize a cross-agency IT governance structure that builds upon and ties the various initiatives that have been undertaken in the last four years with respect to health and human services.

2. Integrated Eligibility System: DSS and Access Health CT, the state's health insurance exchange, have developed an integrated eligibility system for Medicaid, the Children's Health Insurance Program and private qualified health plans under the Affordable Care Act. DSS is also planning and implementing a new eligibility management system ('ImpaCT') to replace our antiquated legacy system and to serve as a platform for eventual linkage of human service agencies across the state government enterprise.

3. Enterprise Assets: DSS, along with DAS/BEST, is in the process of standing up an Enterprise Master Patient Index (eMPI) and a Provider Directory. Both of these assets were procured by HITE-CT and have been transferred to DSS for use within the enterprise. We would like to initiate a discussion with organizations interested in uni- or bi-directional exchange of provider directory feeds on a regular basis. There will be a cost-share associated with this service for bi-directional feeds. Our vendor for both EMPI and Provider Directory is NextGate (www.nextgate.com/).

4. Medicaid Electronic Health Records Incentive Program – As of August 2014, DSS has distributed over $76 million in payments to over 2,200 Eligible Professionals (EPs) and 28 eligible hospitals.

    a. Direct Exchange – On April 23, 2014, DSS stood up a Health Information Service Provider (HISP) to provision Direct mailboxes for EPs participating in this program. A one-year free subscription is being provided to the EPs, renewable at cost after the first year. As of September 19, 2014, we have reached out to 1,548 providers and, of these, 30 set up Direct mailboxes; 365 already have a Direct account; another 213 are waiting for their certified electronic health records (CEHRs) to implement Direct; and 59 declined to sign up for Direct messaging service. So far 164 messages have been received or sent on our HISP. Currently, DSS is considering the use of Direct for other projects to enhance care coordination. Use of Direct messaging will help EPs exchange transfer of care summaries with long-term care facilities that may not have access to CEHRs.

    b. HISP to HISP Directory Exchange – We want the DSS-HISP to have directory access or exchange with other HISPs that are being used in Connecticut. To this end, we have successfully exchanged Direct addresses with the Yale-New Haven Hospital System that uses a Surescripts HISP, Hartford Healthcare HISP, and Charlotte Hungerford HISP. We would welcome discussions with other HISPs to get these exchanges as seamless as possible, so that practicing professionals are easily able to send Direct messages to the intended recipient irrespective of the Direct HISP they use.

    c. Electronic Clinical Quality Measures (eCQMs): This year we are focusing on the eCQMs and working with providers to explore ways of sending these data using defined standards, such as Quality Reporting Document Architecture (QRDAs) category I and III. Additionally, we really want to minimize moving data but ensuring timely access to data for reporting and audits. To this end, we have purchased a technology (http://zatohealth.com/) to collect Meaningful Use (MU) measures (Stage 1 and Stage 2) as they relate to the Medicaid EHR incentive program. In a very simplistic way, this technology uses indices and edge servers to give us access to the MU data without an agency needing to send it to us. Let me know if you would be interested in a preliminary discussion with our team.

5. DSS was the recipient of a demonstration grant for **Testing Experience and Functional Assessment Tools (TEFT)**. This four-year initiative is comprised of four components, of which two are related to HIT; namely, testing the use of Personal Health Records (PHRs) among the community-based long-term services and supports (LTSS) and aiding the development and testing of the eLTSS content and transport standard. This grant began on May 1, 2014, and the first year is the planning year. We are in the process of organizing 10

planning meetings across the state. You may have already been contacted to participate in this discussion, as we ask the long-term care community to share their thinking. (www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Delivery-Systems/Grant-Programs/TEFT-Program-.html)

We are planning town hall meetings in the coming year, details to be communicated shortly, to discuss and explore additional ways we can further collaborate to extend the statewide HIT/Health Information Exchange (HIE) agenda. Please do not hesitate to reach out to me, or Minakshi Tikoo, Health and Human Services HIT Coordinator (tikoo@uchc.edu), if you need additional details on any of the initiatives listed above, or if you have any questions or suggestions as we embark on developing the HIT Roadmap for the State of Connecticut.

Thank you, and best regards.

Roderick L. Bremby
Commissioner
Connecticut Department of Social Services
55 Farmington Avenue
Hartford, Connecticut 06105-3730

Roderick.bremby@ct.gov
860-424-5053

Attachment: Budget Bill 5597, passed and included in Public Act 14-217

cc: Minakshi Tikoo, PhD, HHS HIT Coordinator

General Assembly

Bill No. 5597

February Session, 2014

LCO No. **5472**

Referred to Committee on No Committee Introduced by:
REP. SHARKEY, 88th Dist. SEN.
WILLIAMS, 29th Dist.

AN ACT IMPLEMENTING PROVISIONS OF THE STATE BUDGET FOR THE FISCAL YEAR ENDING JUNE 30, 2015.

...

Sec. 169. Subdivision (12) of section 1-79 of the 2014 supplement to the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

(12) "Quasi-public agency" means Connecticut Innovations, Incorporated, **[**and**]** the Connecticut Health and Education Facilities Authority, the Connecticut Higher Education Supplemental Loan Authority, the Connecticut Student Loan Foundation, the Connecticut Housing Finance Authority, the State Housing Authority, the Connecticut Resources Recovery Authority, the Capital Region Development Authority, the Connecticut Lottery Corporation, the Connecticut Airport Authority, **[**Health Information Technology Exchange of Connecticut,**]** the Connecticut Health Insurance Exchange and the Clean Energy Finance and Investment Authority.

Sec. 170. Subdivision (1) of section 1-120 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

(1) "Quasi-public agency" means Connecticut Innovations, Incorporated, and the Connecticut Health and Educational Facilities Authority, Connecticut Higher Education Supplemental Loan Authority, Connecticut Housing Finance Authority, Connecticut Housing Authority, Connecticut Resources Recovery Authority, Capital Region

Development Authority, Connecticut Lottery Corporation, Connecticut Airport Authority, **[**Health Information Technology Exchange of Connecticut,**]** Connecticut Health Insurance Exchange and Clean Energy Finance and Investment Authority.

Sec. 171. Section 1-124 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

(a) Connecticut Innovations, Incorporated, the Connecticut Health and Educational Facilities Authority, the Connecticut Higher Education Supplemental Loan Authority, the Connecticut Housing Finance Authority, the Connecticut Housing Authority, the Connecticut Resources Recovery Authority, **[**the Health Information Technology Exchange of Connecticut,**]** the Connecticut Airport Authority, the Capital Region Development Authority, the Connecticut Health Insurance Exchange and the Clean Energy Finance and Investment Authority shall not borrow any money or issue any bonds or notes which are guaranteed by the state of Connecticut or for which there is a capital reserve fund of any kind which is in any way contributed to or guaranteed by the state of Connecticut until and unless such borrowing or issuance is approved by the State Treasurer or the Deputy State Treasurer appointed pursuant to section 3-12. The approval of the State Treasurer or said deputy shall be based on documentation provided by the authority that it has sufficient revenues to (1) pay the principal of and interest on the bonds and notes issued, (2) establish, increase and maintain any reserves deemed by the authority to be advisable to secure the payment of the principal of and interest on such bonds and notes, (3) pay the cost of maintaining, servicing and properly insuring the purpose for which the proceeds of the bonds and notes have been issued, if applicable, and (4) pay such other costs as may be required.

(b) To the extent Connecticut Innovations, Incorporated, and the Connecticut Higher Education Supplemental Loan Authority, Connecticut Housing Finance Authority, Connecticut Housing Authority, Connecticut Resources Recovery Authority, Connecticut Health and Educational Facilities Authority, **[**the Health Information Technology Exchange of Connecticut,**]** the Connecticut Airport Authority, the Capital Region Development Authority, the Connecticut Health Insurance Exchange or the Clean Energy Finance and Investment Authority is permitted by statute and determines to exercise any power to moderate interest rate fluctuations or enter into any investment or program of investment or contract respecting interest rates, currency, cash flow or other similar agreement, including, but not limited to, interest rate or currency swap agreements, the effect of which is to subject a capital reserve fund which is in any way contributed to or guaranteed by the state of Connecticut, to potential liability, such determination shall not be effective until and unless the State Treasurer or his or her deputy appointed pursuant to section 3-12 has approved such agreement or agreements. The approval of the State Treasurer or his or her deputy shall be based on documentation provided by the authority that it has sufficient revenues to meet the financial obligations associated with the agreement or agreements.

Sec. 172. Section 1-125 of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

The directors, officers and employees of Connecticut Innovations, Incorporated, and the Connecticut Higher Education Supplemental Loan Authority, Connecticut Housing Finance Authority, Connecticut Housing Authority, Connecticut Resources Recovery Authority, including ad hoc members of the Connecticut Resources Recovery Authority, Connecticut Health and Educational Facilities Authority, Capital Region Development Authority, **[**the Health Information Technology Exchange of Connecticut,**]** Connecticut Airport Authority, Connecticut Lottery Corporation, Connecticut Health Insurance Exchange and the Clean Energy Finance and Investment Authority and any person executing the bonds or notes of the agency shall not be liable personally on such bonds or notes or be subject to any personal liability or accountability by reason of the issuance thereof, nor shall any director or employee of the agency, including ad hoc members of the Connecticut Resources Recovery Authority, be personally liable for damage or injury, not wanton, reckless, wilful or malicious, caused in the performance of his or her duties and within the scope of his or her employment or appointment as such director, officer or employee, including ad hoc members of the Connecticut Resources Recovery Authority. The agency shall protect, save harmless and indemnify its directors, officers or employees, including ad hoc members of the Connecticut Resources Recovery Authority, from financial loss and expense, including legal fees and costs, if any, arising out of any claim, demand, suit or judgment by reason of alleged negligence or alleged deprivation of any person's civil rights or any other act or omission resulting in damage or injury, if the director, officer or employee, including ad hoc members of the Connecticut Resources Recovery Authority, is found to have been acting in the discharge of his or her duties or within the scope of his or her employment and such act or omission is found not to have been wanton, reckless, wilful or malicious.

Sec. 173. Section 4-60i of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

(a) The Commissioner of Social Services shall (1) develop, throughout the Departments of Developmental Services, Public Health, Correction, Children and Families and Mental Health and Addiction Services, uniform management information, uniform statistical information, uniform terminology for similar facilities, uniform electronic health information technology standards and uniform regulations for the licensing of human services facilities, (2) plan for increased participation of the private sector in the delivery of human services, (3) provide direction and coordination to federally funded programs in the human services agencies and recommend uniform system improvements and reallocation of physical resources and designation of a single responsibility across human services agencies lines to eliminate duplication.

(b) The Commissioner of Social Services shall, in consultation with the Departments of Public Health and Mental Health and Addiction Services, implement and periodically revise the state-wide health information technology plan established pursuant to section 19a-25d and shall establish electronic data standards to facilitate the development of integrated electronic health information systems, as defined in subsection (a) of section 19a-25d, for use by health care providers and institutions that receive state funding. Such electronic data standards shall: (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 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; (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, as defined in subsection (a) of section 19a-25d; (6) permit the collection of health information in a standard electronic format, as defined in subsection (a) of section 19a-25d; and (7) be compatible with the requirements for an electronic health information system, as defined in subsection (a) of section 19a-25d.

Sec. 174. Section 4-60j of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

In fulfilling his or her responsibilities under sections 4-60i and 4-60*l* and complying with the requirements of section 19a-25d, the **[**commissioner**]** Commissioner of Social Services shall take into consideration such advice as may be provided to the commissioner by advisory boards and councils in the human services areas.

Sec. 175. Section 4-60*l* of the general statutes is repealed and the following is substituted in lieu thereof (*Effective July 1, 2014*):

(a) Matters of policy involving more than one of the agencies designated in section 4-60i shall be presented to the **[**commissioner for his**]** Commissioner of Social Services for his or her approval prior to implementation.

(b) Matters of program development involving more than one of the agencies designated in section 4-60i shall be presented to the commissioner for his or her approval prior to implementation.

(c) Any plan of any agency designated in section 4-60i for the future use or development of property or other resources shall be submitted to the commissioner for his or her approval prior to implementation.

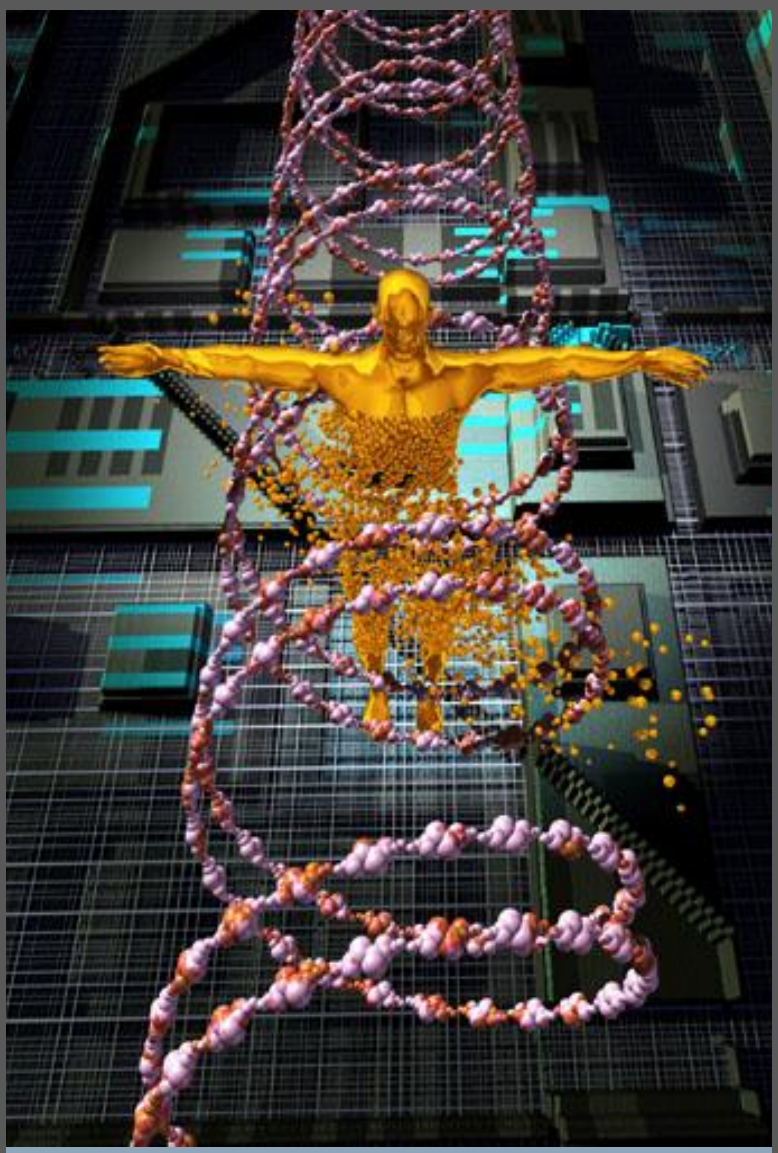
(d) Any plan of any agency designated in section 4-60i for revision of the health information technology plan shall be submitted to the commissioner for his or her approval prior to implementation. If such approval requires funding, after the commissioner has granted approval, the commissioner shall submit such revisions to the Secretary of the Office of Policy and Management.

(e) On or before January 1, 2015, and annually thereafter, the commissioner shall submit, in accordance with the provisions of section 11-4a, the state-wide health information technology plan, as revised in accordance with section 4-60i, to the joint standing committees of the General Assembly having cognizance of matters relating to human services, public health and appropriations and the budgets of state agencies

...

Sec. 259. Sections 10a-203, 19a-402, 19a-750 to 19a-754, inclusive, and 27-138d of the general statutes are repealed. (*Effective July 1, 2014*)

Integrating Connecticut's Health Information Technology:
A White Paper



Prepared by the
Health Technology Work Group of
the Connecticut Health Care Cabinet

AUGUST 29, 2012

White Paper
Integrating Connecticut's Health Information Technology

CONTENTS

I. EXECUTIVE SUMMARY

The goals of integrated Health Information Technology are to ***improve health outcomes; lower operating costs*** and ***provide citizens with far greater convenience and flexibility*** to receive care with appropriate ***assurances of privacy***. Greatly enhanced federal funding is now available for a limited timeline to help states transform decades of investment in standalone systems into a more comprehensive and interconnected technology infrastructure. We propose optimizing the state's human services and HIT investments should be considered an urgent strategic priority.

Multiple efforts are currently underway to modernize the health and human services (CT-HHS) agencies' information systems. There is no reliable coordination across these efforts focused on creating an interoperable and efficient set of technologies. Given the strategic importance of information technology and the magnitude of the investments, the Health Technology Work Group (HTWG) believes that the current state governance and management structures must be aligned to permit clear strategic accountability.

The HTWG recommends the creation of the CT Office of Health Information Technology Coordinator and a supporting organization responsible for the integration of all the agencies HIT investments. Acting under the authority of the Governor, the position should report directly to the Office of the Governor or the Lieutenant Governor. An Executive Steering Committee and a private sector Stakeholder Council should guide this role. The Steering Committee would be made up of Commissioners of the Health and Human Services Cabinet (DCF, DDS, DMHAS, DPH, DSS, DOC), the State's CIO, Director of IT Policy, Health Information Exchange CEO, and the Health Insurance Exchange CEO, chaired by the State HIT Coordinator. The Stakeholder Council should include representatives from hospitals, ancillary support services, researchers, and other health providers.

The mission of the Office would be to establish a statewide framework for enabling technologies and processes that support improved program administration for the State's Health and Human Services (HHS) Enterprise and for stakeholders dedicated to improving health outcomes and administrative procedures for individuals receiving services through state health and human service agencies. The primary goal of the office would be to define and measure statewide progress against an integrated Heath Information Technology framework. Individual project investments should be measured against reuse of the framework or contribution to statewide new capability and sustainability. The Framework is not intended to create a

restrictive bureaucratic structure presenting barriers to implementation; rather we intend to create an environment of innovation, flexibility, alignment, and accountability for this critical work.
The HTWG also recommends the creation of a convening HIT-Business Forum that, on a regular basis will bring public and private sector HIT-Business stakeholders together to share ideas, exchange knowledge about emerging technologies to support the health reform goals and objectives and share best practices.

The HTWG will support a timely transition from its current role and *modus operandi* to a designated State Office of HIT Coordination. Given the urgency and the importance of the re-organization the transition should begin immediately and be completed by December of 2012.

II. CONTEXT AND PURPOSE

This White Paper presents a rationale for and a recommendation to the Health Care Cabinet in support of a rational State Health Information Technology investment strategy. The paper reflects the deliberations of the Health Technology Work Group (HTWG) over the last ten months.

The Affordable Care Act (ACA) of 2010 and the State's Health Reform goals offer an unprecedented opportunity to refresh and reconstruct the infrastructure of Connecticut's health information technology (HIT). The window of opportunity to capitalize on the current unusually favorable terms is, however relatively brief. Because similar conditions are unlikely to present themselves in the foreseeable future, optimizing the state's human services HIT investments should be considered an urgent strategic priority.

Access to federal dollars would make it possible to make major capital investments and further position CT as a national leader in health technology- a strategy that aligns well with other major investments supported by this administration and the state legislature. Health reform allows the state to simultaneously revamp and render interoperable core components of the state human services information technology; to launch a Health Insurance Exchange (HIX) platform and to deploy a state-wide Health Information Exchange (HIE). This multi-pronged approach is in keeping with a vision of a vastly more efficient, effective, integrated, patient centered and equitable system.

Health reform is also driving substantial health information technology investments in the private sector. Physician practices, clinics, hospitals, pharmacies, laboratories and other key delivery system stakeholders are acquiring electronic health records and are developing the capability to exchange health information in a meaningful way. The combined impact of focused and strategic public and private investments in HIT help deliver improved health outcomes and lower operating costs as well as availing citizens of far greater convenience and flexibility to receive care anywhere in the state (and beyond) with assurances of privacy and access to relevant previous medical history.

III. CURRENT STATUS OF THE STATE HEALTH & HUMAN SERVICES IT

Health Information Technology in CT

Multiple efforts are currently underway to modernize the health and human services (CT-HHS) agencies' information systems. Some of these efforts, CONN-ADE, HITE-CT, Developing the CT HIT Workforce initiative, the Regional Extension Center (REC) and CHIN precede ACA while the Health Insurance Exchange (HIX), and the DSS Modernization Project (ConneCT), are more recent and have been driven by the national health reform agenda. These initiatives are critically important. Efforts by those organizations and many more are laudable but they are only loosely interconnected. Their separate funding sources and the specific tactical goals they seek to achieve drive their separate actions.

Coordination of the State's HIT Investments

Linking and coordinating all current state HIT efforts has been a priority voiced repeatedly by the Health Care Cabinet, the Office of Health Reform and Innovation, and multiple agency Commissioners. However, an assessment of the State's HIT coordination efforts by the Health Technology Work Group reveals the absence of convening structure or a single, highly visible and well-resourced state-wide health information technology coordinator charged with integrating multiple disparate operations into a cohesive plan. Given the strategic importance of information technology and the magnitude of the investment, the HTWG believes that the current governance and management structures do not permit clear strategic accountability. We believe that strong leadership endorsed at the highest level of the administration and a supporting organization is needed

to optimize resources, avoid duplication, needless delays or placement of disproportionate emphasis on some system components relative to others to the detriment of the whole.

IV. HTWG RECOMMENDATIONS

1. Office of State HIT Coordinator

The Health Technology Work Group (HTWG) considered options for optimizing current and future HIT investments. After extensive internal deliberations, consultation with expert organizations within and outside the state we present a strong recommendation for the creation of a CT Office of Health Information Technology Coordinator. Such a position should function outside any one state agency; should report directly to the Governor or the Lieutenant Governor. The State HIT Coordinator will bring together "official" committees and working groups under one organization.
The State HIT Coordinator should build on the excellent work by the National Association of State Chief Information Officers (NASCIO) on the Technology Framework for Transforming Medicaid (MITA)[1]. The Framework can be adapted to more broadly (beyond Medicaid) guide the transformation of all the State's health and human services agencies in the context of health reform.
In keeping with the MITA Framework the mission of the State HIT Coordinator can be stated as follows,

"To establish a statewide framework for enabling technologies and processes that support improved program administration for the State's Health and Human Services (HHS) Enterprise and for all stakeholders dedicated to improving health outcomes and administrative procedures for individuals receiving services through state health and human service agencies."

Goals

- Develop seamless and integrated systems that communicate effectively to achieve common HHS goals through interoperability and common standards
- Promote an environment that supports flexibility, adaptability and rapid response to changes in programs and technology
- Promote an enterprise view that supports enabling technologies that align with common HHS business process and technologies.
- Provide data that is timely, accurate, usable, and easily accessible in order to support analysis and decision making for health care management and program administration
- Provide performance measurements for accountability and planning
- Coordinate business strategies across the HHS Enterprise and provide IT support to enable their implementation.

Objectives

- Adopt industry standards for data exchange
- Promote reusable components through standard interfaces and modularity
- Promote efficient and effective data sharing to meet stakeholders needs
- Provide a beneficiary-centric focus
- Promote interoperability, integration and an open architecture
- Promote secure data exchange

[1] CMS's MITA 3.0 Framework

- Promote good practices (e.g.: The Capability Mature Model and data warehouse)

The CT Health and Human Services Enterprise Architecture Framework

The following are three architecture segments that when combined create the State HIT Coordinator Framework (Fig. 1).

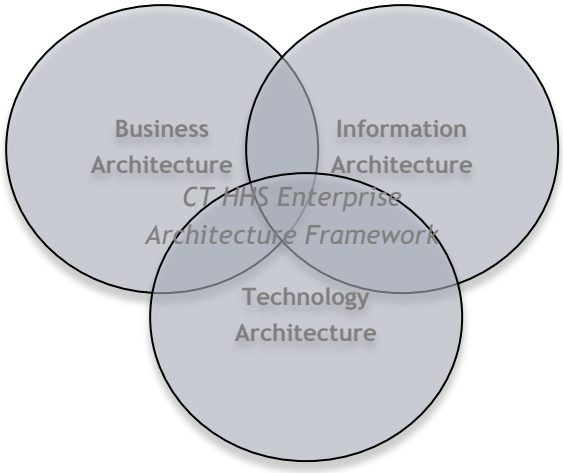


Figure 1

Business Architecture (BA)

Business architecture hosts a set of complexities that exist within the state government and are difficult to describe because of the numerous relationships and stakeholders involved. Major parts of Health and Human Services IT Business Architecture (HHSIB) and the CT HIT Coordinator Framework are business related and it is essential that these foundational components of the architecture framework have a clearly defined strategic intent.

Business architecture must start with an environmental context and provide the framework for improvements in the Health and Human Services enterprise operations. Improved outcomes for all stakeholders will come as a result of factoring in economic, legal, political, and citizen expectations.

Information Architecture (IA)

One of the key assets to the HHS enterprise is information. In order for HIT stakeholders to quickly and accurately transfer information, the data must first be organized into usable formats. Information architecture seeks to address the informational needs of the enterprise and align with the business processes of the information systems associated with these programs. Because the BA and IA together map enterprise data and business processes, this provides the basis for sharing information throughout the enterprise as well as organizational boundaries.

Technical Architecture (TA)

The technical architecture for the HHS enterprise will need to be flexible, reliable, scalable, and secure

system. By having increased flexibility it will allow technical architecture to conform to future requirements, like the increased eligibility and enrollment that will occur because of mandates set forth in the Affordable Care Act. Finding the right balance between technical agility and efficiency has always been challenging for states, but balancing these tools for success amongst stakeholders is imperative for success. The technical architecture framework is designed to assist state HIT Coordinator with a strategy and a roadmap for leveraging the latest advancements in technology from an enterprise perspective. States should consider the benefits of standards-based approach to building a HHS enterprise that facilitates the reuse of solutions and integrates Commercial Off-the-Shelf (COTS) products to reduce development and IT costs.

State HIT Coordinator Governance Structure

A governance structure supporting the State HIT Coordinator should include an Executive Steering Committee made up of Commissioners of the Health and Human Services Cabinet (DCF, DDS, DMHAS, DPH, DSS, DOC), the State's CIO, Director of IT Policy, Health Information Exchange CEO, and the Health Insurance Exchange CEO, chaired by the State HIT Coordinator (Fig. 2) This Executive Committee would have the responsibility of developing an enterprise HIT strategic plan that defines the scope of enterprise HIT Integration effort, oversee its implementation timeline and milestones, resolve funding issues and promote effective communication and collaboration among all stakeholders.

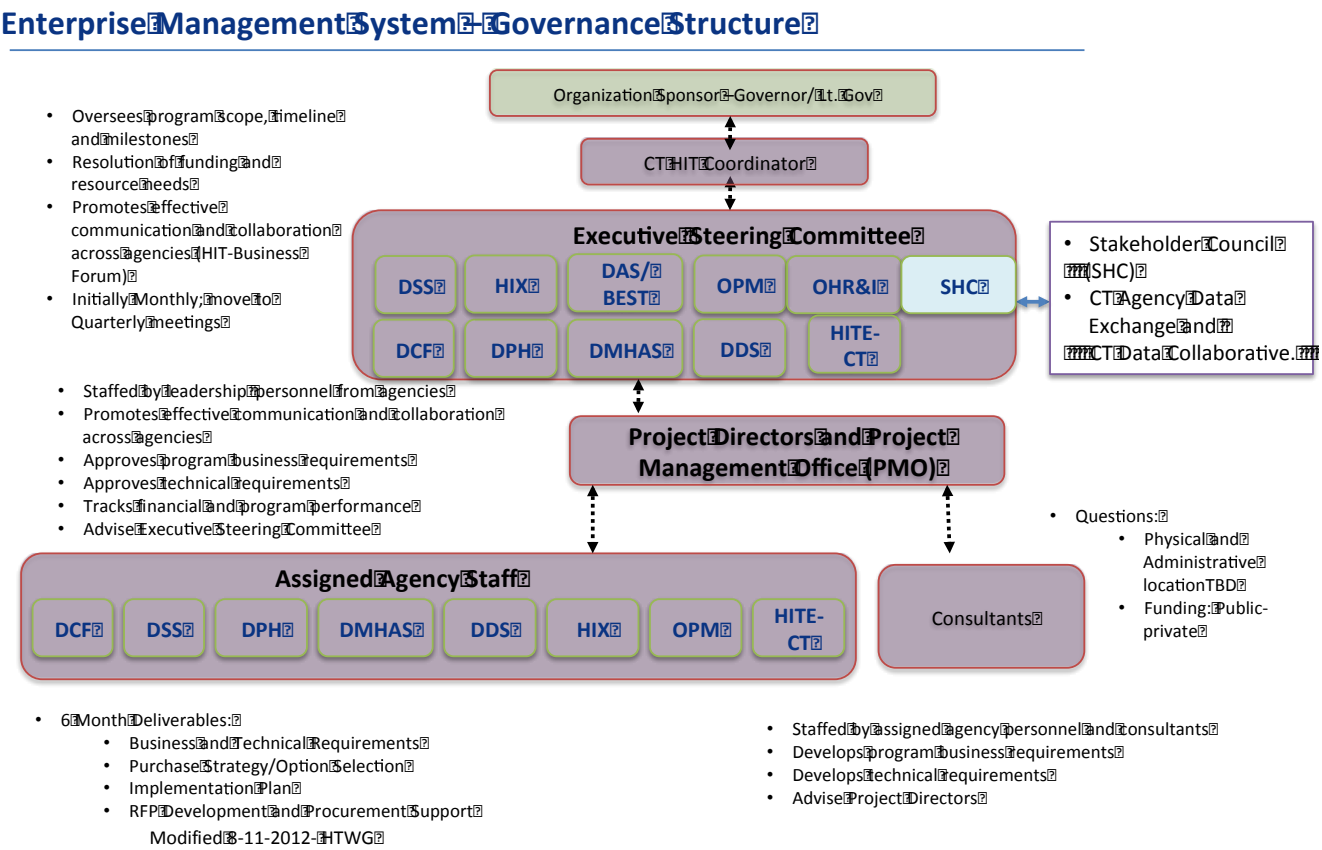


Figure 2

The State HIT Coordinator and the Executive Steering Committee should, in short order, ratify the Mission statement and develop a comprehensive work plan. Coordination efforts should include policy development and implementation. To maximize the benefits of federal matching dollars we envision a phased but aggressive HIT modernization plan for 2013-2018 responsive to short-term imperatives but keenly attentive to a long-term vision for an integrated, interoperable and equitable system. Short term enterprise priorities include the launching of the state's Health Insurance Exchange (HIX) by 2014, the deployment of a robust Health Information Exchange platform, upgrading the Medicaid eligibility system with a single health and human service eligibility entry point, development of a Master Patient Index, a Unique Provider Identifier, development and testing of inter-agency data sharing protocols, integration of programmatic rules and strengthening of privacy and security. Long-term priorities should include furthering system interoperability, elimination of disparities in access to information technology, lowering operational and maintenance costs, transition to a performance-based reimbursement system and overall enhancement of consumer service. Additional services should include shared analytics, business intelligence capabilities, case management, and population based public health information supported by shared service architecture. An interagency multi-sector work group, CONN-ADE as well as the Connecticut Data Collaborative should be contributing members of this integrative platform.

2. A State HIT-Business Forum

Developing a coherent State HIT-business strategy in which private and public sector investments are leveraged maximally to improve health outcomes for all CT residents, improve administrative efficiencies and lower health care costs requires an ongoing dialogue among business and HIT stakeholders. Alongside the creation of the CT Office of HIT Coordination the HTWG recommends the creation of a convening forum (HIT-Business Forum) that, on a regular basis will bring public and private sector HIT-Business stakeholders together to share ideas, exchange knowledge about emerging technologies to support the health reform goals and objectives and share best practices. The formulation of a Business, Technology and Information Architectures requires the ongoing Forum. A Stakeholder Council representing hospitals, ancillary support services (i.e.: community action agencies) researchers, and other health providers should be considered to provide a core participation group in the HIT Forum
Examples of how an HIT-Business Forum can promote efficiencies across the State health care system include leveraging Service Oriented Architecture and Cloud Computing systems. Other topics that merit dialogue and consensus building include seeking consensus on an information exchange consent policy and discussion about sustainability models for the HIE and Meaningful Use of electronic health records by Patient Centered Medical Home.

V. TRANSITION

The HTWG is willing to support a timely transition from its current role and *modus operandi* to a designated State Office of HIT Coordination. Given the urgency and the importance of the re-organization the transition should begin immediately and be completed by December of 2012.

Framework for Connecticut's Fiscal Future

Part 6: The Strategic Use of Technology by the State of Connecticut

A Report of the Connecticut Institute for the 21st Century

CT21
Connecticut Institute for the 21st Century

The Connecticut Institute for the 21st Century (the Institute) was formed in 1997 when public and private leaders in Connecticut came together to exchange ideas about economic growth in the state's regions. The group focused on opportunities for sustained economic growth and reducing barriers to that growth. The Institute, which is comprised of a statewide steering committee, is incorporated and has not-for-profit tax exempt status.

The Institute provides continuing opportunities for its members and other organizations to discuss and study important issues regarding the state of Connecticut's future.

- In 1999, the Institute released a significant study by the firm of Michael Gallis & Associates, Inc. titled *Connecticut: Strategic Economic Framework.* The study defines the real-life economic markets and movement of people, goods, and ideas in the region, the nation and the world.
- In 2003, the Institute turned to the issue of the link between Connecticut's future growth and responsible land use in order to draw connections between economic development, state and local planning, the trend toward sprawl, and preserving our quality of life.
- In 2007, the Institute issued its report, *Economic Vitality & Competitive Cities,* which identified key features of successful cities and strategies for making all Connecticut communities attractive and productive.

Framework for Connecticut's Fiscal Future

In 2010 the Institute began tracking the fiscal and economic crisis facing the state. With the publication of this report: *The Strategic Use of Technology by the State of Connecticut*, the series, entitled *Framework for Connecticut's Fiscal Future,* now includes six reports. The previously published reports are: *Assessment of Connecticut's Long Term Care System; Assessment of Connecticut's Correction, Parole and Probation Systems; Pensions and Other Post-Employment Benefits; Improving the Delivery of Public Services;* and *A Survival Plan for our Splintered Human Services Delivery System*. A summary of the results of the first five reports was also published in 2013. All reports are available at CT-21.org.

The Institute gratefully acknowledges the financial support of Blum Shapiro, First Niagara, and Yale New Haven Health System that has made this report possible.

Why is the strategic use of information technology (IT) critical for the future of the state of Connecticut?

As Connecticut and other states look for ways to provide cheaper, faster, better and more efficient services to its residents and businesses, IT is the critically important way to move ahead in an era of limited financial resources. The state's current efforts are a patchwork of works-in-progress at best; we are not keeping up with technology innovation or consumer expectations. This report demonstrates that the "status quo" is not enough and that the cost of not investing in a statewide strategic roadmap, good IT governance, and enabling architectures could be far more costly for the future of the state and its citizens.

Connecticut has been at times innovative, creative, and resilient in adopting sustainable and strategic technology. As relatively early adopters of technology, and given the rapid pace of technology advancement paired with fiscal constraints, Connecticut's legacy issues now need "next generation" solutions.

The purpose of this report is to provide policymakers, legislators, officials, and citizens with a framework to implement critical technology that will enhance the state's overall economic competitiveness through informed decision-making, increased transparency and managed investment. Previous Institute studies of services also demonstrated that leveraging technology-enabled infrastructure, information, and access are essential to improve outcomes and the effectiveness of state government overall and to meet policy goals in long-term care, corrections, and human services delivery.

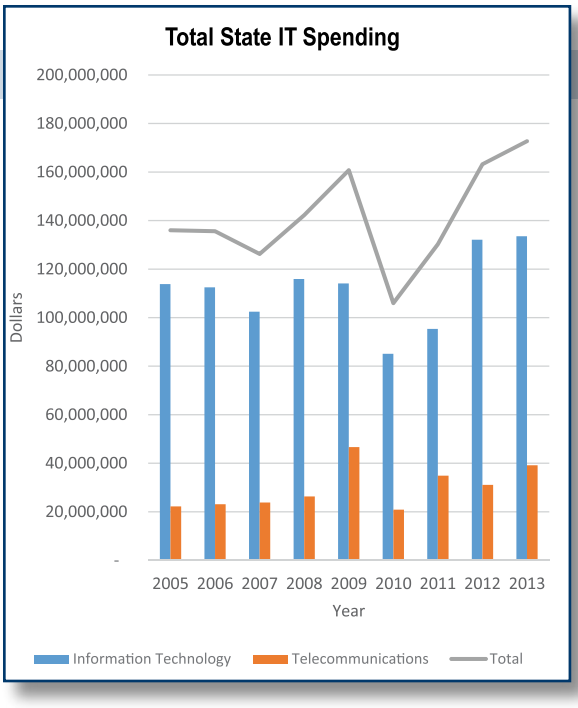
How Do We Stack Up?

Connecticut is in the Lower Middle of the Pack

The Digital States Survey, the longest–running examination of technology use in state government, ranks Connecticut in the lowest third among states in IT leadership, service delivery, citizen engagement, innovation and collaboration. Connecticut is on par with 11 other states; 35 states ranked better than Connecticut; and only four states ranked lower. Connecticut's technology grade is a "C."

Funding of IT Operations is Below Our Peers

Connecticut spends less than 1% of operating expenses on IT, while benchmarking results from The Gartner Group reveal that best practice enterprises in both the public and private sector spend an average of 3%.



Current Situation

The state's IT infrastructure consists of a wide array of systems, many of which are aging and no longer meet modern-day business needs. These vast decentralized systems are complex and fragmented and are very challenging to manage securely. These systems often cannot work and communicate effectively with each other. Historically, funding for IT projects and initiatives has been approached at the program or agency level, inhibiting the ability to promote collaboration between common business functions, which often span several agencies and/or programs.

5 Largest Application Uses

Business Category	#
Environmental	338
Education	103
Licensing, Permitting & Registration	53
Case Management	52
Customer Service	50

Aging and Customized Systems and Applications

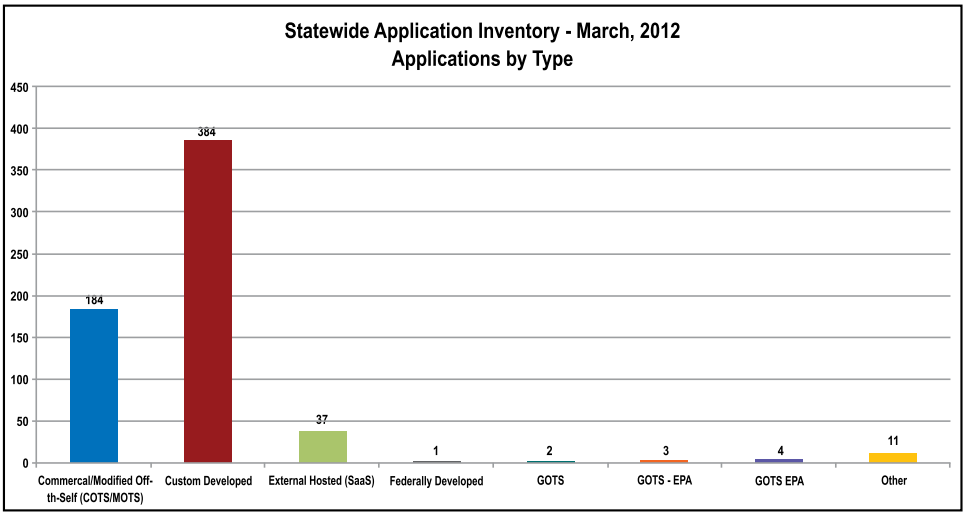
Of 904 applications reported in use by 34 state agencies in 2012, 66% were more than 10 years old and 73% were more than 7 years old. 42% of these applications were custom-developed. In the IT world, this is an aging portfolio.

Aging and customized applications are more difficult and costly to maintain. Upgrades are more costly, if not impossible. The risk of losing key institutional knowledge embedded in the users and developers is high.

Aging Portfolio

>7 Years Old	663	73%
>10 Years Old	593	66%

Customization



Connecticut's Strategic IT Plan

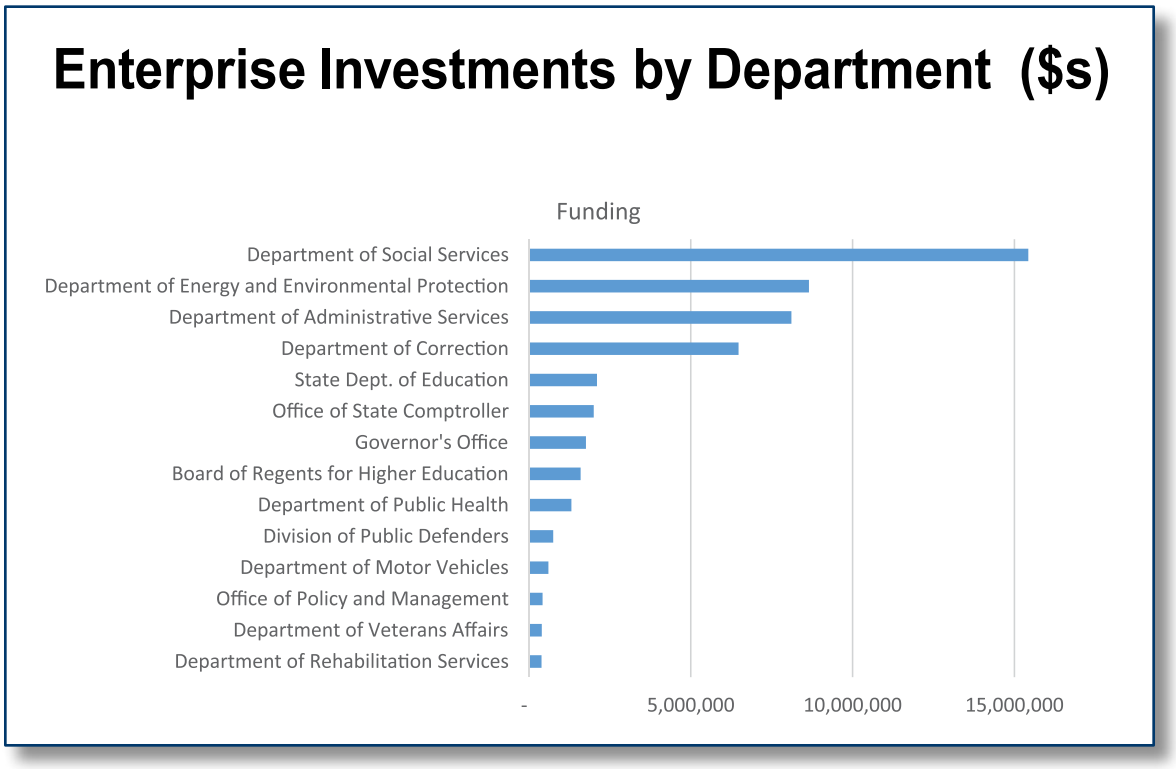
Connecticut General Statutes (CGS § 4d-7) instruct the Commissioner of the Department of Administrative Services (DAS) to develop, maintain and publish annually an Information and Telecommunications Systems Strategic Plan. The Commissioner of the DAS has delegated this responsibility to the State's Chief Information Officer (CIO). This plan is designed to:

- Provide a level of voice and data communications service among all state agencies that will ensure the effective and efficient completion of their respective functions;
- Provide all necessary telecommunication services between state agencies and the public;
- Provide, in the event of an emergency, immediate voice and data communications and critical application recovery capabilities which are necessary to support state agency functions;
- Provide necessary access to higher technology for state agencies.

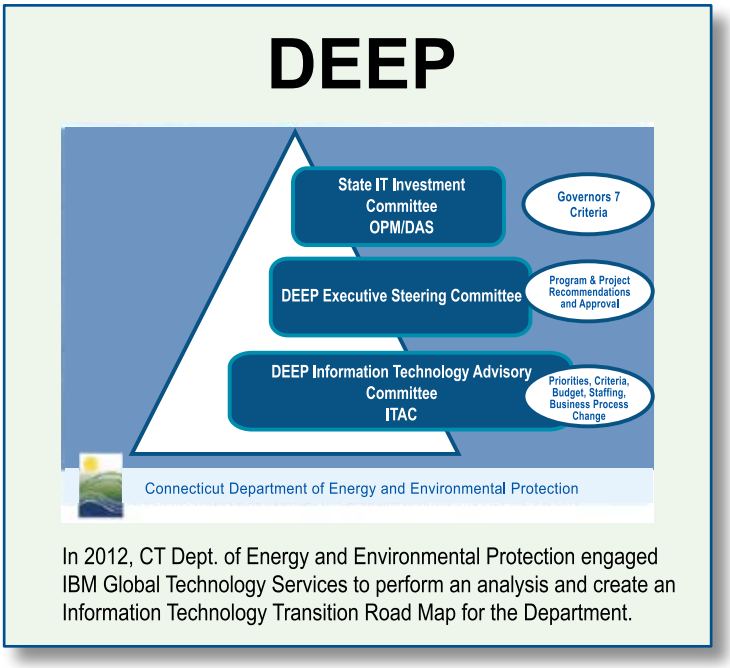
The Institute's observation is that Connecticut's Information Technology Strategic Plan is not grounded in any holistic statewide information technology strategy. An opening section is dedicated to explaining certain enterprise-level initiatives that are meant to apply to all departments, but the majority of the plan is focused on agency reports which describe the mission, technology strategy, achievements and spending of each individual state department.

Enterprise Efforts

- **Investment:** Since 2012, the $125 million Strategic Investment Fund has approved more than $74.2 million in spending.



- **LEAN Process Improvement:** The state is using a coordinated process to eliminate waste and improve the efficiency of its business processes, and is prioritizing investment where LEAN processes have been put in place to reduce waste and improve efficiency. The Department of Energy and Environmental Protection (DEEP) is a model where LEAN investments were the basis for a transitional roadmap, enterprise level planning, and effective governance.



In 2012, CT Dept. of Energy and Environmental Protection engaged IBM Global Technology Services to perform an analysis and create an Information Technology Transition Road Map for the Department.

- **Unified Communications:** A data-enabled voice network, with an estimated real savings of $11 million annually that will incorporate video conferencing, messaging and other interactive services.
- **Data Management:** Creation of a centralized data center in two vacant buildings in Groton.
- **e-Government:** The legislature has approved a "self-funded" model for the development of web portals, using access fees to fund and enhance e-government service delivery. Development will be carried out in partnership with NIC Inc., a national provider of government portals, online services, and secure payment solutions. The planned ct.gov portal will go live in fall 2014 and will focus on improving transparency and ease of doing business. Also coming online this fall will be other one-off web efforts including Department of Economic and Community Development (DECD) online resources to support economic development, universal electronic paystubs, DEEP's online permitting and underground storage tank application, and Department of Motor Vehicles (DMV) online appointment scheduling.
- **Broadband Networking:** Completion of an 8,800 mile fiber optic network that brings high-speed networks to public safety and educational institutions. Expansion over the next 24 months to include municipalities and regional councils of government.
- **Healthcare:** AccessHealthCT's technology-enabled human services delivery. Networking, telephone, security, platform development and database services were rolled out on time and on budget.
- **ConneCT:** Launched by the Department of Social Services (DSS) to streamline access to benefit status and reduce application backlogs by creating electronic case files.

IT Governance

While there is no "one size fits all" model for governance, Connecticut currently has a hybrid centralized/decentralized governance model. In this model, the state remains responsible for cross-agency systems delivery and policy, planning and oversight. Individual agencies, in coordination with the enterprise-wide leadership, follow specific mechanisms to ensure projects and investment match overall strategy. Connecticut's CIO position is split between two state agencies, with policy reporting to the Office of Policy and Management (OPM) and administrative responsibilities at the Department of Administrative Services (DAS).

IT Workforce

There is no source of data for the state IT workforce's salary, skill set, headcount, and tenure. Anecdotal evidence points to an aging workforce that does not possess current technology skills. The process to hire new employees is time-consuming and lengthy. Perhaps as a consequence, the state operates with a heavy dependence on consultants both to obtain needed skill sets and to acquire resources in a timely fashion. The workforce's union contract specifies 35-hour flexible workweeks and has detailed requirements for position and salary approvals.

FTE Support

	FTEs
Agency Staff	372.85
Consultants	142.95

IT Recommendations

Elevate the CIO position to report to the governor, providing responsibility and clear authority to lead all of the state's technology strategy across all agencies. Agency IT leaders and current staff should remain with the agencies but have dotted-line reporting to the state CIO.

The position should retain all of its current responsibilities within DAS and should also include: IT strategic plan creation; IT workforce strategy creation; IT project portfolio management; process, metrics, and performance tracking; investment, budget, and spending against strategy; enterprise architecture; and enterprise data management.

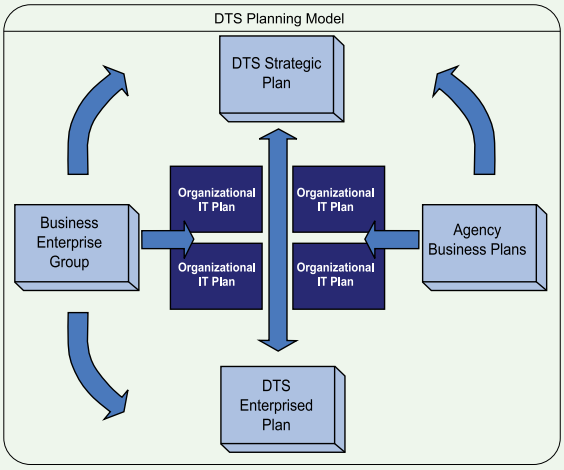
Consider forming a legislative committee, augmented with private sector expertise, to focus on information and related technologies.

This will help the state leverage industry expertise while being responsive to constituent needs in an ever-changing technology environment, and provide consistency across changes in government and leadership.

Develop an ambitious 5-year strategic plan for the state of Connecticut.

The plan must be accompanied by appropriate governance and resources and include operating principles, provide a baseline assessment of where we are today, define where we will be in five years, identify gaps, detail the plan to address the gaps, and establish an ongoing planning process.

Utah Dept. of Technology Services Strategic Framework



The Utah DTS Planning Model demonstrates the relationship and coordination between the Agency Business Plans, DTS Strategic Plan, Organizational IT Plans, and the DTS Enterprised Plan.

Implement an IT workforce management planning process and create a plan to address gaps.

This includes a skills inventory, skills assessment, retirement planning, skill needs, a staffing plan, and training needs.

Given the existing mismatch between hiring processes and needs, consider all forms of skills and partnerships to meet critical skills.

Best practices include leadership and mentor programs and virtual universities that offer refreshed and new skill sets to staff. Also, the state might consider a cooperative, flexible training system including the State University System to provide a potential hiring pool, and contracted short-term interim support for legacy or transitional systems.

Continue to centralize key enterprise systems and enabling processes.

Continue to make investments in centralized key enterprise systems and the processes that enable these systems, including telecom, networking, e-government, and data centers. Continue to adopt LEAN processes.

Create "Centers of Excellence" to be used by all departments to standardize and centralize project management, business analysis, systems analysis, systems architecture, data management, and procurement.

Implement innovative funding models for IT.

The state must follow the lead of the best-in-class and depart from fully relying on funding from legislated general fund appropriations.

Adopt a policy whereby IT initiatives funded from the IT Investment Fund are evaluated against alternative funding sources, and/or the opportunity for partnership/collaboration with public and private entities including other municipalities, states, academia and business.

Develop and implement a performance management system to measure the state's investments in IT as part of achieving the strategic agenda of the state.

Evaluate business effectiveness, efficiency of service delivery, cost containment, customer satisfaction, access/transparency/self-service, and agility, flexibility and ability to meet statutory/business/economic needs.

Implement a formal, transparent, and accountable portfolio management system.

Require that any request for funding include:

- An agency IT plan that supports the investment
- Process definition, such as LEAN, that defines the future processes that are to be enabled by the investment
- Project management plan with timeline, costs, and accountability
- Analysis of alternative funding options

Engage local government.

Much of public sector spending in Connecticut happens in local towns and schools. To ensure that investments are leveraged across Connecticut's unique form of local government and other local providers, the state needs to continue to build on efforts to provide public partners secure, fast, reliable networks, hosting, and other technology-related services at the right economies of scale.

Leverage the Connecticut Education Network (CEN), which will connect all municipalities in the next several years, and work to leverage cost saving local applications on this network.

Identify and assess demand for new services that provide significant efficiencies and savings. This may include VOIP, disaster recovery, video steaming and other services that are being piloted under grants provided for in the 2014 Legislative Session.

Engage municipalities in the strategic plan process with the state on common issues and work to assure that enterprise initiatives have local-facing projects.

Incentivize shared services through the network, including collaborative purchase of IT hardware and systems.

Next Steps

The state cannot delay in taking action. Connecticut must adopt holistic, collaborative and integrated approaches to IT in order to meet the growing demands for services, while constraining cost. Adaptive technology will enable the state and its partners to meet current challenges, to better engage with the public and to deliver services in accordance with state policy goals.

Connecticut does not have to recreate the proverbial technology wheel – there are many examples of states and organizations with best practices and proven methods leading the way in these areas. Connecticut is well-positioned to capitalize on its existing investments and significant progress implementing enterprise-wide solutions while integrating other innovations. This report identifies the critical next steps in a bold plan to use technology to provide more effective and efficient government service to the citizens of the state.

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2013 Update to Strategic and Operational Plan for Statewide HIE in Connecticut

February 28, 2013

Connecticut Department of Public Health

Table of Contents

2013 Update to Strategic and Operational Plan for Statewide HIE in CT

I. Introduction and Background

Purpose of Document

Collaboration between ONC, the Connecticut Department of Public Health, HITE-CT, and other partners in 2010 resulted in the initial State HIE Cooperative Agreement. The Strategic and Operational Plan (S&OP) was approved in 2010 and updated in 2012. This document is intended to inform ONC of Connecticut's plan to sustain Health Information Exchange (HIE) activities going forward—to leverage investments and related statewide initiatives by all partners and to address remaining gaps.

Changes in Health Information Exchange Market

The evolving HIE market at local, state, and national levels, requires us to rethink and make appropriate changes to our S&OP. Initially, many states focused heavily on the acquisition and deployment of a technology model, which has now been replaced by a model focused on initiating and sustaining a point-to-point exchange using Direct Messaging as a first step. Similar changes have played out at the local and state level.

The Health Information Technology Exchange of Connecticut (HITE-CT) is the state-designated authority to enable exchange in Connecticut. HITE-CT was established by legislative mandate effective January 1, 2011 to develop, implement, and monitor state-level Health Information Exchange in order to meet the state's strategic objectives of improved health care outcomes and efficiency through the secure exchange of clinical and administrative health data (Public Act 10-117). HITE-CT's S&OP initially proposed a Utility Model approach for HIE activities in Connecticut. Our HIE market has been slow to develop and has taken a different direction than was originally predicted. There has been a slow emergence of local HIEs. Currently, at least four hospital HIE initiatives are underway. They differ in their level of maturity varying from being in a planning stage to being partially operational, but none are exchanging information across systems. These exchanges are focused on addressing needs of either a local community or the specific organization. We have also talked to a number of hospital CIOs who are contemplating developing local exchanges.

With local HIEs under development, our Utility Model no longer meets the identified needs. As the focus has changed, HITE-CT will terminate its current vendor contract and deliver an approach to achieve widespread adoption of Direct messaging. We believe that HITE-CT's efforts are better directed to:

- Incentivize providers' participation in the HIE
- Establish a market for Direct services
- Develop pilot projects to support public health initiatives and care coordination activities with a focus on state agencies
- Provide a statewide provider directory
- Develop a plan for how additional services such as a query-based exchange will be delivered by assessing market readiness in CT.

II. Current HIE landscape in CT

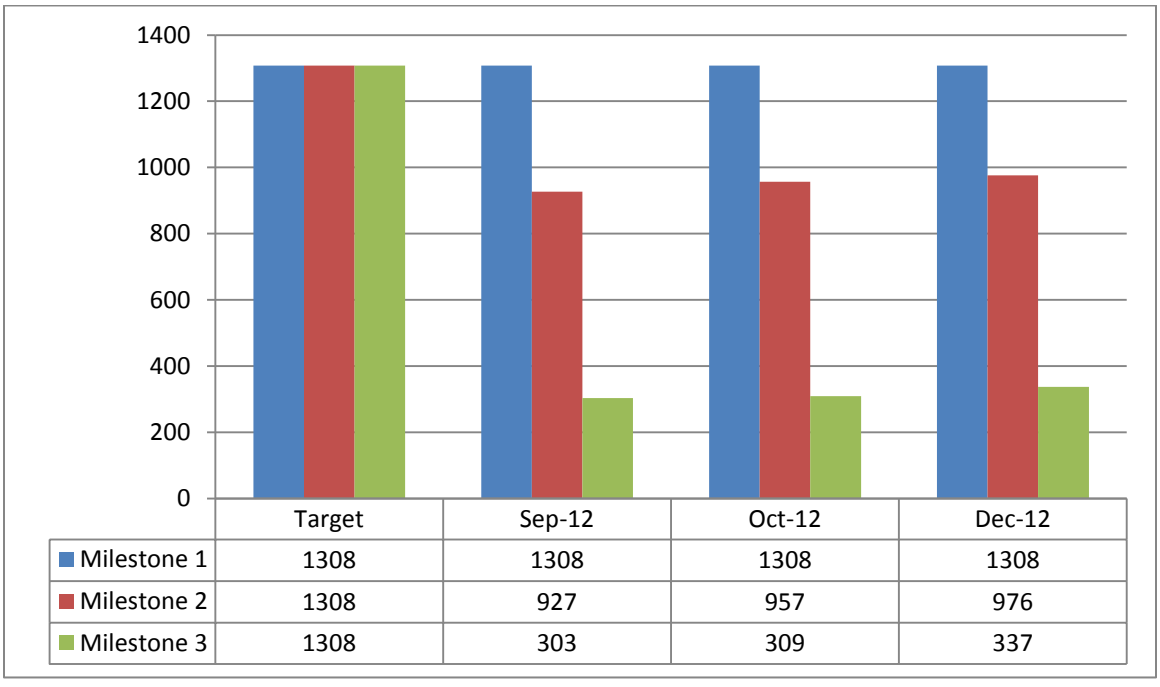
EHR Adoption Rates

Labs Enabled

The State of CT has 28 hospital labs and 7 commercial labs. Currently, lab results are reported through a variety of methods, such as paper, CD, etc. By utilizing the Laboratory Interoperability Cooperative (LIC) grant, DPH has been able to establish a connection through Surescripts for facilitating electronic reporting. As of 2/20/2013, DPH can accept HL7 messages from Surescripts. Hospitals still interested in achieving Electronic Laboratory Reporting (ELR) can participate in LIC Services and facilitate real-time electronic data exchange of reportable lab results with public health agencies. It is anticipated that as more and more hospitals and laboratories sign up with Surescripts, the number of entities reporting electronic results will increase. Currently, no hospital has contracted with LIC.

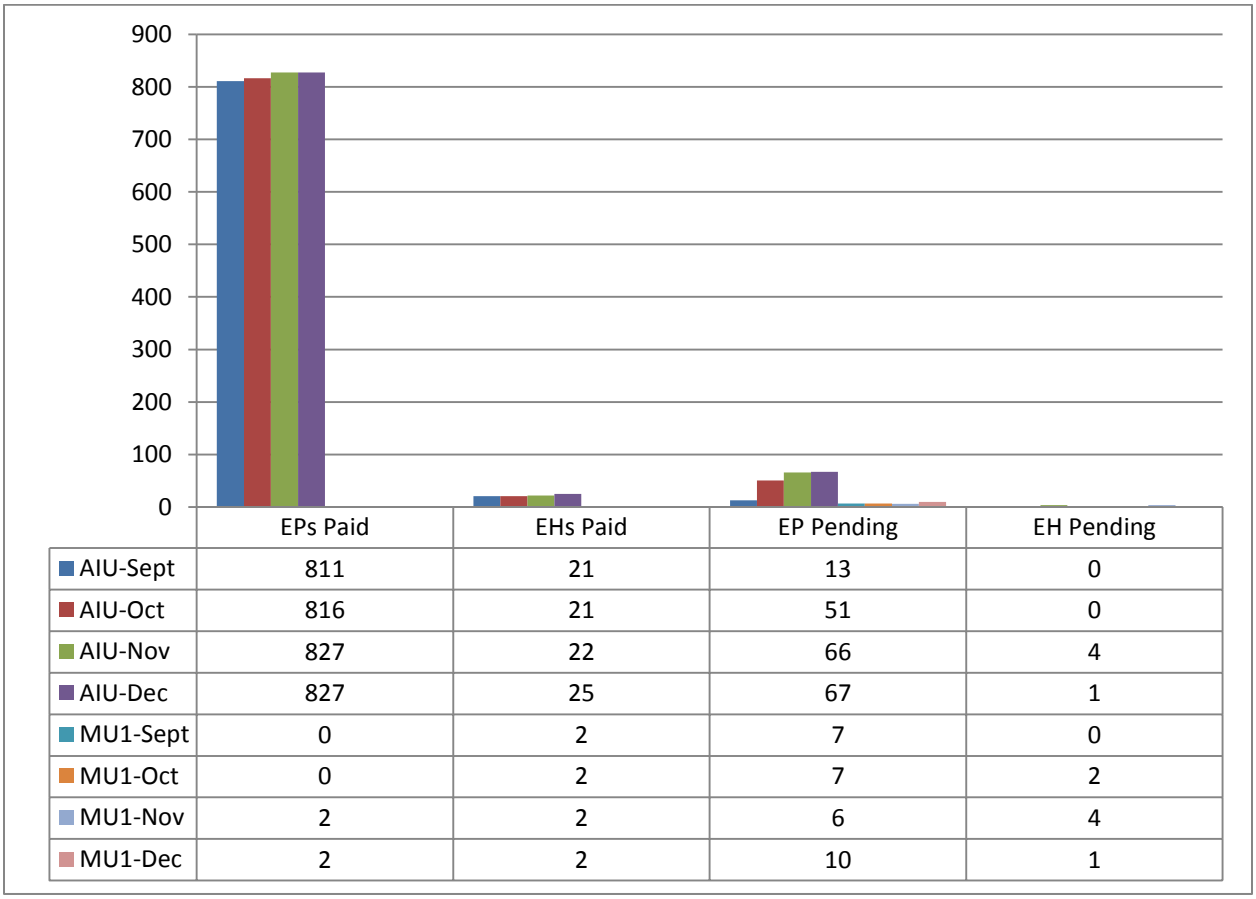
Connecticut's Process on EHR Incentives

Achievements of Regional Extension Center



	Target	Sep-12	Oct-12	Dec-12
Milestone 1	1308	1308	1308	1308
Milestone 2	1308	927	957	976
Milestone 3	1308	303	309	337

DSS payments to Eligible Hospitals and Eligible Providers



	EPs Paid	EHs Paid	EP Pending	EH Pending
AIU-Sept	811	21	13	0
AIU-Oct	816	21	51	0
AIU-Nov	827	22	66	4
AIU-Dec	827	25	67	1
MU1-Sept	0	2	7	0
MU1-Oct	0	2	7	2
MU1-Nov	2	2	6	4
MU1-Dec	2	2	10	1

Medicare and Medicaid Payments[1]

- As of December 2012, Medicare has paid out 1440 EPs and one hospital totaling $75,860,840 in payments.
- As of December 2012, Medicaid has paid out 927 EPs and 25 hospitals totaling $40,458,432 in payments.

[1] *Source: Interagency meetings and website:* http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Dec_PaymentsbyStatesbyProgram.pdf

Health Information Exchange Environmental Scan

This updated environmental scan is based on the family of surveys conducted to gather baseline data to evaluate the change in exchange activities as a result of establishing HITE-CT.[2]

Physician Survey

(n=900)

- 51% of the physicians practice in a single-specialty group practice.
- 46% of the physicians practice at one site.
- 54% have a lot of experience using computers.
- 75% of the physicians have good internet access via T-1, broadband cable, or broadband digital lines, though 18% stated that their organization needed additional high speed internet access.
- 62% practice in an office-based outpatient setting and 21% practice in a hospital setting.
- 48% practice in an urban setting.
- 82% of physicians stated that their CIS captured patient demographics.
- 59% of physicians stated that their CIS was capable of e-prescribing. Of those that had access to an e-prescribing system, 79% were sending prescriptions electronically.
- 46% of physicians stated that their CIS was capable of ordering labs.
- 70% of physicians stated that their CIS was capable of viewing labs.
- 38% of physicians stated that their CIS was capable of ordering radiology tests.
- 70% of physicians stated that their CIS was capable of viewing images.
- 48% of physicians stated that their CIS captured medication lists.
- 24% of physicians stated that their CIS was capable of sending them reminders for guideline based interventions and screening. Most physicians believe that EHRs have had a positive impact on their practice in the areas of quality of decision-making (51%); communication with other providers (71%); filling prescriptions (65%); timely access to medical records (89%); and avoiding medication errors
- (61%). They believe that EHRs have had no impact on communication with patients (49%); delivery of preventive care (49%); and delivery of chronic care (46%).

[2] http://cicats.uconn.edu/pdf/bmi/HITECT-Report.pdf

Pharmacy Survey

(n=60)

- 58.3% of the pharmacies were independent.
- 42% of the pharmacies estimated between 16-50% adoption of e-prescribing in the area.
- 57% of the pharmacies were dispensing between 101-300 prescriptions daily.
- 78% of the pharmacies were enabled for e-prescribing.
- 72% were using standards outlined in the HHS Final Rule.
- 33% were using the NCPDP codes for communication, while 48% did not know what terminology was being used.
- 90% of the pharmacies were using electronic transactions for filling new prescriptions; 80% for filling renewed prescriptions; and 50% for notifying the prescriber.
- 93% of the pharmacies receive prescriptions via fax; 90% of the pharmacies receive prescriptions over the phone; 80% receive requests on paper; and 72% of the requests used the e-prescription system.
- 57% were paying a transaction fees to receive e-prescriptions.
- 68% were not familiar with the Connecticut Health Information Exchange. Most pharmacies believed that e-prescribing had a positive impact on efficiency (82%), patient safety (80%), patient-centered care (63%), effectiveness (75%), equal access to care (53%), and timeliness of care delivery (70%).

Laboratory Survey

(n=66)

- 14 of the 24 hospitals' laboratories completed our survey.
- Fourteen hospital laboratories use CPT codes, one uses LOINC®, and one mentioned other terminology used to code and communicate data. Fourteen hospitals responded that their laboratory systems were HL7-compatible, but none of them could identify the version of HL7 in use.
- When asked about with whom they exchanged data, these hospitals mentioned physicians (14), independent clinical pharmacies (12), physician office laboratories (5), hospital laboratories (4), blood bank laboratories (3), public health laboratories (3), insurance companies (3), no one (2), patients (2), Personal Health Record (2), and electronic health exchange (1).

Emergence of Local Exchanges

The emergence of local HIEs, primarily sponsored by the hospital community is a significant factor that was not predominate when the original plan was developed. Currently, at least four hospital HIE initiatives are underway. Their maturity varies from being in a planning stage to being partially operational. These exchanges will address either a local community or the specific needs of a particular organization. We have also talked to a number of hospital CIOs who are contemplating developing local exchanges. These exchanges will focus on addressing either a local community or the specific needs of a particular organization.

Local exchange efforts include the following. We are in the process of gathering more information as to the planned capabilities and the current state of readiness:

Western Connecticut Health Network: There is an operational HIE in the Danbury area sponsored by Danbury Hospital. This HIE addresses providers in the Danbury area. Danbury Hospital is part of the Western Connecticut Health Network, which services western Connecticut and adjacent areas of New York. It is comprised of Danbury Hospital, New Milford Hospital, and their affiliated organizations. It is anticipated that additional local hospitals may join this network in the future. The HIE, originally started by Danbury Hospital, services local providers that practice at the hospital. We are aware that they may be seeking to change their current HIE vendor, but this has not been substantiated. This exchange has been in various stages of operation for at least 3 years.

Hartford Healthcare: Hartford Healthcare is the second-largest integrated development network in the state. It provides the following services:

- **Acute Care Services** - Hartford Hospital, The Hospital of Central Connecticut, Midstate Medical Center, Windham Hospital)
- **Behavioral Health Services** - The Institute of Living, Natchaug Hospital, Rushford Mental Health Providers
- **Diagnostic Services** - Clinical Laboratory Partners, Open MRI of Southington
- **Home Care** - VNA Healthcare
- **Physical and Occupational Therapy** - Hartford Healthcare Rehabilitation Network
- **Physician Practices** – Occupational Health Network, Hartford HealthCare Medical Group
- **Senior Health** – Central Connecticut Senior Health Services, Connecticut Center for Healthy Aging

This organization encompasses a large area of the central and eastern part of the state. They have had a limited HIE in place for approximately one year. Data in the form of clinical documents is exchanged between Hartford Hospital and Hartford Medical Group. The exchange is integrated into each organization's EHR.

Yale New Haven Health System – This system is made up of Yale New Haven Hospital, Bridgeport Hospital, Greenwich Hospital, and Northeast Medical Group. Together they provide a comprehensive integrated delivery network in the southwest region of Connecticut. They have recently started to deploy the Epic system throughout the network. They also are aware that Epic, alone, will not be sufficient to connect all providers in their region.

Eastern Connecticut Health Network (ECHN) - ECHN services 19 towns in eastern Connecticut. Its service area does overlap with Hartford Healthcare. It is made of Manchester Memorial Hospital, Rockville General Hospital, CorpCare Occupational Health, Evergreen Endoscopy Center, Glastonbury Wellness Center, John A. DeQuattro Cancer Center, Urgent Care of South Windsor, Walden Behavioral Care, and Woodlake at Tolland Nursing and Rehabilitation Center. They have been pursuing HIE

capabilities for at least two years. Their vendor is MobileMD. Currently we do not know how much of the ECHN is using MobileMD.

Other Related Activities at the State Level

SIM Grant - Earlier this year CMS awarded a grant to the State of Connecticut to develop a new model to align the state to a new innovative delivery system, payment reforms, and a robust workforce development program to optimize health.

- The state has convened a multi-stakeholder group that includes public and private, payers, providers and patients to improve and make care health care more efficient.
- HITE-CT is an important partner in this effort as one of the levers of generating efficiency in the delivery of health care.

Integrated Eligibility - In early 2012, the state convened a multi-agency working group under the leadership of the State CIO to tackle the difficult issue of information sharing across state agency lines to better facilitate outcomes. This group, representing DHMAS, DPH, DSS, DDS, DCF and Information Technology has launched a systems and data sharing effort around eligibility rules and sharing of specific case data across pre-defined lines. This exchange of information across agencies is being launched initially between the Health Insurance Exchange and DSS, with Phase III efforts bringing additional agencies into the integrated effort.

Health Technology Work Group - In December 2012, the Health Technology Work Group, which is a sub-committee of the Governor's Health Care Cabinet, issued a paper with specific recommendations around leadership and coordination in the area of health and human services technology. The Work Group paper called for the establishment of a highly placed resource within the government with broad coordination efforts across public and private health technology. The primary role of this resource is to review business and technology plans, to establish steps towards a future state that limits redundancies and maximizes reuse of data and technology assets.

Enterprise IT Investment Fund - In July 2012, the established an Enterprise IT investment fund that recognized the need to make technology investments in a centralized and coordinated manner to obtain the efficiency outcomes needed by the state. This group allocates funding for initiatives that bring efficiency in service areas and also creates capabilities that can be used across multiple agencies. The exchange of health data is a critical, enterprise-wide capability.

PIN PRIORITIES: Quarterly Progress Report (OCT 01 thru DEC 31, 2012)

PIN Area	Target Value Type	Target Value Description	Data Source	Denominator	Current Numerator	Current Value	Target Numerator	Target Value
eRx	%	% of pharmacies actively prescribing	Surescripts	713	642	90.0%	674	95%
eRx	%	% of pharmacies actively prescribing within the SS network	Surescripts	651	640	98.3%	-	-
Care Summary	%	% of physicians sending CCRs/CCDs to coordinate care	Physician survey	898	114	12.7%	224	25%
Care summary	%	% of physicians receiving CCRs/CCDs to coordinate care	Physician survey	898	69	7.7%	225	25%
Care Summary	number	Exchange 80 messages using Direct	HITE-CT	1	0	0	80	
Lab Exchange	number	Have 4 meetings with Quest to explore the feasibility and costs associated with Quest becoming part of the Direct fabric	HITE-CT	4	0	0	4	4
Lab Exchange	number	Meet with DPH at least twice a month to develop a detailed project plan for receiving	HITE-CT	6	0	0	6	6

PIN Area	Target Value Type	Target Value Description	Data Source	Denominator	Current Numerator	Current Value	Target Numerator	Target Value
		lab information						
Lab Exchange	number	Number of labs in the testing stage for reporting via 2.5.1 messaging standard	DPH	36 (7 commercial labs + 28 hospital labs+1 state Lab)	3	8.3%	4	11.4%
Lab Exchange	number	Number of labs in production for reporting via 2.5.1 messaging standard	DPH	36	1	2.7	4	11.4%
Other		% of consumers familiar with EMRs	Consumer Survey	213	181	85.0%		
Other		% of consumers familiar with PHRs	Consumer Survey	213	107	50.2%		
Other		% of consumers familiar with CT HIE	Consumer Survey	213	28	13.1%		
Other		% of consumers interested in EMRs	Consumer Survey	213	110	51.6%		
Other		% of consumers interested in PHRs	Consumer Survey	213	116	54.5%		
Other		% of consumers who support National HIE	Consumer Survey	213	136	63.8%		

Public Health Reporting

Immunization

ARRA funded CT Immunization Registry and Tracking System (CIRTS) web application went into production on April 26, 2012. This system is a statewide population based childhood immunization registry. The legislation for the registry currently limits to age six. The next release in April 2013 will support electronic exchange between DPH and EMR systems that can utilize the PHINMS transport. The number of pediatric and family practice reporting immunization events for children under 3 years via paper is over 450 practices monthly.

There are currently 10 provider sites using this application.

We are currently working with two EHR vendors – Allscripts and Cerner Ambulatory. Both vendors have set up PHIN MS as the transport and will be sending data via their hub to CDC RnR to CT PHIN MS. Both Cerner and Allscripts will be sending real-time data, but Cerner will also have clients that will report as batch. CIRTS is setting up for both methods and both vendors are sending HL7 version 2.5.1 format. CIRTS 2.0 release supports sending data to the registry and returning only HL7 ACK/NAK. All of this work is being funded by CDC IIS--EHR Interoperability Grant as well as technical assistance requests to CDC to provide additional resources.

Laboratory

Laboratory test reporting by laboratories via HL7 version 2.5.1 format is currently under development and testing for three laboratories with the LIMS vendors. The two vendors are Cerner as hospital based LIMS with two locations, Quest as a commercial base LIMS and one RHIO is Western CT Health Network as regional exchange. Cerner is the LIMS system in four additional hospital laboratories once in production. Quest would be expanding to provide additional exchange to their larger out of state testing facilities once in production. Western CT Health Network would be expanded to 1 -2 hospital base laboratories once in production. Currently the number of labs reporting test results for public health reporting in CT is 36. All the laboratories in progress are using PHIN MS as the transport mechanism. All of this work is being funded by CDC ELC Interoperability Grant as well as technical assistance requests to CDC to provide additional resources for LOINC mapping for the state laboratory's LIMS, CDC PHIN MS PHIN MS Support and APHL for the state laboratory.

Department of Public Health (DPH) currently has mandated reporting of 77 diseases both to state and local health departments. The majority of the reporting to public health is paper reporting via fax or regular mail. The data reported ultimately ends in seven or more systems each with business areas own workflow within DPH. All of these interfaces need to be developed to send the appropriate data into each system.

Syndromic Surveillance

In Connecticut, syndromic surveillance systems provided critical information to monitor infectious diseases events and public health emergencies. The Connecticut Hospital Emergency Department Syndromic Surveillance System (HEDSS) was implemented in 2004. The current system is voluntary with 20 of 32 emergency departments and 1 urgent care clinic sending electronic emergency department (ED) patient abstract data to Connecticut Department of Public Health (DPH) on a daily basis. Free-text chief complaints are characterized into syndromes of public health importance to provide near real-time estimates of disease activity, situational awareness, and monitoring of public health emergencies, including pandemic influenza. In addition, all 32 acute care hospitals participate in the Hospital Admissions Syndromic Surveillance System (HASS), a labor-intensive system that was established in 2001 and also allows monitoring of hospital admissions by syndrome category.

DPH is in the process of transitioning to a new syndromic surveillance system which will incorporate the HASS and HEDSS into a single automated system, accept data from all 32 acute care hospitals, and meet Meaningful Use standards for syndromic surveillance as outlined in the PHIN Syndromic Surveillance Messaging Guide. Initially Connecticut had hoped to implement BioSense 2.0 to accomplish these goals, however, is unable to do so due to legal concerns related to the data use agreement. At this time, DPH is evaluating the costs and benefits of improving the existing HEDSS system compared to implementing a low-cost existing system (such as Essence) to meet Meaningful Use. Regardless of which method is chosen, we plan to start implementation and testing this year and begin accepting hospital data during 2014. Future funding will depend on support from Connecticut Cooperative agreements including PHEP and ELC grants.

Other – Cancer Registry

Cancer registry business unit has begun discussions with DPH IT on identifying the business needs, business workflow and what options will be available to begin to move to Stage 2 Meaningful Use. The projected timelines, vendor involvement and identification of external partners and their capability assessment is being developed by the business area.

Other Related Infrastructure Projects

Capability	Status	# of Users
Secure messaging	Every hospital has secure messaging for internal use that is not Direct. HITE-CT is proposing to offer Direct through a marketplace.	Unknown
Provider Directory	Proposed and partial funding requested from CMS through the IAPD requesting 90/10 match	N/A
Statewide MPI	Long-term goal	N/A
All-Payer Claims Database (APCD) and / or other centralized repositories	CT passed legislation in 2012 to start a statewide APCD	Reporting not yet started
Health Insurance Exchange	Open enrollment to begin October 1, 2014	N/A

HITE-CT has initiated discussions with many stakeholders in the state to determine current interest in cross organization HIE. The results are as follows:

Stakeholder	Engagement	Interest
Hospitals	Have interacted with all hospital CIOs through CHA	Low
Hospitals	Beginning interaction with hospital CEO's	Too early to determine
Ambulatory providers	Met with MPS - 1 of the ACOs established in CT	Low
Payers	Preliminary discussions with Cigna and the state	Not explored sufficiently
Behavioral Health	3 meetings with Qualifacts User Group; 1 meeting with Wheeler Clinic, 1 meeting with Community Health Resources	High
Long-term Care	5 discussions with Genesis	High

III. Gap Analysis

From the data above the following conclusions can be drawn. eRx capabilities are fairly well deployed but provider uptake for using ePrescribe could be improved. The vast majority of pharmacies throughout the state are capable of receiving medication orders electronically. From our recent physician survey, 61% of providers have the ability through their EHR to order medications; however, only 42% use it almost all the time. Given the benefits of patient safety and convenience, this is an area that needs to be addressed.

- From our recent physician survey 45% of physicians have the ability to order labs, and 70% can view lab results. However, only 30% order labs and 46% report viewing of lab results most of the time.
- DPH has provided lab-reporting capabilities through Surescripts. Currently this mechanism is not widely used. The provider community has not taken advantage of this or is not yet aware of this capability. As the provider community has diverse technical capabilities, there must be multiple options available to send public health data to DPH. This includes attestation for immunization reporting.
- Attestation for Phase I Meaningful Use immunization reporting is not yet available.
- We have very low numbers of providers exchanging clinical documents electronically. From the most recent survey results, only 13% say they send documents to coordinate care and only 8% say they receive documents.
- Due to major vendor challenges, HITE-CT has been unable to develop and operate an operational HIE. This adversely affects the electronic exchange of clinical documents. This issue is of major concern and is the number one priority. Without a basic HIE network capable of secure point-to-point exchange, it is impossible to address many of the challenges above. These challenges would include alternate methods to send public health data to DPH and better coordinate patient transitions of care among others.
- Connecticut has two operational hospital-based HIEs and two in the planning stage. We are uncertain of the number of providers that will be served by these exchanges. This one-off approach can impact communication across unaffiliated entities. This, again, could be addressed through basic point-to-point HIE services being made available through one entity.

IV. Path Forward to Address Gaps and Assure Statewide Access to HIE

Collaboration Among Partners

Connecticut Department of Public Health

Commissioner Mullen maintains her commitment to the Cooperative Agreement and to the success of the Health Information Technology Exchange of Connecticut. She also supports Dr. Tikoo's role as the State's HIT Coordinator.

The CT Department of Public Health was designated by the Governor's office to apply for the ONC's Health Information Exchange State Cooperative Agreement in 2009. In the past three years, there has been a change in leadership at both the Executive and Department level.

In 2012, Vanessa Kapral was named the Principal Investigator for Connecticut's Cooperative Agreement. With her leadership, the Department of Public Health is realigning its resources to support meeting the public health Meaningful Use requirements. Ms. Kapral has engaged a variety of programs including, but not limited to, Immunizations, Surveillance, and Infectious Diseases with the aim of building capacity, developing a plan consistent in meeting grant requirements, ensuring implementation, and leveraging and maximizing funds to support meeting Meaningful Use requirements.

HIT Coordinator

With these changes, Dr. Minakshi Tikoo was named the State Health IT (HIT) Coordinator. Dr. Tikoo serves as a leader in developing and advocating for policies that support the goals of the statewide HIE. She is responsible for the coordination and working in close collaboration with ONC, the Connecticut Department of Public Health – Connecticut's State Designated Entity, the Connecticut Department of Social Services - State's Medicaid Director, eHealth Connecticut – the Regional Extension Center, HITE-CT, other health leaders, and stakeholders in the government and private health care sectors, as well as other states' HIT Coordinators. Dr. Tikoo is ensuring state agencies and their partners in the statewide HIE initiative work cooperatively with their respective federal partners and other stakeholders to facilitate statewide HIE and to help move providers to meet Meaningful Use.

The State HIT Coordinator resides at the University of Connecticut and is designated by the Commissioner of the Department of Public Health with the Lieutenant Governor's approval. In fulfilling this role as the State HIT Coordinator, Dr. Tikoo is driving the coordination and integration of the HIT/HE related projects funded under ARRA. In her role, she does, but is not limited to, the following:

1. Represents the state at HIT-related functions;
2. Supports planning of HIE services within Connecticut;
3. Coordinates with Medicaid, Public Health and other HIE activities in the state to enable and ensure an integrated, unified approach to HIE, the avoidance of duplication of efforts, and the monitoring of provider participation in HIE as required by the Meaningful Use requirements.
4. Works to leverage and maximize state resources;
5. Fosters cross-program coordination with other ARRA funded and HHS funded programs;
6. Ensures the annual report to ONC addresses statewide HIE alignment with other federal programs;
7. Identifies and facilitates potential interstate partnerships pertaining to HIT/HIE.

The HITE Coordinator has instituted interagency meetings with representatives from DSS, DPH, REC, Capital Community College, and HITE-CT to share ongoing HIT work and explore additional ways to collaborate within the group and with stakeholders.

Medicaid

The state Medicaid Program is part of Connecticut's Department of Social Services (DSS). DSS has and continues to be a principal participant in the state's eHealth program and initiatives. Past commitment to advancing HIT within Connecticut included the Medicaid Transformation Grant in 2007 to implement an e-Prescribing tool to allow Medicaid providers online access to particular patient information (i.e., patient eligibility, preferred drug lists, and medication history) to improve the quality of care, safety, and efficiency.

Currently, DSS has submitted the state Medicaid HIT Plan (SMHP)/ Implementation Advanced Planning Document (IAPD) that will accelerate the development of Medicaid's capacity to facilitate care coordination, improve quality and efficiency, and will be consistent with the broader statewide vision for Health Information Exchange. DSS is working collaboratively with HITE-CT and DPH to produce an implementation strategy for the Medicaid Incentive Payments that leverages existing expertise and ensures the alignment of architecture between agencies.

Multiple coordination activities are occurring with the DSS Medicaid program to develop a coordinated HIT/HE strategy that promotes the use of EHR technology and exchange of health information to help improve the health of individuals and communities. This coordinated strategy is also reflected in the state Medicaid Plan. Specific coordination activities include:

1. Medicaid Director participation on the HITE-CT Board
2. Medicaid staff participation on the HITE-CT Board Committees
3. Project Management Coordination
4. HITECH program alignment, collaboration, and coordination between DSS, DPH, REC, HITE-CT and HIT Coordinator.

Health Information Technology Exchange of Connecticut (HITE-CT)

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 20-member Board has established a monthly meeting schedule in which the Lieutenant Governor, a representative of the Office of Policy and Management, and the Commissioners of Public Health, Social Services, Consumer Protection, and the State's Chief Information Technology Officer serve as members.

DPH and DSS are collaboratively working with HITE-CT, with ONC guidance, to develop a strategy to support a statewide exchange. Both DPH and DSS meet separately with HITE-CT staff on a weekly basis. The HIT Coordinator leads a biweekly interagency meeting with the ARRA grantees to enable and ensure an integrated unified approach to HIE development. Additionally, the Commissioners of DSS and DPH are represented on the HITE-CT Board.

The Department of Public Health has an executed contract with HITE-CT in which HITE-CT would do the following:

1. Determine an effective strategy for achieving and operationalizing a statewide health information exchange;
2. Build an organization and administer the agency's programs and activities in accordance with policies and objectives established;
3. 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; and,
4. Develop appropriate protocols for health information exchange.

5. Develop electronic data standards to facilitate the development of a statewide integrated electronic health information system for health care providers and institutions.

The strategies to achieve the aforementioned goals are materially different than as described in the original Strategic and Operational Plan submitted in 2010. As the focus has changed, HITE-CT will terminate its current vendor contract and deliver an approach to achieve widespread adoption of Direct messaging.

eHealthConnecticut – Regional Extension Center

This organization provides services to assist providers in adopting Meaningful Use technology. These include supporting a number of Direct assistance contractors, and providing educational services and provider outreach. They are the customer-facing organization and could provide additional value-added services for various partners.

Other Stakeholders

There are numerous other partners with skills that could be leveraged to provide a more coordinated effort to address HIE issues within the state and beyond. We have had numerous conversations with the CIO group at the Connecticut Hospital Association (CHA). These have certainly provided insight into the technical needs of hospitals with respect to HIEs. CHA also has numerous other forums, such as a CEO forum, Health Information Management Forum, Chief Medical Officer Forum, etc. Capital Community College provides training programs in health care technology. This is important in providing a well skilled labor force to address health information technology needs. The University of Connecticut School of Pharmacy has been supportive of HIE from a research perspective. eRx is a critical concern for HIE adoption and the School of Pharmacy may offer to partner in research efforts concerning eRx. Connecticut has a developing Health Insurance Exchange that will be providing services starting October 1, 2013. We have already met with them on two occasions to discuss mutual concerns.

We have had and continue to peruse possible collaborations with the Rhode Island Quality Institute (RIQI) and HealthInfoNet, Maine's statewide health information exchange. RIQI has a functional query-based exchange, as well as a Direct Marketplace. HealthInfoNet provides similar services. Much can be learned from both these organizations as to how they have spearheaded HIE efforts in their respective states and how they approach issues from a collaborative perspective.

Strategies to Address HIE Gaps

The following tables summarize our approach to meeting identified PIN gaps. Detailed information on some of the individual tactics follows.

PIN Priority: Secure Exchange of Care Summaries

From our most recent physician survey, we found that 12% of physicians can generate a CCD document and only 7% can receive one. These numbers are focused on providers who currently have EHRs. We must also address those providers without EHRs. Creating an environment for the secure exchange of clinical documents is a high priority target. Possible factors effecting low numbers:

- Physician is not adequately trained as to how to receive or send a clinical document
- EHR is not capable of producing or receiving clinical documents

- **The provider has no trading partners who are capable of document exchange.** This is true for providers with EHRs as well as those without

Gap	Strategy to Address	Tactics	Responsible Party	Start and End Date	Targets	Projects Cost
Lack of a widely deployed mechanism for providers to easily exchange clinical data across organizational boundaries.	Lack of HIE services that span organizational boundaries.	Provide a Direct Marketplace in Connecticut through alignment with the Rhode Island Quality Institute Direct Marketplace	HITE-CT – Coordinate RIQI agreement	3/13 – 4/13	30 Days – Signed Agreement	$7K
		Direct Voucher Program to address needs for HIE services within and between organizations.	-HITE-CT – Creation and deployment of program -REC – Marketing and provider outreach	4/13 – 2/14	30 Days – Vouchers for phase I available 60 Days – Measure uptake and access 90 Days – Measure uptake and access 120 Days – Measure uptake and access 150 Days – Measure uptake and access Vouchers for phase II available 180 Days – Measure uptake and access 210 Days – Measure uptake and access 240 Days – Measure uptake and access	ONC - $215K

		In conjunction with DSS implement a care coordination project that utilizes real-time ADT data to track high utilizer Medicaid patients	-HIT Coordinator – Manage the project DSS – Fund and initiate the project HITE-CT – provide technology assistance and infrastructure where required.	Timeframe not yet available	120 Days – Early adapter identified, RFP published 150 Days – Vendor selected 180 Days – System live	ONC - $0
		Medicaid IAPD Grant project	HIT Coordinator – Manage project DSS – Fund project through IAPD grant proposal HITE-CT – Provide technology consulting and support services			ONC - $0
		Development of a statewide provider Directory. This tactic depends on Medicaid IAPD grant acceptance. Partial funding from that grant (the Medicaid patient portion) will be needed to implement the directory.	-HITE-CT – Develop and manage plan -DSS provide some initial financial support -Stakeholder – Provide data and financial support -REC – Assist in marketing	5/13-12/13 (May vary depending on IAPD funding)		ONC - $225K

PIN Priority: Lab Exchange

The issue of lab exchange can be viewed from multiple perspectives:

- Providers: From our recent physician survey 45% of physicians have the ability to order labs, and 70% can view lab results. However, only 30% order labs and 46% report viewing of lab results most of the time.
- Public Health reporting and Meaningful Use perspective: We don't currently have well utilized methods in place for lab data exchange. We expect that as the Surescripts option to be more widely used in the future

Gap	Strategy to Address	Tactics	Responsible Party	Start and End Date	Targets	Projects Cost
Methods for exchange of data with DPH for Public Health reporting and Meaningful Use attestation	A comprehensive strategy is needed which allows for multiple ways for providers to electronically exchange lab data with public health agencies. These methods must be well publicized to the provider community.	Utilize the Surescripts Network for ELR Develop a plan to inform providers of the various options for lab exchange Develop a pilot to show how Direct messaging can be used for the transport of immunization data to the immunization registry. This will provide another means for providers to send data to the registry. This same method could be used to transport labs also.	- DPH -HITE-CT – Contract partners, develop plan -DPH – Work with HITE-CT on project -Pilot participants – Provide immunization data via Direct message	5/13 – 1/14	60 Days – Participants Identified 120 Days – MOA signed 180 Days – Go Live	ONC - $40K
Providers use of lab ordering and viewing capabilities	It is difficult to ascertain why providers are not currently utilizing these features	Conduct a follow-up physician survey in July 2013 to assess change in practices use of CPOE since 2010.	- HIT Coordinator	7/13-9/13	60 Days – Conduct survey and publish results	$0

Lab Exchange—Electronic Lab Orders

a. The HORIZON Web Portal (HWP) is an extension of the Actuate Active Portal technology, providing full integration with HORIZON LIMS. The state has modified the Web Portal interface to correspond with the look and feel of the existing state web site. HWP also includes sample receipt acknowledgement and other pre-defined queries for a DPH customer to view sample status and other details about samples in process or those previously reported.

   HWP provides advanced "push" technologies, allowing DPH's customer to order bottles/shipments via the DPH web site, and to submit test requests that can populate Pre-Login (to generate a chain-of-custody form, for example) and facilitate sample accessioning once the samples physically arrive.

   In addition the HWP and HORIZON LIMS have a series of reports that allow for the tracking, monitoring and processing status of test orders, samples (once they have arrived), testing status and eventually results availability. Results are primarily delivered or available via two mechanisms or function within the HWP. Final reports or electronic versions of the actual paper copy are available in a Client's inbox. In addition, database queries can be developed to allow for specific results lookups for specific patients or all based on outcomes they may be interested in, such as significant results.

   Both the final report and the output of queries can be saved in several formats such as PDF, MS Word, or MS Excel, Rich Text Format.

   At this time the only functionality being delivered to the external client is the delivery of an electronic version of a samples final report. This final report can be saved in the above formats previously mentioned. At this time, there is no plan to roll out additional functionality such as electronic submission of orders of any kind

b. To meet the needs of CT PHL's New Born Screening (NBS) requirements, a custom interface was developed that will allow for HL7 message ordering. Consilience Software will use the MAVEN application to submit new orders and updates to existing patient data to CT PHL through an HL7 2.5.1 OML^O21 message. CT PHL will respond with an acknowledgment message (HL7 2.5.1 ORL^O22) and a confirmation of specimen received (HL7 2.5.1 ORU^R01). Finally, after the lab performs the requisite analysis, it will submit results back to MAVEN through HL7 2.5.1 ORU^R01 (RSSC CST020537).

   HORIZON LIMS then produces HL7 messages containing laboratory test results for unsolicited testing from the CTPHL and deliver the HL7 data to a messaging integration engine called Rhapsody®. Once in Rhapsody, CTPHL personnel can manage and supplement the data on a case-by-case basis. The data can then be delivered to a variety of surveillance programs based on specific requirements. Currently this data is only delivered directly to the Maven/NBS application that is used by 34 state-wide birthing centers.

   HORIZON LIMS produces an HL7 message based on the ORU^R01 message specifications for v2.6. An open HL7-MSG schedule is created for each specimen. The HL7 Daemon package executes on a

scheduled basis and processes all open HL7 schedules. If there is no HL7 data required, the HL7-MSG schedule is simply closed. Otherwise, the required data is queried and stored in the HORIZON HL7 Data Tables. The HL7 Daemon runs on scheduled intervals and fetches data from the HL7 Data Tables and creates the ORU^R01 v2.6 messages. The messages are transmitted to Rhapsody via a TCPIP port. Receipt acknowledgements are received from Rhapsody once the data is received.

A series of Utilities, reports and processes have been incorporated into the workflows that allow for monitoring orders placed, acknowledgements received, results sent. These reports and processes are used on a daily basis to ensure all communications, orders, acknowledgements and results messages are working correctly. These same reports and processes can be used to quantify and monitor performance as well.

Current transport methods in production:

- CDC PHIN MS using either CDC's RnR hub or APHL's RnR hub with 3 external partners
- CT DPH can support the exchange of reportable lab events utilizing Laboratory Interoperability Cooperative (LIC) grant through Surescripts. This method transports HL7 messages through PHIN MS using either CDC's RnR hub from the Surescripts hub as of 2/20/2013. Currently there are no hospital labs in CT that have been identified who wish to participate and facilitate real-time electronic data exchange of reportable lab results with DPH.
- Secure FTP with 21 hospital emergency departments for submitting syndromic surveillance data daily, Lead Blood level, HIV, Lyme disease data in non-HL7 format from some hospital and commercial laboratories with manual effort on business areas to consume the data.

Current development:

- Secure FTP with 21 hospital emergency departments for submitting syndromic surveillance data daily with Pilotfish to automate the transform, validate and data extraction for upload into system reducing the manual effort on business area. All of this work will be leverage to the Direct and web services as communication route change with all the transformation, validation and data extraction process remaining the same. All of this work is being funded by CDC ELC Interoperability Grant as well as technical assistance requests to CDC to provide additional resources for LOINC mapping for the state laboratory's LIMS, CDC PHIN MS PHIN MS Support and APHL for the state laboratory.
- Stage 1 Meaningful Use Automated Testing Portal using Pilotfish would be accessed by practices or their vendors on their client's behalf and hospital laboratories or their vendors on the laboratory's behalf to complete Stage 1 test as well as HL7 message formatting and any or all validation business rules. This testing will include sending information in as well as the acknowledgments (pass and failures) back to the sender. These systems need to handle the handshake portion as well. DPH is currently developing and will publish guides for HL7 formats version 2.5.1 specific for CT as well as any coding to support laboratory and immunization data. All of this work is being funded by CDC ACA IIS-EHER Interoperability Grant and some funding HIE Grant as well as technical assistance requests to CDC to provide additional resources for LOINC mapping for the state laboratory's LIMS, CDC PHIN MS PHIN MS Support and APHL for the state laboratory.

Current planning stage for development within next year:

- HITE-CT and CT Department of Public Health (DPH) are working collaboratively on the proposed Direct solution and proposed vendors. DPH is working on developing the solution to enhance the ability to receive and consume Direct messages as they relate to Meaningful Use for public health reporting measures. The current solutions above in development will be leverage to the Direct as communication route change with all the transformation, validation and data extraction process remaining the same. No funding has been identified to date for this work but is planned as part of CT DSS IAPD that is targeted for DPH work.

- Web Services
  CT DPH participates on the American Immunization Registry (AIRA) Web Service and Real-Time Data Exchange workgroup. CT DPH will begin to development on a SOAP web service solution after CIRTS 2.0 production release in April 2013. This solution will work for all public health reporting measures for Stage 2. This production implement will be hosted at CT Dept. of Administrative Service/Bureau of Enterprise Systems and Technology (DAS/BEST) infrastructure in East Hartford for external access over the internet. This will require that the solutions meet state standards for security and software lifecycle process.

  DPH is currently developing and will publish guides for HL7 formats version 2.5.1 specific for CT as well as any coding to support laboratory and immunization data. All of this work will be leverage to web services as communication route change with all the transformation, validation and data extraction process remaining the same. All of this work is being funded by CDC IIS-EHR Interoperability and PHEP Grant.

PIN Priority: ePrescribe

Although the deployment of eRx capabilities in pharmacies is very high, the numbers of medication orders sent electronically is lagging. The electronic transmission of medication is a key for patient safety and convenience. Issues as to why providers don't use this capability need to be addressed.

Gap	Strategy to Address	Tactics	Responsible Party	Start and End Date	Targets	Projects Cost
We have identified that providers are not using the ePrescribe capabilities they have as often as they could.	Resolving this gap will require an outreach effort to providers. In order to properly focus this effort, additional information must be gathered to determine reasons why providers don't take advantage of existing ePrescribe capabilities.	We will look at our most recent evaluation to see if there is information we can use to develop a provider engagement plan to address this issue. If more questions need to be added to the current survey, we will do that in preparation for our next survey.	-HITE-CT and HIT Coordinator	3/13 – 6/13	30 Days – Examine survey results	ONC - $0
		We will work with the REC on identified issues to have them engage their provider customer base.	-REC – engagement plan	5/13 – 10/13		ONC - $0
		Evaluate survey results after outreach performed.	-HITE-CT, HIT Coordinator	TBD		ONC - $0

Detailed Tactic Implementation Plans

Establish a Direct Marketplace for Connecticut – Partnership with RIQI

HITE-CT has closely monitored the development of the ONC-sponsored Direct initiative. It is not in HITE-CT's best interest to provide Direct services as part of our service offering based on the following factors:

- Financial modeling shows that operating this service would contribute little, if any, to HITE-CT's sustainability.
- Growing competition within the Direct service vendor market will further reduce operational margins.

Given the need for Direct services in the state, HITE-CT will participate with the Rhode Island Quality Institute's (RIQI) Direct Marketplace. We will sign an MOU with RIQI for a period of one year at which time we will re-evaluate our relationship. RIQI was the first state to establish a marketplace and is considered a thought leader in this area. Through this already established marketplace, we will be able to offer a selection of "pre-approved" Direct service vendors to Connecticut providers. All vendors are evaluated on technical adherence to Direct standards, products and services offered, and participation in the national Direct project and the Rhode Island Trust Community.

This relationship is advantageous to HITE-CT in the following ways:

- RIQI is supportive and willing to work with Connecticut to leverage their marketplace.
- The marketplace is already established and saves HITE-CT the time required to establish a Direct Marketplace.
- The current vendors in the RIQI marketplace are experienced on a national level and provide a rich set of value-added services for those providers who are interested.
- RIQI staff is providing all administrative functions (at a cost,) so HITE-CT will not have to hire additional resources.
- Rhode Island is a border state to Connecticut. This relationship will foster future initiatives around interstate HIE.

Additionally, we will continue to explore other opportunities for collaboration with other New England states for leveraging their mature infrastructure and contractors to sustain HIE efforts. We have been in conversations with Maine and are requesting exploratory conversations with Massachusetts.

High Level Implementation Steps:

Implementation Steps	Responsible Party	Completion Date
Initiate discussion plan with RIQI	HITE-CT, RIQI	3/14/2013
Discuss plan with HITE-CT Board	HITE-CT	3/5/2013
Approve plan (HITE-CT Board)	HITE-CT Board	4/5/2013
Marketplace available for CT providers	HITE-CT, RIQI	4/8/2013
Create a joint HITE-CT/RIQI press release	HITE-CT, RIQI	4/8/2013

Expected Costs of Tactic:

Item	Costs
Legal (Review of marketplace documents)	$7,000
Projected Total Costs	**$7,000**

Measurement Metrics:

- Successfully reached agreement with RIQI

Voucher Program for Direct Services

As part of a *Capacity-building approach*, many states have successfully initiated voucher programs for providers to purchase Direct services for a limited time period. HITE-CT will initiate a voucher program to target provider groups that will defray some or all of the costs for the purchase of Direct services from our Direct Marketplace approved vendors. This initiative will focus on creating a "network effect" within the provider community. The network effect is a recognized pattern of exponential growth where the value of participation in the network increases exponentially compared with the cost of participation. To achieve the desired outcome, the network must reach a critical mass and have the correct mix of participants. Vouchers will cover up to one year of service. Since funding is limited, vouchers will first be offered to specific provider groups. These include hospital emergency departments, Federally Qualified Health Centers (FQHCs), VNAs, Long Term Care Providers, and behavioral health providers. From our initial assessment, these groups would benefit from Direct services and help establish a baseline for further network growth. In addition, the FQHCs, some VNAs, and a number of behavioral health providers have expressed interest in being early adopters.

The program will allow a set number of voucher slots for each provider group. There will be specific requirements around the number of care summary/lab/eRx documents that must be transmitted to other providers via Direct messaging. HITE-CT will conduct multiple rounds of funding as finances permit. Round One will provide funding to the aforementioned groups. We will examine the results of Round One funding and, if necessary, identify additional funding programs, which may be open to other potential participants.

We have examined how other states have implemented this type of program for its provider community. Results have varied, but generally, just providing the vouchers without any formal engagement program has not been successful. The delivery of these services will include a marketing and stakeholder engagement plan jointly developed by HITE-CT and the REC.

The following outcomes are expected from this initiative:

- Initiation of a Direct messaging network in Connecticut
- Increase in number of care summary documents exchanged
- Possible provider workflow enhancements
- A conduit for public health reporting through Direct messaging

High Level Implementation Steps:

Implementation Steps	Responsible Party	Completion Date
Approve voucher program	HITE-CT Board	4/2/2013
Modify DPH MOU	DPH, HITE-CT	4/9/2013
Develop voucher requirements for first offering	HITE-CT	4/9/2013
Work with REC on marketing, distribution, and training	REC	4/9/2013
Voucher program 1 and marketing available	HITE-CT, REC	5/6/2013
Monitor changes in clinical document transmissions	HITE-CT	10/15/2013
Develop voucher requirements for second offering	HITE-CT	8/16/2013
Voucher program 2 and marketing material available	REC	10/15/2013
Monitor changes in clinical document transmissions after second offering	HITE-CT	2/2/2014

Expected Costs of Tactic:

Item	Costs
First offering of vouchers (Approximately 750 providers)	$150,000
Second offering of vouchers (Approximately 250 providers)	$50,000
RIQI administration costs ($15/per application – Costs based on complete uptake)	$15,000
Projected Total Costs	**$215,000**

Measurement Metrics:

- Number of vouchers for phase I issued at 30, 60, 90, and 120 days
- Number of providers who accepted phase I voucher and have complied with requirements (exchanging clinical documents)
- Percent of providers signed up for phase I by REC at 30, 60, 90, and 120 days
- Number of clinical documents exchanged via Direct from phase I vouchers at 30, 60, 90, and 120 days
- Number of vouchers for phase II issued at 30, 60, 90, and 120 days
- Combined phase I and II increase in clinical document transfer post phase II at 30, 60, 90, and 120 days

Demonstration Project: A Hospital or IDN to Send Immunization Data to State Immunization Registry via Direct Messaging

The method for transmitting immunization data for Meaningful Use Stage 2 certification is still under examination by DPH. Since all MU Stage 2-certified EHRs must be able to send and receive Direct messages, it would be logical to leverage that capability for other purposes as well. An increasing number of EHR vendors are

capable of sending structured data in CCD (Continuity of Care Document) format via Direct messaging. Given that the immunization data is part of the transmitted CCD, this would allow for the extraction of the data, transformation into an appropriate format, and delivery to DPH for inclusion in the statewide immunization registry. It should be noted that the CCD is the preferred format, but not the only format for transmission. We will also provide capabilities to receive data in HL7v2 format.

Demonstrating this capability has potential advantages:

- Presumably, providers with MU Stage 2-certified EHRs could take advantage of this service with little or no extra effort or cost.
- It could lead to more providers using Direct service, thus increasing the utility of Direct messaging in the state.
- Hospitals should be able to utilize this by leveraging existing interface capabilities.
- This pilot will serve as a model for the transmission and processing of data for other public health reporting (e.g., syndromic surveillance) and possibly other HITE-CT service offerings.

High Level Implementation Steps:

Implementation Steps	Responsible Party	Completion Date
Identify pilot participant(s), (hospital(s), and or community provider(s))	HITE-CT, HIT Coordinator	5/22/2013
Collaboratively finalize approach with DPH, pilot participant(s) and HITE-CT	HITE-CT, HIT Coordinator, DPH, Pilot Participant(s)	7/10/2013
MOU between parties	All	8/28/2013
Legal review of MOU by HITE-CT lawyer	HITE-CT	9/18/2013
All participants deploy required technology	All	10/30/2013
Execute pilot	All	12/4/2013
Publish results to stakeholder community	HITE-CT	1/5/2013

Expected Costs of Tactic:

Item	Costs
Legal review	$4,000
Direct accounts for 1 year for pilot participants (HITE-CT, DPH, 3 participants)	$1,000
Software development costs for participants	$35,000
Additional software development costs for DPH beyond current grant funding	$0
Projected Total Costs	**$40,000**

Measurement Metrics:

- Number of participant(s)
- Number of immunization records sent to DPH by pilot participant(s)
- Signed MOU with DPH
- Signed MOU with Pilot Participants(s)
- Cost to pilot participants for software development

Care Coordination Project Utilizing Real-time Admission and Discharge Information

Understanding how patients utilize the health care system in near real time is an important tool for case coordinators. This is especially true for high utilizer patients. We will work with the Department of Social Services (DSS) to provide near real-time information on admissions and discharges from care sites for an identified group of high utilizer Medicaid patients. The information will be provided to case coordinators designated by DSS. As opposed to current practices, the data will be available in near real time. This will allow the case coordinator to intervene on a patient's behalf at an earlier point in the care continuum. We expect this will lead to a reduction in overall cost. Initially, we will specifically track patients identified as high utilizers. If this proves successful, we hope to expand the scope to additional Medicaid patient populations and allow for the exchange of clinical documents between care providers and case coordinators.

Our objective is to focus on appropriately reducing the overall cost of care for Medicaid high utilizer patients. We will alert case coordinators in near real time as to where/when a patient is utilizing the health care system. This will allow case coordinators to take more timely action on a patient's behalf, which should help to improve the quality of care and reduce overall cost.

The following are assumptions:

- Costs for this project will be funded by DSS.
- We will track high-utilizer Medicaid patients, which will be identified in advance by DSS.
- Collaboration from hospitals and possibly large provider organizations is required.
- DSS will assist in bringing partners to the project.
- Care coordinators will be identified by DSS; we will work with them to develop an alerting workflow.
- We intend to use Direct messaging for the transport of HL7 ADT messages.
- Initially, the number of collaborating organizations will be small. If we are successful, additional patient groups and participating organizations may be added. The intention is to have five hospitals participate.
- The evaluation time period for the project is six months after initial go-live.

Expected outcomes of this initiative are:

- Reduction in cost of care for the patient population group through early intervention
- Additional network effect for Direct messaging through the inclusion of additional Direct users participating in this project

High Level Implementation Steps:

Implementation Step	Responsible Party	Completion Date
Approve Care Coordination Project	DSS Commissioner	4/10/2013
Form project team and define roles	HIT Coordinator	5/22/2013
Identify high utilizer group	DSS	5/8/2013
Identify partner hospitals and/or other providers	HITE-CT, HIT Coordinator	6/26/2013
Sign MOU (partners)	DSS, Partners	7/31/2013
Deploy technology	HITE-CT, Partners	10/9/2013
Go-live	All	10/16/2013
Provide initial outcome report to DSS	HIT Coordinator	4/16/2014

Expected Costs of Tactic (Costs paid by DSS):

Item	Costs
Direct accounts 1 year for pilot participants (DSS, 5 participants)	$1,200
Software development costs for 5 participants	$60,000
Additional software development costs for DSS (may include message transformation, portal for viewing, etc.)	$100,000
Software development costs for HITE-CT	$40,000
Projected Total Costs	**$201,200**

Measurement Metrics:

- Cost of care for high utilizer patient before
- Cost of care for high utilizer patient after
- Number of care interventions by care coordinators
- Number of admission and discharge messages sent

Medicaid IAPD Project

The Department of Social Services (DSS) under the guidance of the State HIT Coordinator has developed and submitted an IAPD proposal to CMS. The proposal focuses on four initiatives:

1. **Providing Direct messaging capabilities to Medicaid providers.** The plan calls for some funding to support Direct messaging for Medicaid providers on a first-come first-serve basis.
2. **Developing a statewide provider directory, initially including Medicaid providers**. Funding is being sought to develop a statewide directory of Medicaid providers with enhanced capabilities that will serve as the basis for a statewide provider directory. The proposal would provide for some resources to maintain the data integrity and technology to support that effort.

3. **The development of a patient portal for a limited number of Medicaid patients**. Funds are being sought to develop a patient portal for a limited pilot group of Medicaid patients, which assists patients in being able to view, download, and transport their health information to their providers. The funding would provide technology, patient outreach, and training support.
4. **Building clinical data exchange capabilities between service organizations and the health care provider community at large in support of better transition of care**. One such example is the use of CCDs for Long Term Care (LTC) coordination. LTC costs are a major cost driver for DSS. This initiative would provide funding to develop more effective and efficient transfer of important clinical information as Medicaid patients transition from various care settings into and out of LTC settings.

This proposal is under review at CMS at this time. A response from CMS is expected within the next two months. As part of this IAPD grant, HITE-CT would provide services to manage and deploy some or all of the required technology. This is important to HITE-CT in the following ways:

- This project provides additional dollars for Direct messaging deployment. Combined with planned HITE-CT initiatives around Direct messaging, this will further increase the number of providers connected with Direct.
- This project could fund some part (the Medicaid contribution) of the provider directory initiative (See Section: *Development of a Statewide Provider Directory under Changes to Technology*).
- HITE-CT **could** be compensated for services as part of this plan.

Development of a Statewide Provider Directory

The information contained in a provider directory has broad use among many clinical and non-clinical applications across the health care enterprise. The information can be used to enhance the clinical workflow (contact information), enhance the user interface (user friendly names and titles), and ensure identity (digital certificates). The provider directory is a critical component of HIE. Properly developed and maintained, it offers multiple purposes. The provider directory could serve as an authoritative source for provider information, a statewide Direct address repository, and a resource for licensure information, among other uses. Initially, the hospital community has indicated an interest in this service. Further discussion needs to take place to develop a detailed proposal.

There is a possibility that some funding for this project could be obtained through DSS as part of their CMS IAPD grant funds (see Medicaid IAPD Project above). One of the proposed initiatives detailed in the IAPD grant is to provide DSS with an accurate provider directory. HITE-CT intends to populate the provider directory from multiple sources, both public and private. Incoming data will be automatically analyzed to produce a "Single Best Record" (SBR) from all incoming feeds. This will be coupled with a self-service portal for providers to update their information and for staff to manage the process. The combination of these processes will result in high quality provider information—exactly what DSS is looking for.

This is an important project for the following reasons:

- An authoritative source of detailed and broad provider information is lacking in the state.
- Although many organizations have provider databases, the quality of the data in any single source is in question.
- Well-maintained data will allow organizations and providers to more easily and accurately communicate with one another.
- This is a valuable service to the provider community, as it is costly to keep up.
- It could serve as a revenue source for HITE-CT.
- The data also has numerous secondary uses that many companies, such as large national provider database vendors, would pay for.

Initial Uses Cases Supported:

- Authoritative source provider directory is used to feed "cleaned" data to state Medicaid provider database.
- A provider needs to look up information to refer a patient to another provider.
- A patient wishes to contact a provider.
- The DPH wishes to send out an alert to providers.

High Level Implementation Steps:

Implementation Step	Responsible Party	Completion Date
Garner stakeholder commitment	HITE-CT	7/24/2013
Identify stakeholder requirements	HITE-CT, Stakeholders	7/24/2013
Identify early adopters	HITE-CT	8/21/2013
Publish an RFP for services	HITE-CT	9/25/2013
Select vendor and implement technology	HITE-CT	10/30/2013
Work with early adopters to develop a usable system	HITE-CT	1/22/2014
Partner with the REC for marketing of the Directory to additional customers and a possible supporting role	REC	11/20/2013

Expected Costs of Tactic (First Year):

Item	Costs
Legal	$10,000
Software	$180,000
Hardware	$6,000
Initial implementation	$10,000
Maintenance (paid after year 1)	$40,000*
Hosting	$24,000
Additional staff	$85,000
Marketing	$10,000
Projected Total Costs Year 1	**$325,000**

**Maintenance costs are not included in Year 1 costs*

Measurement Metrics:

- Number of early adopters identified

Change to Strategies for ePrescribe

From our recent physician survey, 61% of providers have the ability through their EHR to order medications; however, only 42% use it almost all the time. This is a difficult area to address, as we are unsure of the reasons why providers choose not to leverage existing ePrescribe capabilities. We will address this issue in the following manner:

- Re-examine current survey results in detail to look for reasons why providers don't use ePrescribe when it is available to them.
- Work with the REC to address their provider community on this issue.
- Re-evaluate the next survey results.

High Level Implementation Steps:

Implementation Step	Responsible Party	Completion Date
Examine current survey results	HITE-CT, HIT Coordinator	5/22/2012
Work with REC to address their customer base	REC	6/2013 – 9/2013
Re-evaluate the results of the next survey	HITE-CT, HIT Coordinator	TBD

Expected Costs of Tactic (First Year):

Item	Costs
Projected Total Costs	**$0**

Measurement Metrics:

- Study complete
- Outreach plan implemented
- Changes in providers using ePrescribe accessed at appropriate survey period

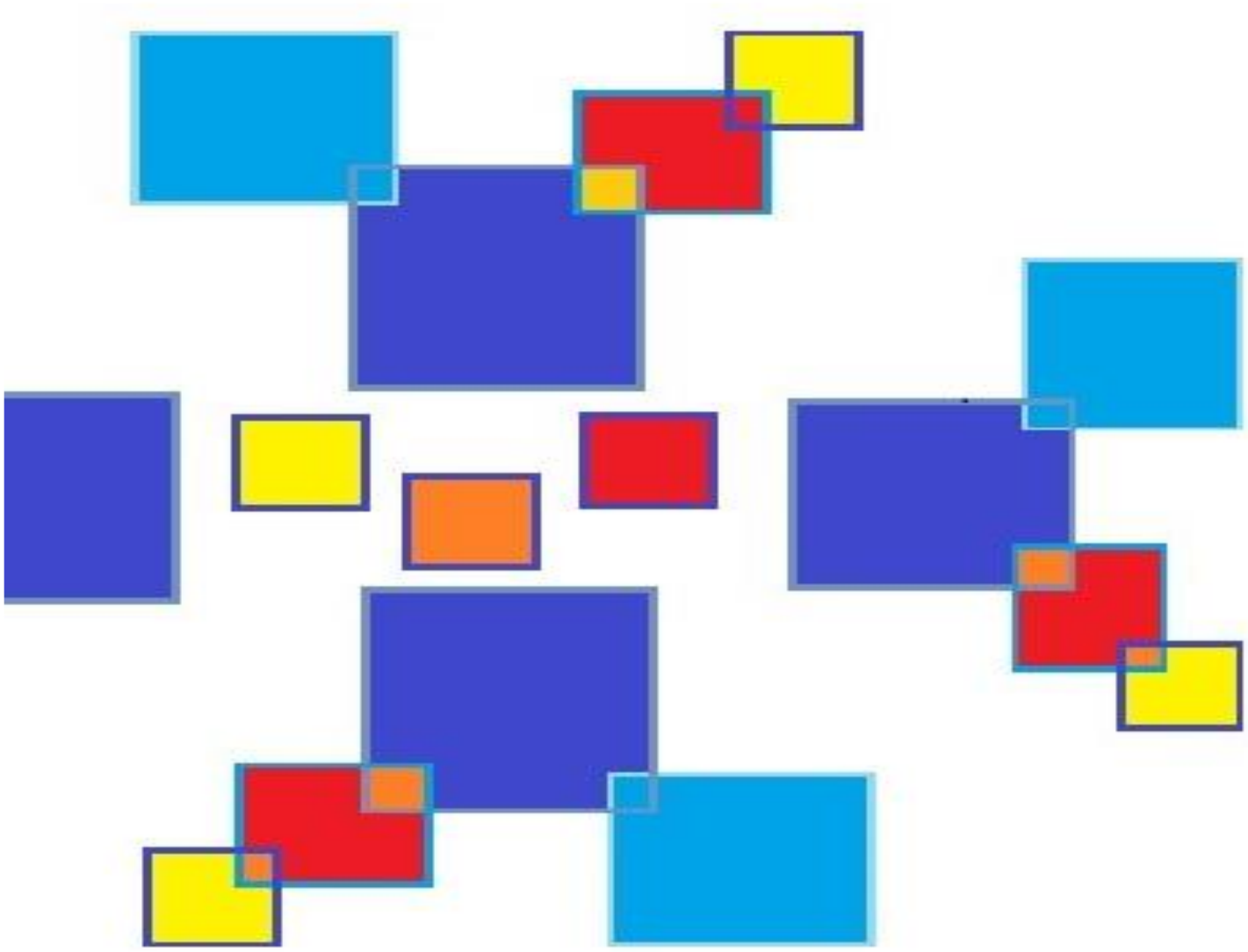
Summary

Our HIE market is still maturing. There are many unanswered questions in the minds of our stakeholders with respect to the sustainability of HIE efforts and the value proposition. As we learn more, we are better able to address these concerns and make appropriate changes to our state HIE strategy. Currently, all efforts are focused on establishing a Direct marketplace, which gives all providers a mechanism to exchange health care information. The absence of widespread HIE services that cross organizational boundaries has been a single deterrent to our success. This has impacted the exchange of care summaries, which in turn impacts coordination of care and many other workflow improvements which could be realized. For the last year of the grant, our primary focus will be on delivering Direct messaging capabilities to the market.

2014

Evaluating Connecticut's Health Information Technology Exchange

Executive Summary



Prepared for

Connecticut Department of Public Health

Prepared by

Minakshi Tikoo PhD, MBI

Executive Summary

In 2010, the Connecticut Department of Public Health (DPH) entered into a Cooperative Agreement with the Office of National Coordinator for Health Information Technology (ONC), to create and implement a State Health Information Exchange (HIE). DPH received an award of $7.3 million to initiate and sustain HIE activities in the state of Connecticut. The Health Information Technology Exchange of Connecticut (HITE-CT), a quasi-public agency, was created by Public Act 10-117, "*An Act Concerning Revisions to Public Health Related Statutes and the Establishment of the Health Information Technology Exchange of Connecticut,*" Sec. 82-90,96 (codified at CGS §19a-750(c)(1)), by the 2010 Connecticut General Assembly and Governor Rell. HITE-CT received $4.3 million over the course of three years to create and implement an HIE infrastructure and facilitate exchange activities in the state. Additionally, DPH contracted with the University of Connecticut Health Center (UCHC) to evaluate the ongoing development and implementation of Connecticut's Health Information Exchange (CT-HIE).

At the time of this report Connecticut does not have an operational statewide Health Information Exchange. This executive summary is based on the set of detailed reports.[1,2,3,4,5] At the end of the cooperative grant period on March 14, 2014, the HITE-CT had bought two assets: a Provider Directory (PD) and an Enterprise Master Patient Index (EMPI) and had one full-time employee. The PD was deployed in a very basic development environment at the Bureau of Enterprise Systems and Technologies.

We received 629 responses from Connecticut residents between 8/10/2011- 12/20/2013 to a telephone survey asking about perspectives on HIT and HIE. These responses give us insights into how consumers might use EMRs, PHRs, and HIE should they become universally available. The estimates of Connecticut consumers' perspectives on HIT and HIE offer meaningful information to state policy makers and stakeholders as they engage in strategic planning for purchase and implementation of health information technologies. Better understanding the needs of our residents will help ensure that the HITECH Act's overarching goal of facilitating the availability of health information in support of a connected and seamless health care delivery system with improved treatment outcomes is achieved.

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[1] Tikoo M, Costello D. *Evaluating Connecticut's Health Information Technology Exchange: Consumer Survey Report.* Farmington, CT: University of Connecticut Health Center; 2014.

[2] Tikoo M, Costello D. *Evaluating Connecticut's Health Information Technology Exchange: Physician Survey Report.* Farmington, CT: University of Connecticut Health Center; 2014

[3] Tikoo M, Hilario H. *Evaluating Connecticut's Health Information Technology Exchange: Stakeholder Report.* Farmington, CT: University of Connecticut Health Center; 2014.

[4] Tikoo M, Langton C. *Evaluating Connecticut's Health Information Technology Exchange: Pharmacy Survey Report.* Farmington, CT: University of Connecticut Health Center; 2014.

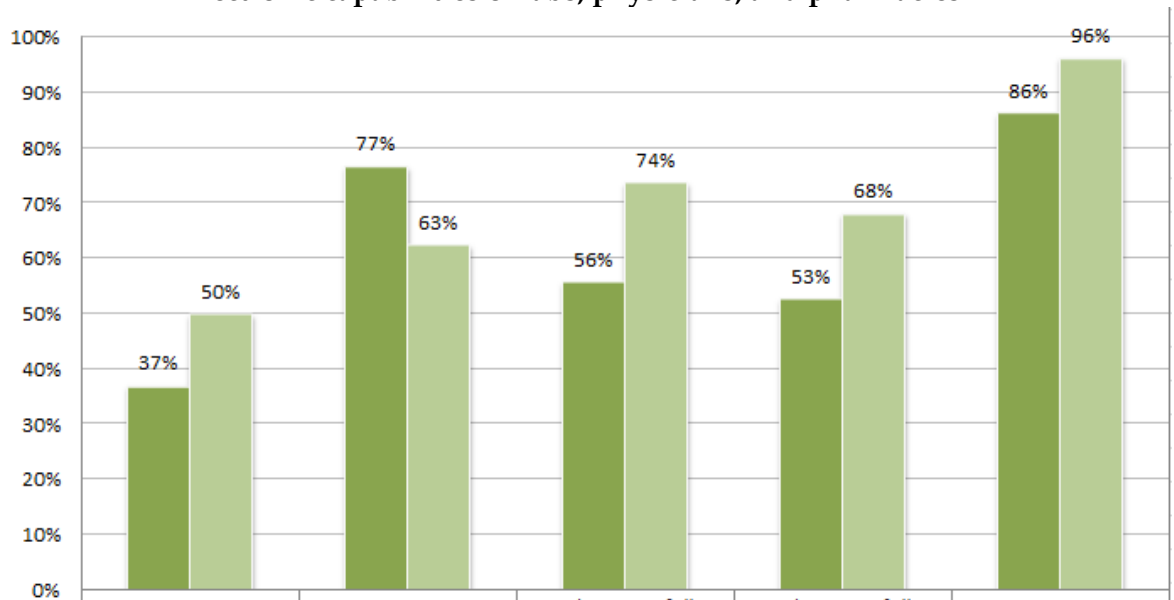
[5] Tikoo M, Roy A. *Evaluating Connecticut's Health Information Technology Exchange: Laboratory Survey Report.* Farmington, CT: University of Connecticut Health Center; 2014.

We received 1,346 responses (880 from the 2011 survey and 466 from the 2013 survey) representing 1,082 unique physicians. 616 physicians completed a survey during the first distribution only (2011 Cohort 1), 202 physicians completed a survey during the second distribution only (2013 Cohort 2), and 264 physicians completed surveys at both points (2011 Baseline and 2013 Follow-Up). The goal of the physician survey was to measure the rate of EHR adoption, extent of interoperability, and assess the knowledge and attitudes of physicians toward the creation of a Heath Information Exchange. Now we know what physicians practicing in Connecticut think about Connecticut's efforts in the HIT and HIE. They inform us about their level of EHR adoption, and report on the challenges that they face while implementing HIT solutions.

E-prescribing activities increased from 2011 to 2013 among pharmacies and prescribers. 96% of the pharmacies were enabled for processing e-prescriptions and 62% of the prescribers were e-prescribing. Independent pharmacies were more likely than chain/franchise pharmacies to indicate prescription transaction fees, low prescriber activity and maintenance costs as barriers to implementing e-prescribing.

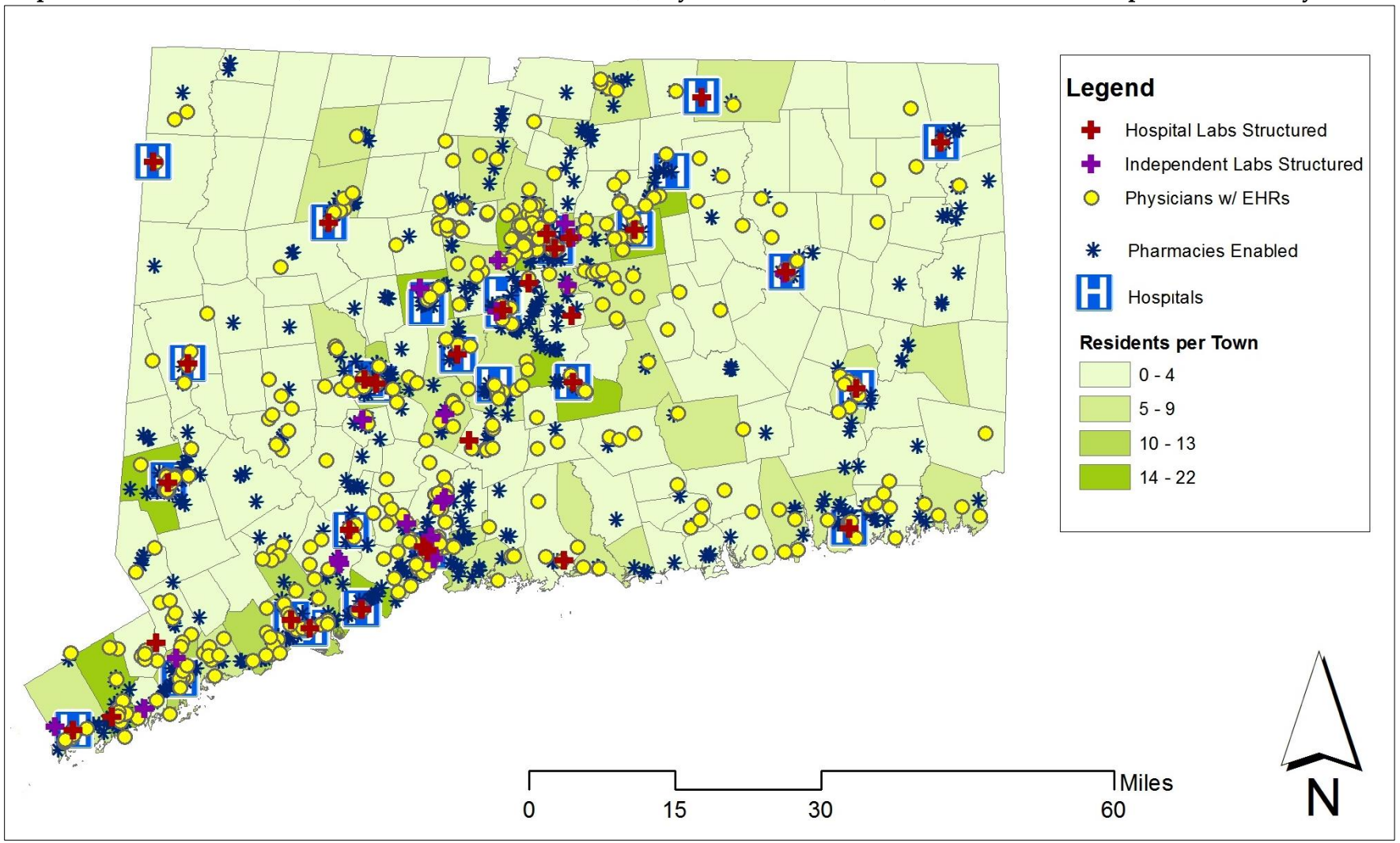
In 2013, 63% of the Connecticut's hospitals were sharing lab results electronically which is higher than the national average of 56%. This represents a significant decrease from 77% in 2011-12. 50% of the independent labs were sending lab results electronically in 2013, an increase from 37% in 2011-12. Due to the low number of labs that responded to our survey, the results should be interpreted with caution.

Electronic capabilities of labs, physicians, and pharmacies



	% Independent labs sending results electronically in a structured format	% Hospital-based labs sending results electronically in a structured format	% Physicians fully implemented or in process of implementing (cohort)	% Physicians fully implemented or in process of implementing (matched)	% Pharmacies enabled for e-prescribing
2011	37%	77%	56%	53%	86%
2013	50%	63%	74%	68%	96%

Map of Enabled Pharmacies, Labs that send Structured Data, Physicians with EHRs, & Residents that Completed the Survey



What are Connecticut residents saying?

We received 629 responses from Connecticut residents between 8/10/2011- 12/20/2013 to a telephone survey asking about perspectives on HIT and HIE. This survey was intended to assess people's awareness of and readiness for health information technologies, to learn how best to engage consumers in the state's efforts to develop an HIE, and to develop strategies to support consumers' HIT adoption.

Descriptive Characteristics of Connecticut Residents (N=629)

- Nearly two-thirds (64%) of participants were female.
- Ages ranged from 18 to 92 and the median age was 59.
- Nearly a third (31%) of the sample was 65 or older.
- Most participants (79%) were white.
- More than half (57%) had a college degree or higher.
- The median household income was $80,000; 20% reported a household income of $100,000 or higher.

54% of the participants described their health as excellent or very good.

89% of participants were satisfied with the care they received from their doctor or physician's assistant.

87% of participants said they understood what their doctor said to them during their last visit.

Current Health, Health Care, and Satisfaction with Care

- 54% of participants described their health as excellent or very good.
- 34% of participants said they had a chronic health condition.
- 24% of participant reported 1-2 visits, 25% reported 3-4 and 36%reported more than 4 visits to a doctor or physician's assistant in the last 12 months.
- 89% of participants were satisfied with the care they received from their doctor or physician's assistant.
- 49% of participants reported that their physician's office had implemented an electronic medical record system and a third said they were not sure.

Health Literacy and Sources of Health or Medical Information

- 63% of participants said they read the printed health-related information they received from their physician and most participants said the material was not difficult to understand (61%) and did not contain words they were unfamiliar with (56%). However, when words in the printed materials were unfamiliar, fewer than half (42%) asked for an explanation.
- 87% of participants said they understood what their doctor said to them during their last visit and most (80%) participants who did not understand something their doctor said to them reported receiving an explanation.
- 79% of participants reported having ever looked for information on health or medical topics. Most common source (87%) was the Internet followed by a physician (15%).
- 48% had used the Internet to find health-related information in the past month.

Awareness of HIE and HIT

- 83% of participants had heard about electronic medical records.
- 65% of participants had heard about the electronic health information exchange.
- 50% of participants had heard of personal health records.
- 83% had never heard of the Connecticut Health Information Exchange.
- Demographic (education, gender) and individual characteristics (online experience, having a chronic health condition or a doctor with an EMR) were associated with increased awareness of HIE and HIT.

Attitudes toward HIE

- 72% supported a national HIE that was driven by patient consent.
- 57% reported that concern about privacy was the single most important barrier that was likely to get in the way of a national HIE.
- 64% expressed support for an "opt-in" and 21% supported "opt-out" consent model.

83% of participants had heard about electronic medical records.

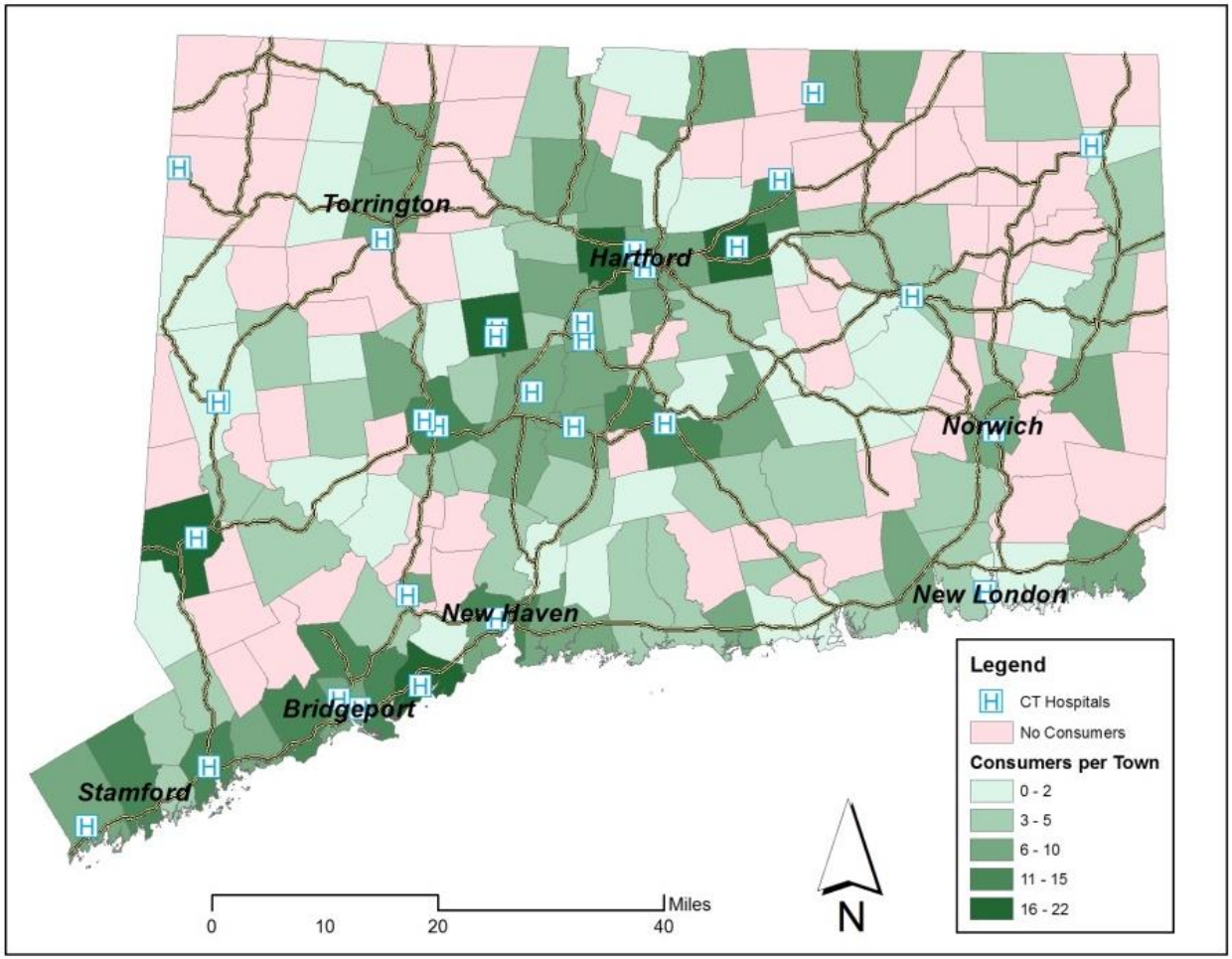
72% supported a national HIE that was driven by patient consent.

64% expressed support for an "opt-in" and 21% supported "opt-out" consent model.

Perceived Benefits of HIT

- Most participants thought HIT adoption offered benefits in terms of:
    - better quality of care (73%),
    - better doctor-patient interaction (68%),
    - fewer medical errors (65%), and
    - reduction in duplicate tests and procedures (71%).
- 53% of participants reported an interest in having an electronic personal health record where they could manage their health information on a secure website.
- 57% of participants reported an interest in allowing their de-identified health information from their doctor's EMRs to be shared with outside entities such as health insurance plans, researchers, and other companies.
- 47% cited privacy concerns as the reason for their lack of interest in having access to an electronic personal health record and 74% cited privacy concern as the reason for their lack of interest in allowing access to their de-identified health information.
- Participant trust in the organization in charge of collecting and maintaining their information (38%) and feeling that the organization had policies to safeguard their privacy (35%) were mentioned most frequently as factors that might persuade people to change their mind on sharing of health information.
- 87% reported they would not intentionally withhold information from their doctor. However, if consumers thought their de-identified health information might be shared via their doctor's EMR, the proportion of consumers who said they were unsure if they would intentionally withhold information shifted from 3% to 9%, primarily due to privacy concerns.

Connecticut residents that responded to the survey
Residents from all counties and 109 towns in Connecticut responded to our survey.



What are the physicians practicing in Connecticut saying?

The 2013 EHR adoption rate among physicians practicing in Connecticut is between 53-62% compared to 38-40% in 2011. This is lower than the national average of 78%.

We received 1,346 responses (880 from the 2011 survey and 466 from the 2013 survey) representing 1,082 unique physicians. Six hundred sixteen physicians completed a survey during the first distribution only (2011 Cohort 1), 202 physicians completed a survey during the second distribution only (2013 Cohort 2), and 264 physicians completed surveys at both points (2011 Baseline and 2013 Follow-Up). The goal of the physician survey was to measure the rate of EHR adoption, extent of interoperability, and assess the knowledge and attitudes of physicians toward the creation of a Heath Information Exchange. These responses provide valuable insight into what the physicians in Connecticut think about Connecticut's efforts in the HIT and HIE space, inform us about the level of EHR adoption, and report on the challenges associated with implementing HIT solutions.

Physicians are increasingly adopting EHRs and participating in the EHR incentive program. The current rate of EHR adoption is between 53-62%, which is lower than the national average of 78%.

Physician Characteristics

- 2 out of 3 physicians were male.
- Age ranged from 29 to 88 with an average age in the mid-fifties.
- 8 out of 10 physicians were white and 9 out of 10 were non-Hispanic/Latino.
- Years of practicing medicine ranged from 1 to 56 years with a mean of over 20 years.
- 1 in 2 physicians reported they had "a lot" of computer experience.

Practice Characteristics

- Almost 6 out of 10 physicians were certified in a primary care specialty.
- 1 in 2 physicians reported working at a single practice site and 40-50% of physicians were from small (up to 3 physicians) practices.
- 7 out of 10 physicians saw the majority of their patients in an outpatient primary care setting and 1 in 2 characterized their practice as a single specialty group or partnership.
- 95% of physicians were not affiliated with the Veteran's Administration health care system.
- 9 out of 10 physicians saw more than half of their patients at their main practice site. Around 50-60% of physicians reported up to 100 patient visits at their main practice site during the past week.
- A third or more of physicians received more than half of their patient revenues from private insurance payments.

Technology Infrastructure

- Most physicians reported some form of high-speed Internet access, with cable or digital subscriber line (DSL) being the most prevalent type of service.
- Fewer than 1 in 5 physicians said they needed additional Internet access at any of their practice sites.

Computerized Systems Use

- The majority of physicians reported their practice used at least some electronic billing, with the proportion of practices using electronic billing exclusively increasing significantly over time from 2011 to 2013.
- In 2011, 41% of the Cohort 1 physicians used EHR systems compared with 59% of the 2013 Cohort 2 physicians.
- 8 out of 10 physicians had a computerized system that gathered patient demographics. The proportion of physicians with computerized systems which gathered other patient health information (e.g., record lists of patients' health problems and medications, record clinical notes) increased significantly between 2011 and 2013 for both sub-samples.
- In terms of order entry management (e.g., ordering prescriptions, lab, or radiology tests), there was a similar pattern of significant increases in prevalence between 2011 and 2013 for both sub-samples.
    - By 2013, 83-87% of physicians whose computerized systems allowed them to order prescriptions said their systems provided warnings of drug interactions or contraindications.
    - Over 85% said they used their systems to order prescriptions electronically.
    - At least 7 out of 10 physicians reported they had computerized systems that allowed them to view lab results and around half were able to use their systems to view imaging results. More than half of physicians said electronic images were returned to their systems.

8 out of 10 physicians had a computerized system that gathered patient demographics.

Over 85% said they used their systems to order prescriptions electronically.

At least 7 out of 10 physicians reported they had computerized systems that allowed them to view lab results and around half were able to use their systems to view imaging results.

- Relatively few physicians had computerized systems that enable public health reporting, although the proportions increased significantly in both sub-samples: from 6-7% in 2011 to 10-11% in 2013.
- Support for creating or receiving documents related to continuity of care was also relatively uncommon (6-26%), but tended to increase from 2011 to 2013.
- Computerized systems that generated reminders for guideline-based interventions and screenings increased significantly from around 25% in 2011 to 33-41% in 2013.
- Over a third of physicians reported that their computerized systems were capable of providing patients with electronic copies of health information and clinical summaries of visits.

- The proportion of physicians who reported using each clinical function of their computerized system "most or all of the time" increased over time. For the 2011 baseline and 2013 follow-up samples, the prevalence of five clinical functions increased by 10 or more percentage points: medication lists (37% to 51%), record clinical notes (39% to 50%), order radiology tests (20% to 31%), and patient problem lists (35% to 45%).

Acquisition and Implementation of EHR systems

- In the 2011 survey, 38-40% of physicians said their practice had fully implemented an EHR system compared with 53-62% in 2013.
- Of those physicians whose practices had acquired or were in the process of implementing their EHR system, around one half expected to have completed their implementation within the next 12 months.
- Between 20-30% of physicians whose practices were in the process of implementing or had fully implemented their EHR system said they had been using the system for more than five years.
- During 2013, 57.2% of physicians reported their main practice site had fully-implemented EHR systems and 13.3% were in the process of implementing an EHR.
- Allscripts was the most commonly used system in both 2011 and 2013.

Factors Associated with EHR Adoption

- In 2011, the odds of EHR adoption were higher among physicians who reported they had "a lot" of computer experience, and those who worked in larger practice groups.
- In 2013, the odds of EHR adoption were higher among primary care (versus specialty care) physicians and those who worked in larger practice groups.

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Effects of EHRs on Clinical Practice

- Between 36% to 52% of physicians felt that their EHR system had a positive effect and 38-51% of physicians felt that their EHR system had no effect on the quality of clinical decisions.
- 8 in 10 physicians said that their EHR system had a positive effect on timely access to medical records.
- More than half of physicians said their EHR system had a positive effect on preventing medication errors. Notably, few physicians felt their EHRs had a negative effect on quality of care.
- Between 64-74% of physicians reported that their EHR system had a positive effect on prescription refills.
- EHR systems appeared to have limited effects on the delivery of preventive and chronic disease care meeting practice guidelines.
- Relatively few physicians felt their EHR had a negative effect on the delivery of care.

- The majority of physicians indicated that their EHR system had improved communication with other providers. But 4 in 10 physicians said their EHR system had no effect on communication with patients.
- More than half of physicians whose practices had fully-implemented EHR systems were satisfied with their systems.

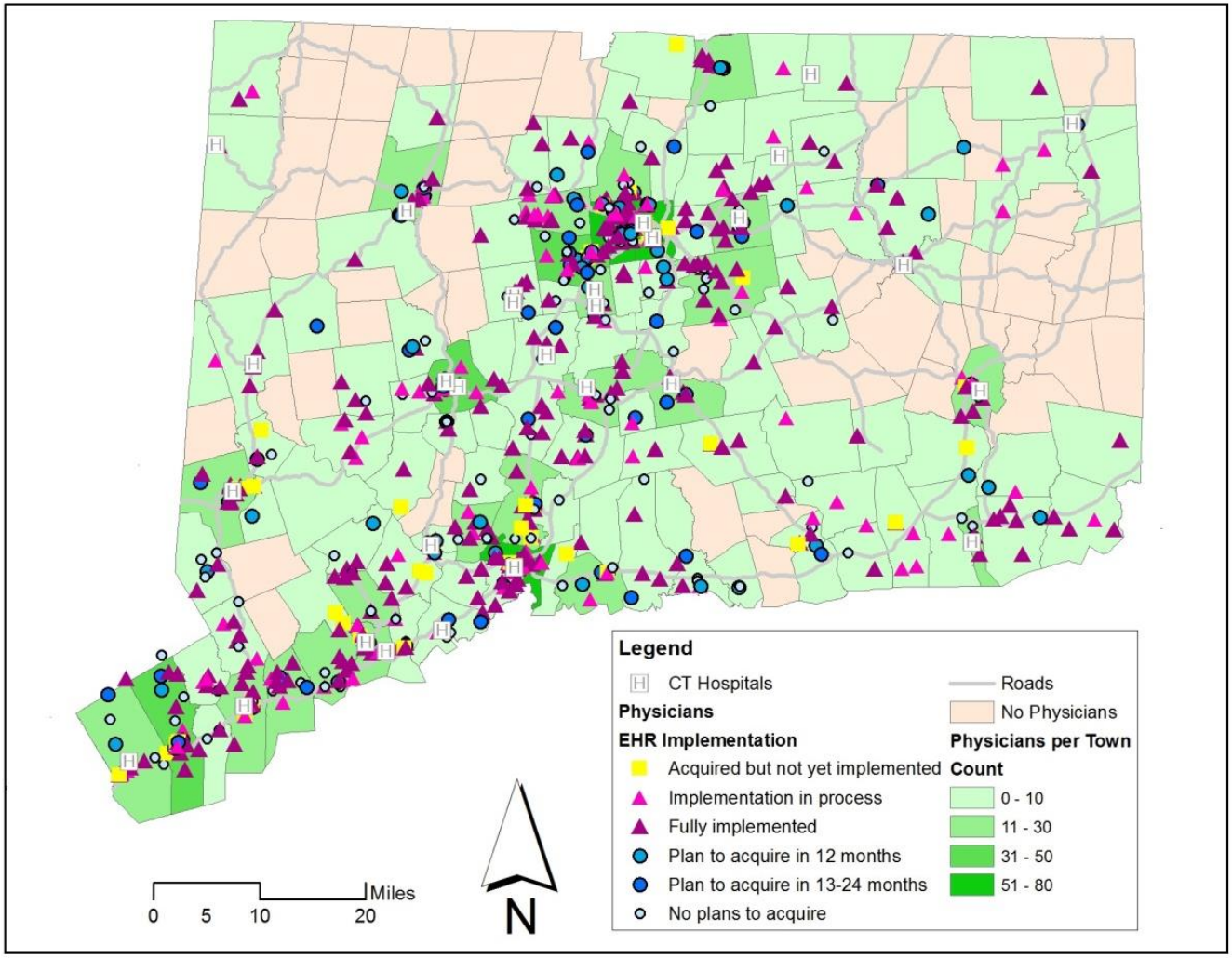
Certification Standards and Centers for Medicare and Medicaid Incentive Programs

- 3 in 10 physicians said that their EHR was integrated with a hospital system.
- 8 in 10 physicians said their system met federal certification standards.
- Over a third of physicians did not know if they qualified for the Centers for Medicare and Medicaid EHR incentive programs.
- Incentives for adoption of EHRs
    - Around half of physicians said that incentives and additional payments would have a major positive effect on the decision to adopt an EHR system.
    - Around 40% of physicians felt that legal protection from personal liability in the event of privacy and security breaches would have a major positive effect on EHR adoption decisions.
    - More than half of physicians felt that certification standards could have a major or minor positive effect on the decision to adopt an EHR.
    - Around 20% of physicians said that the decision to adopt an EHR could be motivated by legal liability arising from not using the latest technology.
- Barriers to adoption of EHRs
    - EHR-related costs were seen as a significant barrier by the majority of physicians.
    - Around half of physicians cited uncertainty about the return on their investment in an EHR as a major barrier to adoption.
    - Concern about having the capacity to undertake all phases of EHR implementation (i.e., to select, contract, install, and implement an EHR system) was mentioned by 37-47% of physicians.
    - Between 30% and 37% of physicians mentioned physician resistance as a major barrier to EHR adoption.
    - Physicians appeared relatively unconcerned about legal barriers to EHR adoption. Between two-thirds and three-quarters of physicians said concerns about inappropriate disclosure of patient information, illegal record tampering, or legal liability resulting from patients' access to medical records were minor barriers or not barriers at all to EHR adoption.
    - 9 in 10 did not think that adoption would be constrained by concerns about the legality of a hospital-donated EHR.
    - Finding an EHR system that meets providers' needs was mentioned as a barrier by more than half of physicians. Between 41-46% of physicians expressed concerns that the EHR system would become obsolete.

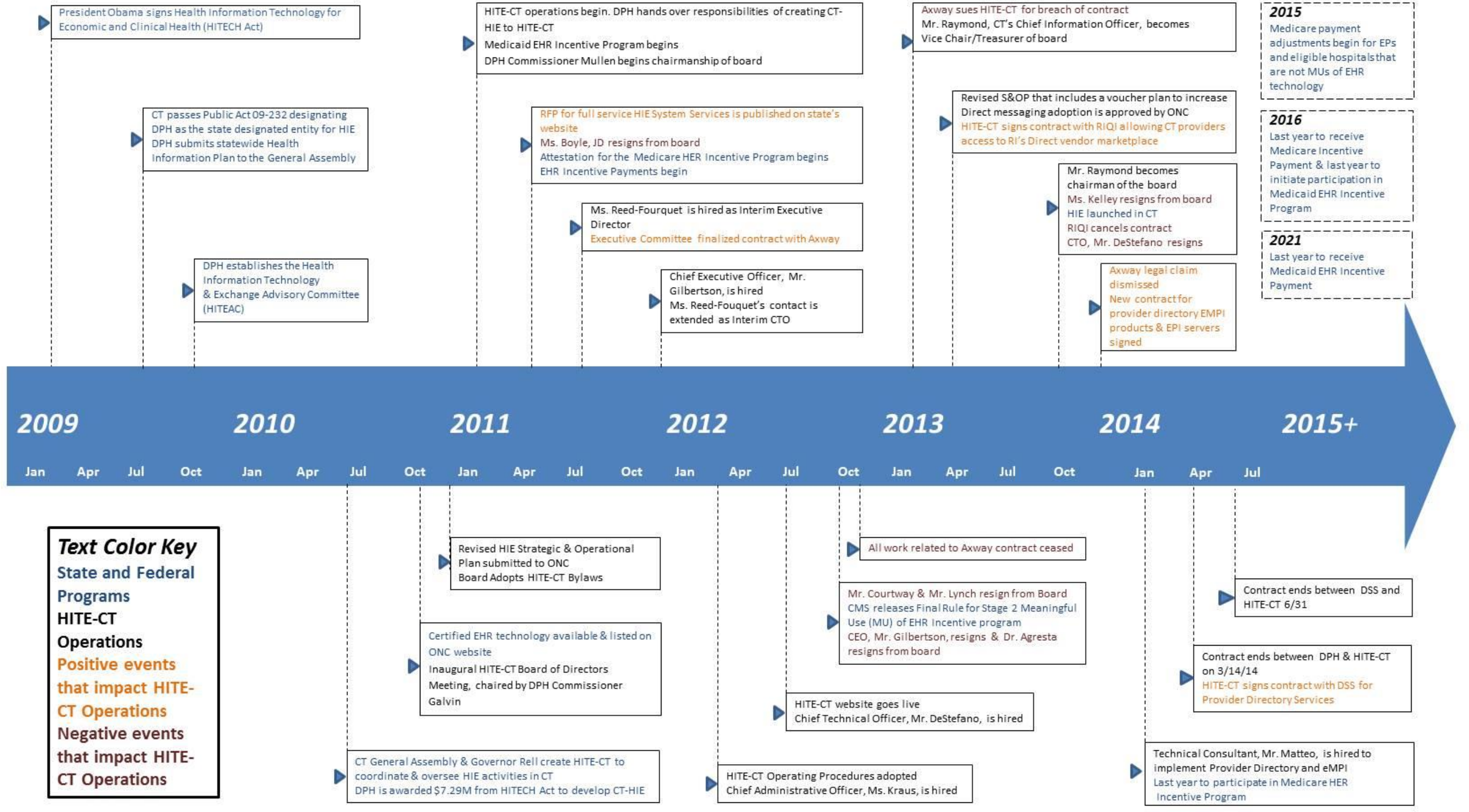
Health Information Exchange and PHRs

- 60-64% of physicians were not familiar with the Connecticut Health Information Exchange (CT-HIE).
- 3 out of 4 physicians had not heard of Connecticut's Regional Extension Center (REC) (eHealthConnecticut) and the majority (63-73%) had not used REC services.
- The majority of physicians' write-in comments echoed the lack of awareness of the CT-HIE. Other comments suggested physicians were interested in learning more about the CT-HIE or looking forward to using it when it is established.
- Support for adoption of patient personal health records (PHRs) was divided, with 40% of physicians expressing support and 30-40% saying they did not know if they supported PHRs. Physicians offered a variety of reasons for supporting PHRs related to improvements in health care quality, safety, efficiency, and patient empowerment. Reasons given for lack of support for PHRs included concerns about privacy and security, lack of interest or technology skills, perceived lack of benefit to patients, and cost (both in terms of time and money).

Locations of physicians by EHR adoption



HITE-CT Timeline at a Glance



HITE-CT Timeline at a Glance

What are the stakeholders saying?

This section summarizes data collected from the various stakeholders involved with the initial advisory committee, the HITE-CT board of directors, and external professionals with expertise in the HIT field. Data collection methods included online surveys, freelisting exercises, one-on-one stakeholder interviews and content analysis from HITE-CT board of director meeting transcripts and meeting minutes. This section reflects qualitative and descriptive quantitative analyses within the time frame of October 2010 – January 2014.

At the end of the cooperative grant period on March 14, 2014, the HITE-CT had purchased two assets: a Provider Directory (PD) and an Enterprise Master Patient Index (EMPI), and had one full-time employee.

At the end of the cooperative grant period on March 14, 2014, the HITE-CT had bought two assets: a Provider Directory (PD) and an Enterprise Master Patient Index (EMPI) and had one full-time employee. They had spent 4.3 million over the course of the cooperative agreement. The PD was deployed in a very basic development environment with a potential customer in Department of Social Services (DSS). A use case for the EMPI is still to be defined, though HITE-CT may be able to make their case to deliver services to Access HealthCT which is currently in need of both a PD and an EMPI. HITE-CT had signed a contract with DSS ending on June 30, 2014 to deliver a standards-based Health Provider Directory.

HITE-CT Board Membership, Committees, and Contribution

- The board was designed to have 20 seats, though actual board membership varied throughout the timeframe of this analysis, due to changes in administration and resignations. At the start of HITE-CT operations in January of 2011, there were 19 active board members and 1 vacant seat for the representative of primary care physician whose practice utilizes EHRs. By October 2013, there were a total of 6 vacant seats on the board representing 5 resignations and 1 which was never filled.
- Five standing committees were adopted with a minimum of two board members required to serve on each and an Executive Committee.
    - Legal and Policy: Ms. Boyle (Chair 1) & Mr. Lynch (Chair 2)
    - Business and Operations: Mr. Lynch (Chair) & Dr. Agresta
    - Technical: Mr. Courtway (Chair) & Dr. Agresta
    - Finance: Mr. Carmody (Chair) & Mr. Carr
    - Special Populations: Mr. Masselli (Co-chair) & Ms. Kelley (Co-chair)
    - Executive Committee: Comprised of the Chair, Vice Chair/Treasurer, Secretary, and the Chairs of the standing committees

Internal Collaboration

- Overall, HITE-CT respondents represented low integration levels (networking and cooperating) in their reflection of HITE-CT's purpose. However, in regard to its strategies, leadership and decision-making, and interpersonal communication, almost half the respondents rated HITE-CT's integration at the higher levels of partnering and merging.

- Most state agency representatives took a back seat when it came to early decision making on the board. Bureau of Enterprise and Systems Technology (BEST) was the most involved of the state agencies (17 motions) followed by DPH (7 motions) within the first 26 months.
- The most active seats in the first 26 months of the board were the insurer/representative of a health plan making 32 motions and the representative of a large business group made 19 motions. There was high reciprocal support between these two board members.
- Public representatives had the most dissention when it came to HITE-CT decision making. Three of the seven oppositions from the first 2.5 years of HITE-CT operations concerned the consent model.
- In the period of third chairmanship, DSS was the most active state agency with regards to initiating HITE-CT decision making (10 motions) and had the most supportive ties (3).

External Collaboration

- A '3C3 Team' was organized to emphasize the importance of communication, collaboration and cooperation between HITE-CT, DPH, DSS, eHealth Connecticut and Capital Community College, all recipients of ONC funds. Though interagency stakeholder meetings were held with the intention to leverage each other's strengths, little collaboration occurred after the Connecting Connecticut conference in October 2011.
- Axway Partnership
    - In October of 2012, all work related to the Axway contract ceased.
    - In January of 2013, Axway filed a lawsuit against HITE-CT for breach of contract.
    - No work was accomplished for over one year.
    - A new contract was agreed upon and signed in December 2013, at which point all charges against HITE-CT were dismissed. This new contract includes services for a provider directory and enterprise master patient index.
- Rhode Island Quality Institute Partnership
    - After just 5 months of a partnering with HITE-CT, RIQI canceled its contract in November of 2013. This was a significant loss for the agency as this collaboration would have helped HITE-CT stand DIRECT, which was the primary requirement of ONC. This withdrawal of support was indicative of the lack of faith in HITE-CT's viability.

Structural Challenges

- One challenge the board faced was figuring out how to effectively work within the confined nature of the quasi-public agency structure.
- Though some board members found the composition of the board impressive, many raised concern about need for broader representation.
- Declining membership was also a problem that exacerbated the challenge for sufficient constituent representation. The first board resignation came 4 months into HITE-CT operations.
- As membership continued to decline, it became challenging to meet quorum.

- The resignations of Chief Executive Officer, Mr. Gilbertson in August of 2012 and Chief Technical Officer, Mr. DeStefano in November of 2013 placed significant challenges on leadership and operations of HITE-CT.

Financial Challenges

The December 2010 business model that the board adopted required significant sales revenue. Hence, from the onset, HITE-CT was faced with the challenge of building a robust business model to support its operations, as federal funding for the initiative was time limited and state funding to support HIE development and operations was absent.

> *We should at least look at the money we have coming from ONC and say, what do we absolutely need to satisfy to do some of the functions that are not going to be the vendor that we're going to select? … I think that we're going into this (*vendor selection*) without enough information. … it's been worrying me because I know that the amount of money isn't that great and I can't believe that we're just going to hire a vendor and the vendor is going to do everything and there's not going to be any need for anything else. So that's my anxiety level right now being a member of this Board. (*04/18/11 Board of Directors Meeting)

Technical Challenges

The vendor solution developed didn't meet needs of the intended major customer base. Additionally, the vendor was unwilling to negotiate a reduced scope of services and had no capacity to implement Direct messaging protocol. Though hospitals and physicians agreed on the concept of a statewide HIE, the technology needed to be developed precisely for intended client needs and budget. The failed business model is explained below:

> *It didn't work and it didn't work for a number of reasons….And the customers, although they did say they think it's a good idea, I don't think you would go to anybody in the state, a hospital provider, anybody who would say that this is not a good idea. But the return on investment was the issue and the model that came forward from HITE/CT was not a model that they were comfortable with…. Although you can plug into what we had put up in the cloud pretty easily, because it is all based on standards, the market in general wasn't really ready. There aren't that many hospitals in the state who are ready to do this, frankly there are very few. And from the provider office perspective and the large providers, again, there are very few who are really ready to do this... In Connecticut, we have a ways to go in our marketplace before we're really ready to move forward with this.* (08/07/13 Board of Directors Meeting)

Legal Challenges

HITE-CT found itself in contracts that were binding and had difficulty re-negotiating contracts with the vendor as well as DPH. Some of this was due to inexperience and some was due to early reliance on interim contractors making critical technological and operational decisions.

Governance Challenges

- While some members appreciated the leadership role that DPH initially took, some thought from a business perspective that DPH wasn't the right fit to lead HITE-CT.
- One area where leadership was noticeably lacking was in the formation of a Business and Operations subcommittee. Though a solid business plan was critical for the success

of HITE-CT, the committee was never assembled. HITE-CT CEO, Mr. Gilbertson emphasizes the importance of assembling this committee at his second board meeting:

> *This committee will be the nuts and bolts of how this thing is actually going to work beyond the technology. So, you've got the technology and then what do you do with the technology and how do you manage it? And that's the Business and Operations Committee, otherwise we'll have a really nice technology but nobody will know what to do with it.* (12/19/11 Board of Directors Meeting)

The need to assemble this committee was raised several times, though a group was never successfully brought together:

> *That's been our problem; we haven't been able to get this Operational Committee to operate.* (04/16/12 Board of Directors Meeting)

- Some members felt that decision making on the board was an insular process and that not only minor, but important decisions were being made behind closed doors. This perspective was expressed during a discussion concerning the hiring of the CTO without a benefits package in place:

> *I didn't know we'd (decided) that. That's kind of my issue is that a lot of things get done here, and maybe it happens in the Executive Committee, but that's a really important question to me. I'm an advocate for people who don't have health insurance. I would have been paying attention to that and I feel that that decision was taken away from me because we've already done it. I'm concerned that if we go forward now that that will just be the way it's done, and then it will be, you know, 'you're just trying to slow things down'.* (04/16/12 Board of Director Meeting)

- Just six months from the end of funding, in October 2013, the need for a new sustainability model for HITE-CT was addressed by the creation of the Sustainability Work Group. Though, a new plan was imperative for HITE-CT operations to continue, the group only assembled once, and though priorities were identified, no specific recommendations were made to the board from this group.

Interpersonal

Public representatives were concerned with the conflicts of interest on the board, which led to feeling of mistrust, and fear that members would be unduly influenced by personal interests.

Consumer and Public Education

The HITE-CT consent model was a highly contested issue. The initial consent model recommended by the Health Information Technology and Exchange Advisory Committee (HITEAC), as described in the 2010 Strategic and Operational Plan, was based on,

> *"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 HITEAC deliberately refrained from using the terms 'opt-in' and 'opt-out' "in order to avoid confusion and to focus on the functions of the HIE as it relates to patient consent*."

Though the consent model was consistent with current federal and state confidentiality laws and regulations, the decision to not identify it specifically as an opt-out policy, lead to confusion.

Sustainability

Early on in HITE-CT operations, board members expressed fears that HITE-CT would not succeed. Prior to any contract issues or failed initiatives, the perceived sustainability of the CT-HIE over the next ten years was moderate at best.

> "*Timing may mean everything; we may not have staying power.*"
> In the next 20 years, HIE "*will become a utility, just like power.*"

Future of HITE-CT

As summarized by a board member:

> *I mean when we started this effort off, we had a handful of core assets that we were going to be able make available to the marketplace. Long story short…we don't really have any customer base or client base that is calling for those assets to be enabled. So that was going to create the sustainability. So then the question that I would have is, how does the state look at the assets that we have or we will retain after we resolve some of our outstanding issues with some of our vendors, and how does that fit in to that overarching architecture? At this point if we don't have a major grouping to handle that, which was basically for all intents and purposes the hospital system, if the hospital systems don't see us as wanting to come and shop at our doorstep, where are we looking to take these assets and enable them within state architecture? And if not, then I guess we have to look at ourselves and say…"We don't have a sustainability model. We don't have a client base, and we're not getting contributions from the state that fund what we needed of these assets and incorporated into a state architecture." Unfortunately, I think it's time to talk about you unwind where we're at.* (10/01/13 Board of Directors Meeting)

Our final recommendations include:

The board should be comprised of experienced members free from perceived or actual conflicts of interest and those who are willing to attend meetings in person. No seats on the board should be left vacant for more than a quarter.

HITE-CT should create a viable and realistic business model and develop use cases that are attractive to its customer base.

Need to engage the public through education and outreach.

What are the pharmacies telling us about e-prescribing?

We received 73 responses in 2011 and 216 in 2013 based on surveys administered to licensed pharmacies in Connecticut to measure e-prescribing adoption rates among community pharmacies, gather pharmacists' opinions regarding the impact and value of e-prescribing, and gauge awareness of activity surrounding CT-HIE.

The proportion of pharmacies utilizing e-prescription systems in 2013 (96%) was significantly higher in comparison with 2011 (80%).

E-prescribing activities increased from 2011 to 2013 among pharmacies and prescribers. 96% of the pharmacies were enabled for processing e-prescriptions and 62% of the prescribers were e-prescribing. Independent pharmacies were more likely than chain/franchise pharmacies to indicate prescription transaction fees, low prescriber activity and maintenance costs as barriers to implementing e-prescribing.

Descriptive Characteristics of Pharmacies

- More than 70% of survey respondents represented pharmacies in towns categorized as urban periphery or urban core in 2011 and 2013.
- 59% of the responding pharmacies characterized themselves as independent in 2011 while 46% characterized themselves as independent pharmacies in 2013.
- Almost 64% of pharmacies reported Medicare as the most prevalent form of insurance utilized by customers, followed by private insurance, Medicaid and self-pay.
- A large proportion of survey respondents indicated an average daily prescription volume of 101 to 300 prescriptions with 60% of pharmacies indicating this volume range in 2011 and 54% in 2013.

Significant Changes between 2011 and 2013 in Methods of Receiving Prescriptions

- The proportion of pharmacies utilizing e-prescription systems in 2013 (96%) was significantly higher in comparison with 2011 (80%).
- There was a decline from 2011 to 2013 in the use of interactive voicemail (48%, 33%).
- The proportion of pharmacies that received new and/or renewal prescriptions by paper increased significantly from 85% in 2011 to 97% in 2013.

Level of Understanding

- Slightly more than half of respondents reported a deep understanding of e-prescribing in 2013 compared with 33% in 2011.

Prescribing Activity

- The proportion of e-prescribing activity among prescribers increased from 2011 to 2013, with 62% reporting more than half to all prescribers in the area as e-prescribing in 2013 versus 22% reporting this percentage range in 2011.
- The proportion of pharmacies enabled in 2013 (96%) was greater than the proportion who were enabled in 2011 (86%).

Influence of e-Prescribing on six IOM Domains

- From 2011 to 2013 there appeared to be a general shift from positive responses to more neutral responses, or occasionally, more negative responses regarding the influence of e-prescribing over pharmacy practice.
- Fewer respondents in 2013 reported potential positive influence of e-prescribing on their pharmacy practice in comparison to 2011: Efficiency (82% vs. 86%), Patient Safety (60% vs. 82%), Patient-Centeredness (46% vs. 70%), Effectiveness (71% vs. 78%) and Timeliness (72% vs. 75%).
- The Equity domain saw the largest drop with 58% of respondents indicating positive influence in 2011 versus 31% in 2013.
- Based on the 33 pharmacies that responded to both surveys, the 2013 survey respondents were more likely to respond with neutral and negative responses for the IOM domains of Patient Safety, Patient Centeredness, and Equity than they did in 2011.

Barriers to e-Prescribing

- In 2011, the three leading barriers to e-prescribing as indicated by survey respondents were low prescriber activity (38%), prescription transaction fees (36%) and maintenance costs (33%).
- In 2013, the three leading barriers indicated were bugs in the e-prescribing process (38%), potential for an incomplete patient medication list (27%) and poor network connections in the area and/or network costs (21%).
- Of the 44 respondents that shared other barriers in 2013, more than two thirds reported various data entry issues as barriers to e-prescribing and 41% feel prescribers are not trained properly on the e-prescribing software.
- Independent pharmacies were more likely than chain/franchise pharmacies to indicate prescription transaction fees, low prescriber activity and maintenance costs as barriers to implementing e-prescribing.

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In 2013, the three leading barriers were bugs in the e-prescribing process (38%), potential for an incomplete patient medication list (27%) and poor network connections in the area and/or network costs (21%).

Types of Pharmacy Transactions

- 100% of enabled pharmacies reported processing new prescriptions electronically in 2011 compared with 98% in 2013.
- 89% of the enabled pharmacies reported processing renewal prescriptions electronically in 2011 compared with 96% in 2013.
- Fill notifications to prescribers (37% vs. 26%) and medication history send/receive (25% vs. 6%), decreased in prevalence from 2011 to 2013.

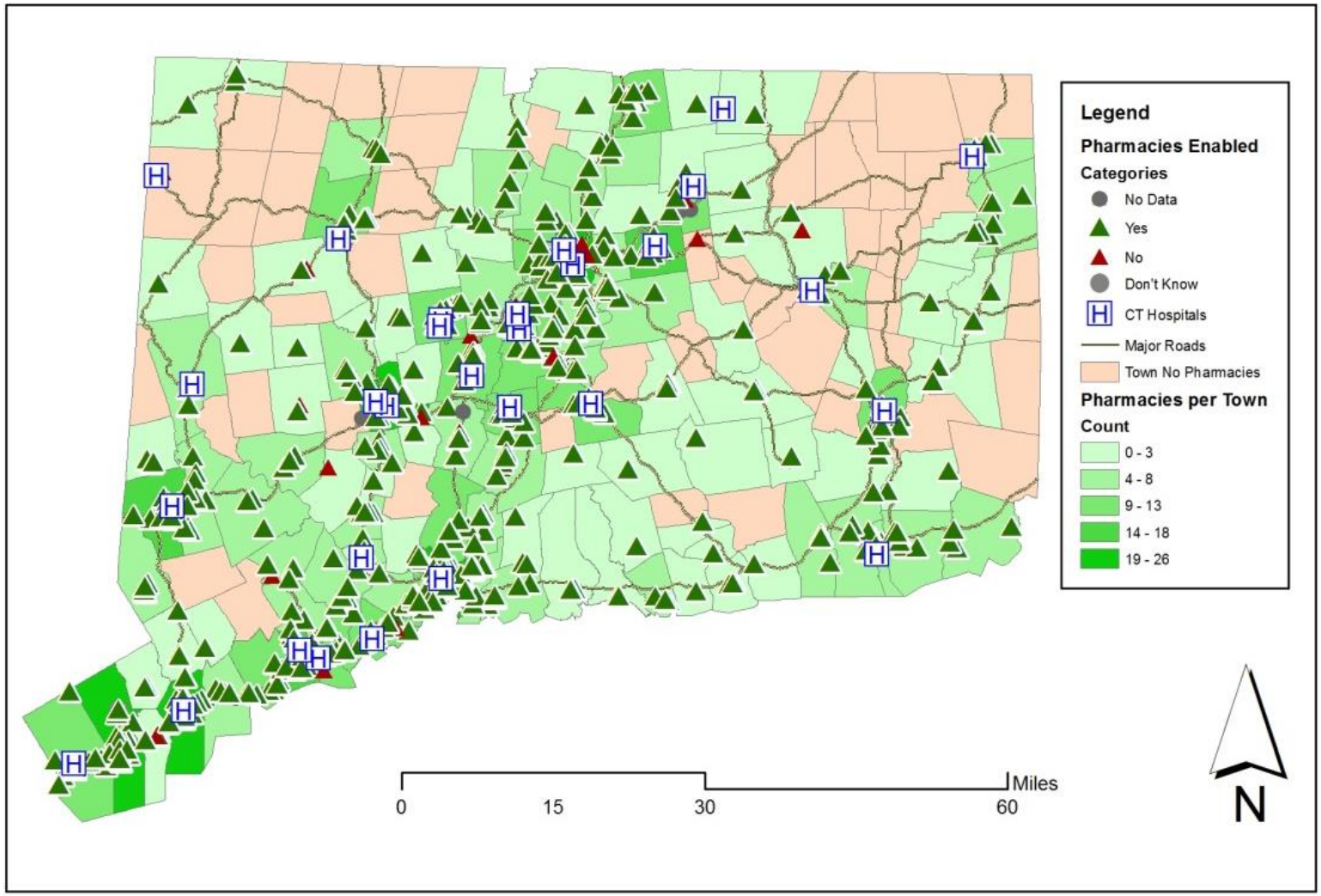
Knowledge of e-Prescribing Standards and Terminology

- In 2013 three out of five pharmacies reported using the Surescripts network for e-prescribing. This is most likely an under-representation by our survey respondents, since our Surescripts data files indicate that 93% of independent pharmacies and 99% of chain pharmacies were activated on the Surescripts network by the end of 2013.
- Mostly respondents were unaware of whether or not the pharmacy paid transaction fees (57%), used standards (40%), had a system compatible with HL7 messaging standards (90%) and used standard terminology (89%).

Awareness of Health Information Exchange

- The majority of respondents indicated no familiarity with CT-HIE (70% in 2011 and 74% in 2013).
- 57% of pharmacies indicated sending electronic transactions to physicians, physicians' assistants and nurse practitioners in 2011 compared with 82% in 2013.

Pharmacy Locations



What are the laboratories telling us about structured data?

We received 58 responses in 2011-12 and 34 responses in 2013 to statewide surveys administered to licensed laboratories in Connecticut that were classified as hospital-based or independent laboratories by the Centers for Disease Control. These 92 surveys represent 66 unique labs. The goal of the survey was to measure the extent of lab interoperability, measured by the percent of labs sending electronic lab results to providers in a structured format and the adoption of LOINC terminology.

In 2013, 63% of the Connecticut's hospitals were sharing lab results electronically which is higher than the national average of 56%. This represents a significant decrease from 77% in 2011-12. 50% of the independent labs were sending lab results electronically in 2013, an increase from 37% in 2011-12. Due to the low number of labs that responded to our survey, the results should be interpreted with caution.

Location

- In 2013, Hartford and New Haven counties accounted for 64.7% of the labs and urban-periphery and urban-core represented 82.4% of the labs that responded to our survey.

Type of Laboratory

- In 2011-12 survey, responding labs were almost equally divided between hospital (53%) and independent (47%) labs. In comparison, the majority (71%) of labs surveyed in 2013 identified themselves as hospital-based and 29% identified themselves as independent.

Laboratory Volume

- Almost half the respondents (45.0%) accounted for up to 499,999 billable tests per year in 2011-12 compared to 59% in 2013.
- The number of physician practices submitting orders to the surveyed labs ranged from 0 to 1,000 practices, with a median of 45 practices.
- About a third of labs (35%) reported that over 100 physicians submit orders to them.

Electronic Capabilities

- In 2011-12, 57% of laboratories surveyed sent results in structured format to ambulatory providers outside of their organization compared to 59% in 2013.
- The percentage of laboratories sending laboratory results to web portals was 24% in 2011-12; this increased to 33% of labs in 2013.
- In 2011-12, 34% of laboratories reported sending final laboratory results to EHRs; this decreased to 30% of labs in 2013.

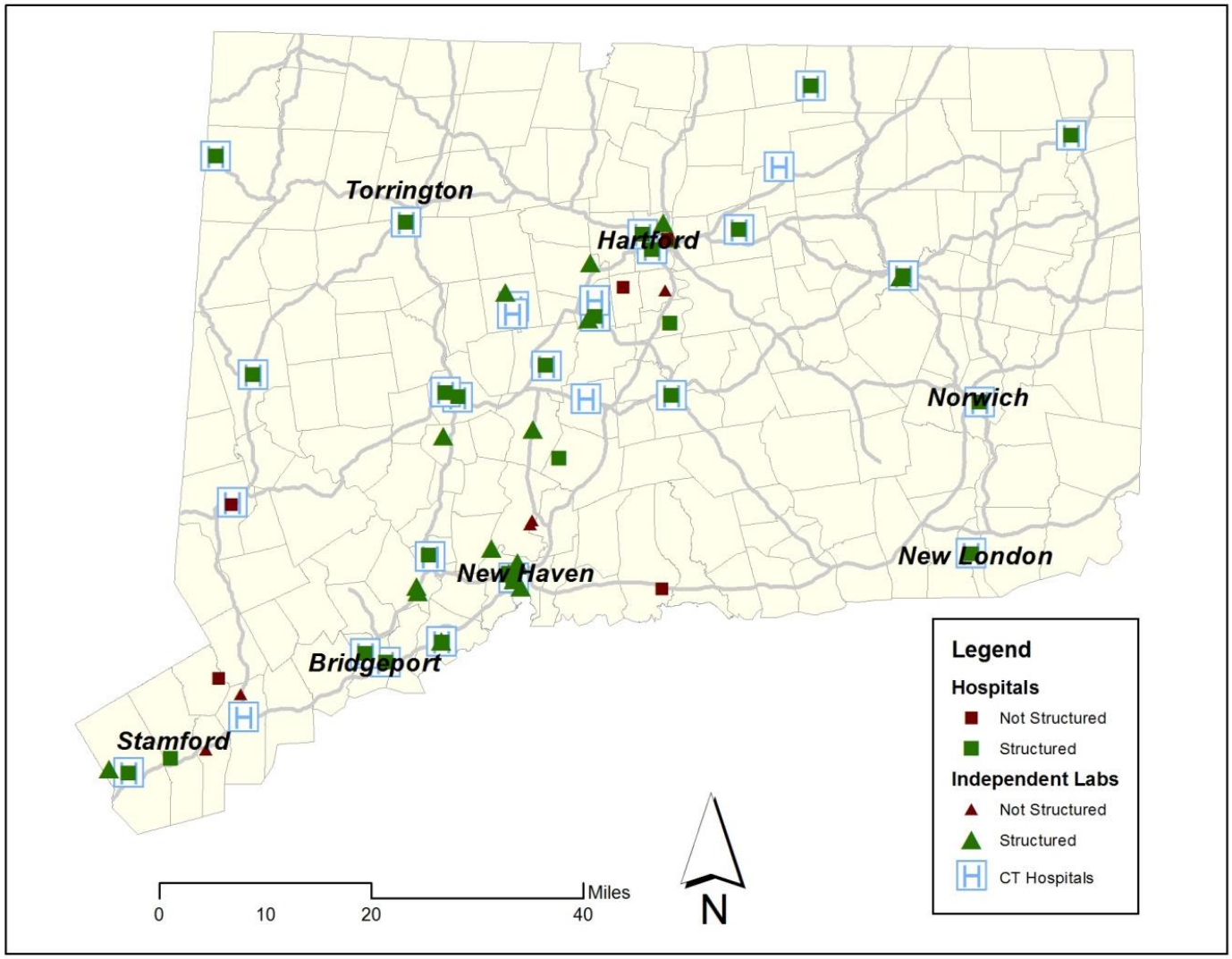
Adoption of Standards

- LOINC - In 2011-12, only 10.3% of the labs were sending results to ambulatory providers using LOINC standards, this increased to 27% in 2013. Of these, 2% of labs sent all of their lab results to ambulatory providers using LOINC in 2011-12; this increased to 12% in 2013.
- LRI Guide - In 2011-2012, 38% (35% did not know) of labs had not implemented the LRI Guide, compared to 68% (29% did not know) of labs in 2013.
- HL7 - Use of any HL7 version increased from 22% of respondents in 2011-2012 to 41% in 2013. In 2011-2012, 71% of labs did not know whether they used HL7 standards; this decreased to 47% of labs in 2013. Two labs reported that they used both HL7 version 2.5.1 and HL7 2.3.1 in 2011-2012.
- Direct messaging – In 2013, only 9% (N=3) of the laboratories mentioned using Direct messages for sending lab results while 82% of laboratories (N=27) reported not using Direct messaging.

Differences in Electronic Reporting By Lab Affiliation, Volume, and Socioeconomic Grouping

- In 2011-12, 77% of hospital labs sent structured electronic results compared to 63% in 2013. This compares with 37% of independent labs in 2011-2012 and 50% in 2013. This difference was statistically significant, that is the proportion of hospital labs with electronic capability was significantly higher than independent labs during 2011-12, but not in 2013.
- Labs that processed a higher volume of tests were more likely to send results electronically. In 2011-2012, 80% of labs receiving over one million billable tests per year sent results electronically.
- In 2011-12, 52% of independent labs processed fewer than 100,000 billable tests annually compared to 16% of hospital labs. This difference is significant and held for 2013.

Location of hospital-based and independent labs that send structured data



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KPMG

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State of Connecticut
Integrated Eligibility Working Group
Tier IV Overview

April 25, 2014

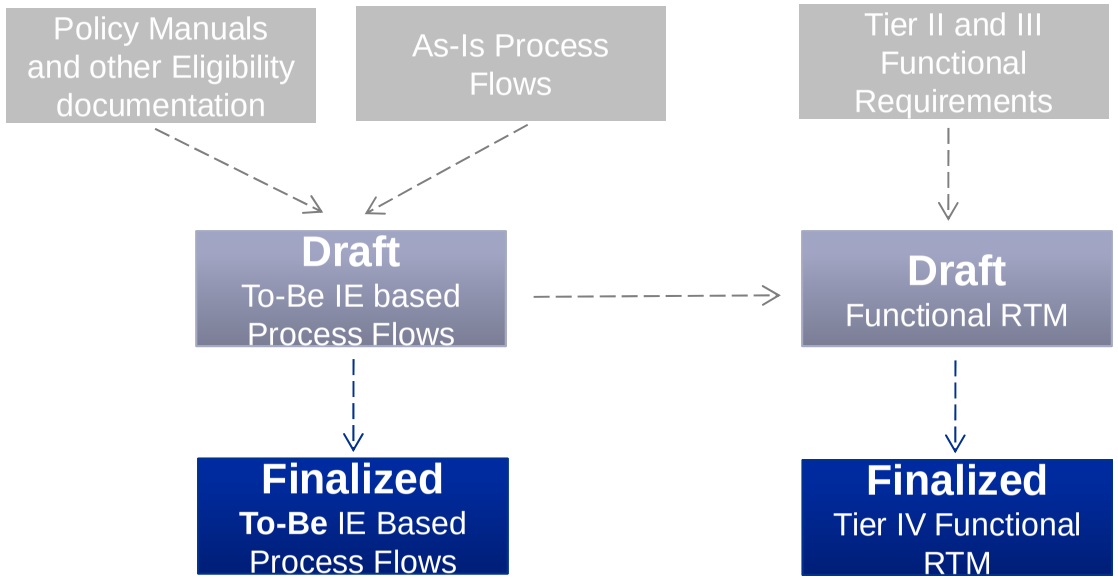
DRAFT – For Discussion Purposes Only

Agenda

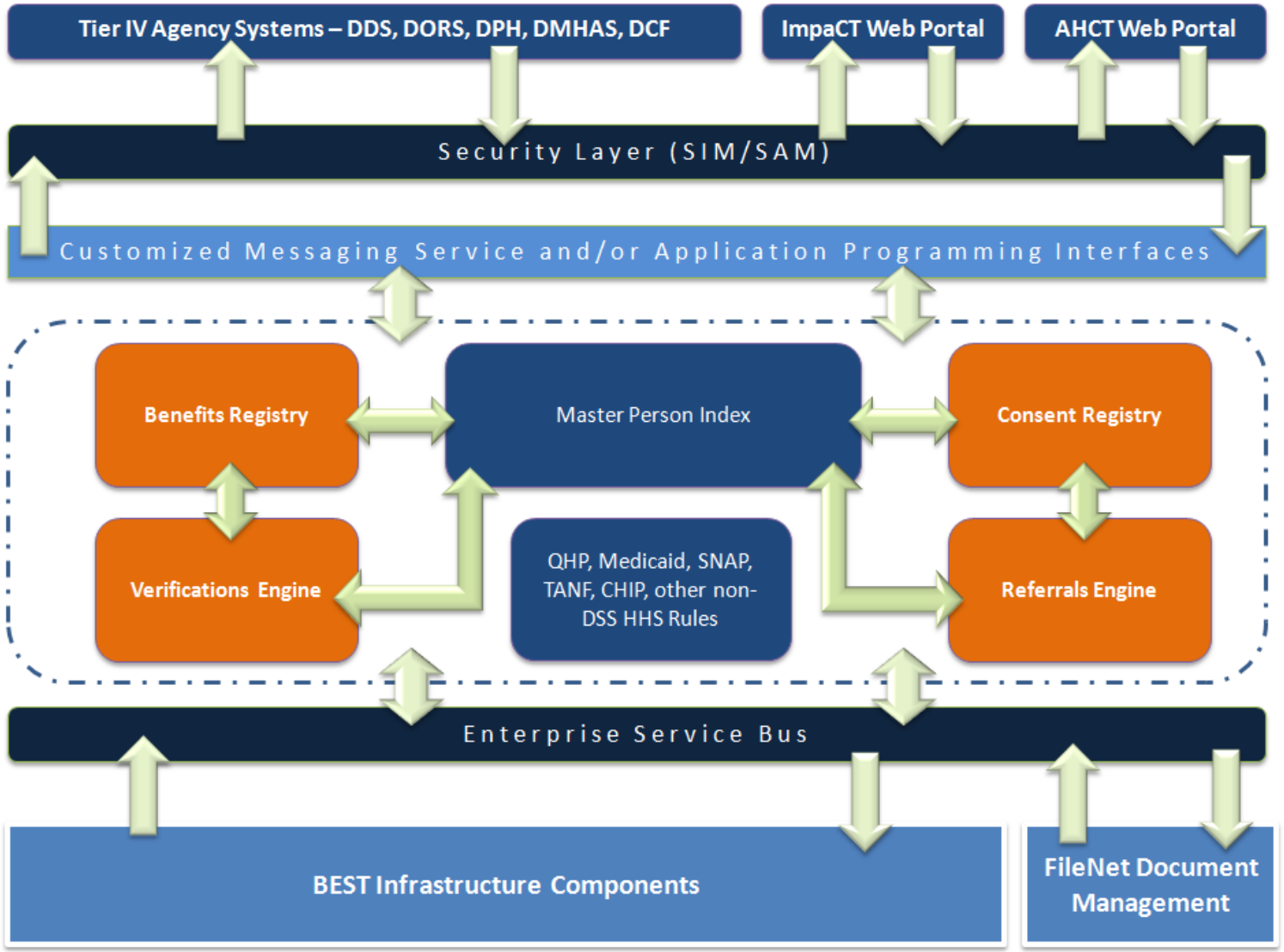
- Tier IV Summary of Activities
- Envisioned Tier IV Architecture
- Tier IV Vision Components
- Tier IV Considerations
- Request for a Common Portal / Front End
- Tier IV Status
- Next Steps
- Q&A

Tier IV Summary of Activities

- **As part of the Tier IV Phase, KPMG:**
  - Conducted **48** Business Process Analysis and Requirements Gathering Work Group Sessions
  - Produced **34** As-Is and To-Be Business Process Flows capturing Tier IV Agency Programs' Eligibility and Intake processes and use of common set of envisioned Tier IV components & services.
  - Produced a draft Requirements Traceability Matrix capturing agency program needs.



Envisioned Potential Tier IV Architecture



Tier IV Vision Components

▪Tier IV envisions a set of common services offered through the IES infrastructure maintained at BEST to the agencies in scope (DPH, DDS, DORS, DMHAS, and DCF). The "core" Tier IV components envisioned are:

1. Client Data – The following services on the IES provide a holistic client profile for CT HHS Agencies:

- **Master Person Index (MPI) –** Ability to share and update MPI data across agencies (per security and data sharing agreements and the governance structure) to verify the identity of the clients.
- **Referrals Engine –** Ability to initiate referrals to other Tier IV agencies through a messaging service based upon the client's approval (through the Consent Register) to apply / consider for other non-DSS / AHCT programs with Tier IV agencies.
- **Verifications Engine –** Ability to share already performed verifications through a messaging service to Tier IV agencies for their consideration, or accessing existing verification services. In addition, linking the MPI identifier to the individual's verification to provide a consolidated client profile.

(Cont'd)

Tier IV Vision Components (cont'd)

- **Benefits Register–** Ability to track and maintain a view of a particular client, with their eligibility determinations, program enrollments and terminations, and their associated dates. This would further assist with eligibility determination for other Tier IV agency programs.
- **Consent Register –** Ability to track and maintain client permission to share their information with different Tier IV Agencies and Programs for specific services.

2. Infrastructure

- **BEST Infrastructure –** Ability to leverage existing BEST infrastructure components like IBM's SIM/SAM, ESB, FileNet, etc. to accommodate the data sharing needs of Tier IV agencies.
- **AHCT & ImpaCT Systems –** Minimal configurations or changes to the AHCT & ImpaCT systems for clients to elect into "referrals", data sharing, etc.

Tier IV Considerations

Tier IV Requirements gathering sessions noted the below Agency and Program considerations:

1. Need for centralized data management and governance policies. Direction around MPI content and data quality for client record disparities.
2. Need for robust security policies, business rules and data access permissions to access multi-Agency data.
3. Disparity in Agency and Program sizes, client volumes, and agency resources, resulting in challenges around a uniform approach or solution.

Request for a Common Portal / Front End

1. A common portal or front end (client portal & a professional portal) for managing Tier IV functionality, especially for smaller Agencies and Programs that may be using tools such as Excel or Access for their data management.
2. Ability for clients to initiate self-referrals to Agencies and Programs through the common portal.
3. Ability to pre-screen individuals for program eligibility based on configurable business rules and/or algorithms and proactively reach out to such individuals.
4. Ability to track referrals, verifications, and client record discrepancies using workflow items, based on configurable business rules and security permissions.
5. Ability to report on referrals, verifications, and client records.

Tier IV Status

Business Process Flows Documentation:

Approving Agency	As-Is Drafted	As-Is Approved	To-Be Drafted	To-Be Approved
DDS	✓	✓	✓	✓
DORS	✓	✓	✓	✓
DPH: WIC	✓	✓	✓	✓
DPH: Cancer Programs	✓	✓	✓	✓
DMHAS	✓	✓	✓	✓
DCF	✓	✓	✓	✓

Requirements Documentation:

- **Preliminary draft of Requirements Traceability Matrix (RTM) has been drafted and shared with Tier IV stakeholders.**

Next Steps

- **Tier IV Agencies – Review the Requirements Traceability Matrix that was sent to the agency SPOCs and provide comments.**

- **KPMG - Incorporate Agency feedback into Tier IV Requirements Traceability Matrix.**

- **KPMG – Submit the Final Tier IV Requirements and Business Process Documentation deliverable.**

Questions

Q & A

cutting through complexity™

Thank You

Connecticut Department of Social Services
Making a Difference

DSS IT Capital Investment Briefing

September 11, 2013

1

Contents

Connecticut Department of Social Services
Making a Difference

ConneCT (Modernization of Client Service Delivery)

and

Health Insurance Marketplace/Integrated Eligibility Project

(Access Health CT/IEP) – Tiers 1, 2, 3, and 4

2

ConneCT Project

Connecticut Department of Social Services
Making a Difference

Project Overview

Purpose: The DSS ConneCT project will modernize the agency's existing infrastructure with the implementation of a Modernization of Client Service Delivery (MCSD) solution utilizing three (3) specific technologies: Internet-based Client Access and Web Services, Document Scanning and Work Flow Management, and Interactive Voice Response (IVR) and Call Center Services. These technologies will be integrated with our existing eligibility legacy system known as EMS. These functionalities will increase the efficiency and effectiveness in how DSS serves its customers.

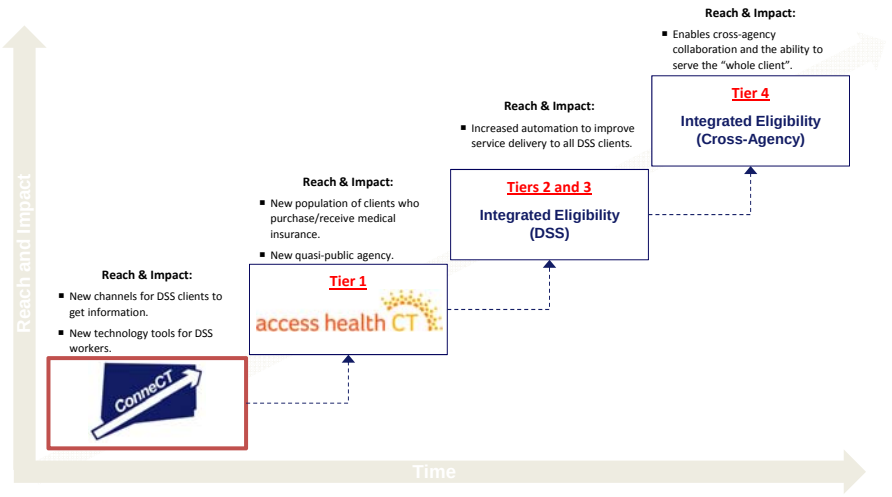
Status of Project: As of December 31, 2012, two of the project's seven releases have been built and fully tested. These two releases feature Client Accounts and Pre-Screening functionality. In addition to Client Accounts and Pre-Screening, the state has completed the installation and configuration of approximately 95% of the new ConneCT Solution Platform.

Project Timeline: 07/01/11 - 10/01/13

3

Achieving Incremental "Wins" for DSS and Connecticut

Connecticut Department of Social Services
Making a Difference



These projects build on each successful milestone to increase reach and impact.

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Objectives - ConneCT

Connecticut Department of Social Services
Making a Difference

Improve Client Access
- Anywhere/anytime access via web services.

Achieve Better Quality Outcomes
- Makes processes faster and more efficient by reducing "back and forth" and generation of paper.

Enhance Customer Service
- Empowers workers with tools to help clients.
- Increases the number of workers who can help a client.

Reduce Costs
- Reduces the need for paper (and associated storage costs).
- More efficient retrieval of documents.

Provide a Technological Framework for the Future
- Integrated technologies support the business and allow for expansion.

Through ConneCT we are using technology to generate positive business impact.

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Building a Technological Framework for Future - ConneCT

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	Technical Milestone	Benefit to DSS and Connecticut
✓	Built and deployed new server infrastructure at BEST Data Center.	Allows to BEST to host a modern web-based system for DSS.
✓	Installed new telephone system at BEST and at three DSS offices.	Single, centralized telephony platform enables a state-wide workforce and provides redundancy.
✓	Installed new optical fiber network.	Enables high-speed connectivity between the BEST data center and DSS benefit center offices to support voice and data.
✓	Installed 700 new telephone lines at the BEST Data Center.	Allows DSS customers to reach DSS via a central location and access telephony services.
✓	Deployed new web-based software platform.	Provides modern, web-based systems for DSS clients and DSS workers to use.
✓	Installed leading COTS products including Rules Engine and Document Generation Software	Provides modern, web-based systems for DSS clients and DSS workers to use.

Extensible technical products support DSS now and in the future.

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Release Update and Timelines- ConneCT

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	Functional Overview	Status / Target Date
Client Accounts	Provides secure, anytime access to generic and case-specific information to clients via the Internet.	**Currently Live** (http://connect.ct.gov)
Pre-Screening	Allows clients to independently check for potential eligibility online without having to visit or call DSS.	**Currently Live** (http://connect.ct.gov)
Interactive Voice Response (IVR)	Provides secure, anytime access to generic and case-specific information to clients by phone.	**Currently Live**
Document Management and Workflow	Reduces the need for paper-based processing and provides centralized access to documents and visibility into document status.	**Currently Live**
Benefit Center	Provides a centralized, consistent enterprise system for receiving and servicing incoming calls.	**Currently Live**
Online Application	Allows clients to apply online and provides a dynamic verification checklist to clearly explain what verification is required.	September 2013 (beta)
Change Reporting and Online Redeterminations	Allows clients to report changes and conduct redeterminations online.	October 2013

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ConneCT Telephony – Benefit Center Model

Connecticut Department of Social Services
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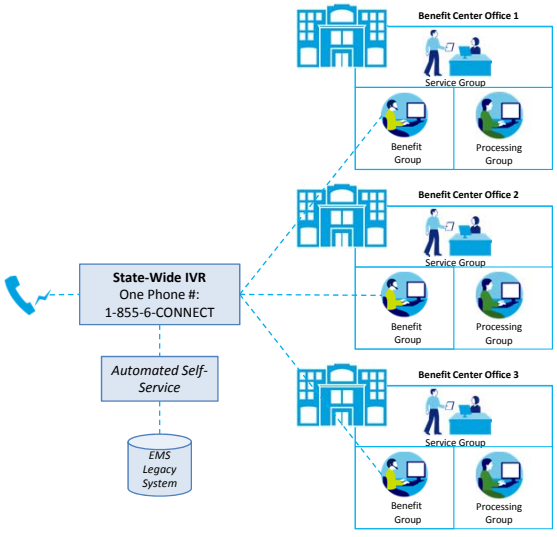

Key Features:

- Web Services Make Legacy Data Available for Self Service
- Benefit Centers are Redundant
- Licenses Float Between Offices
- Remote Agent Capability.

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A Closer Look…
CT Benefit Center

Connecticut Department of Social Services
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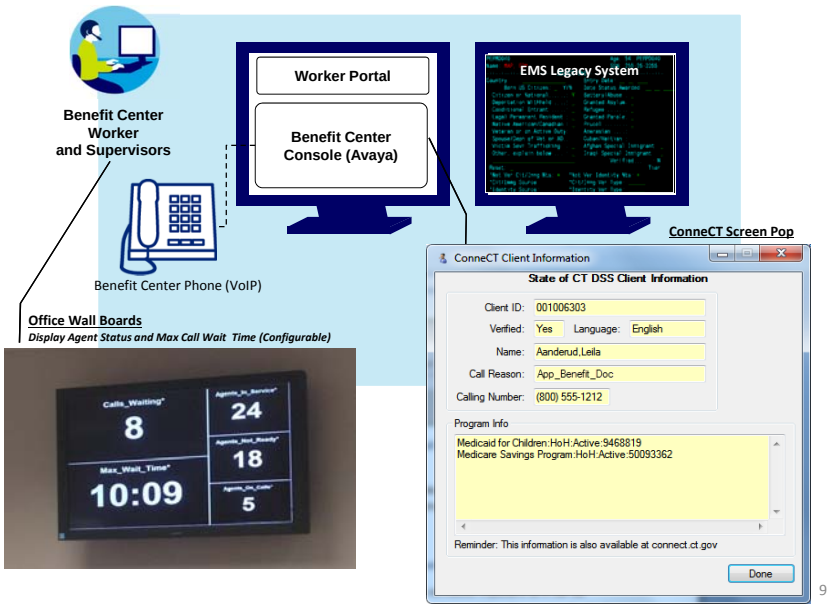

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A Closer Look…
CT Document Management and Workflow

Connecticut Department of Social Services
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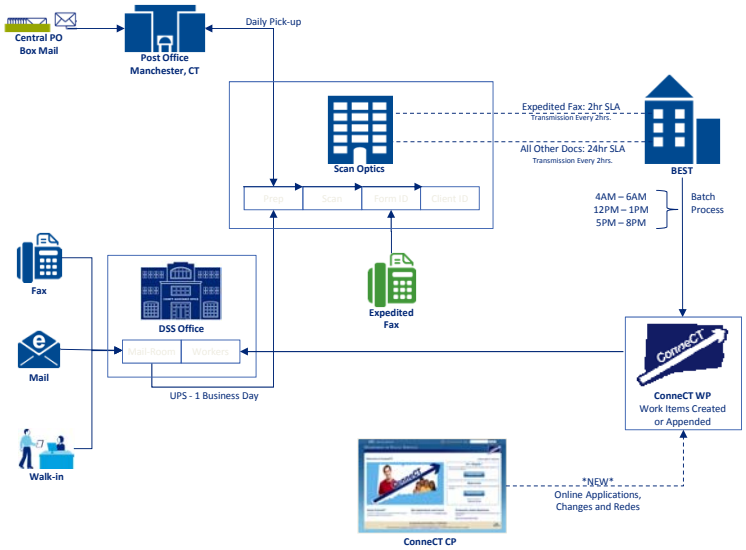

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A Closer Look…
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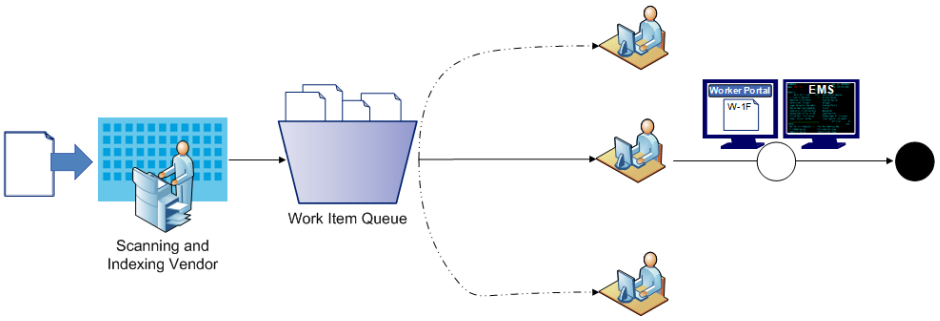
Connecticut Department of Social Services
Making a Difference



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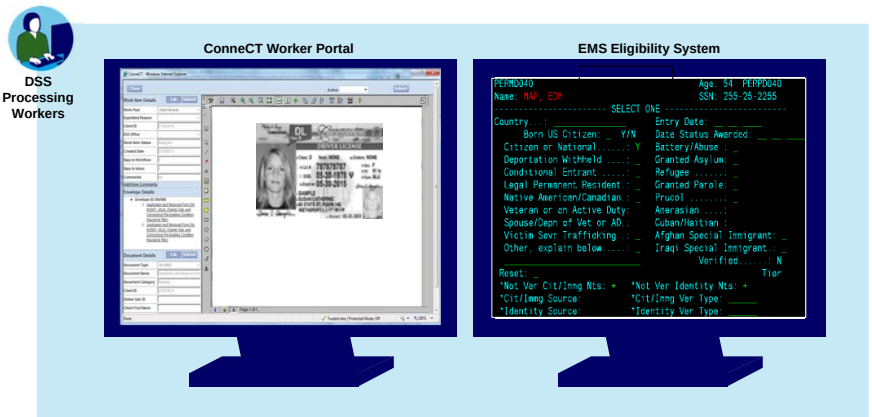
A Closer Look…
CT Document Management and Workflow

Connecticut Department of Social Services
Making a Difference



ConneCT Document Management and Workflow – Enabling Real-Time Document Tracking

Connecticut Department of Social Services
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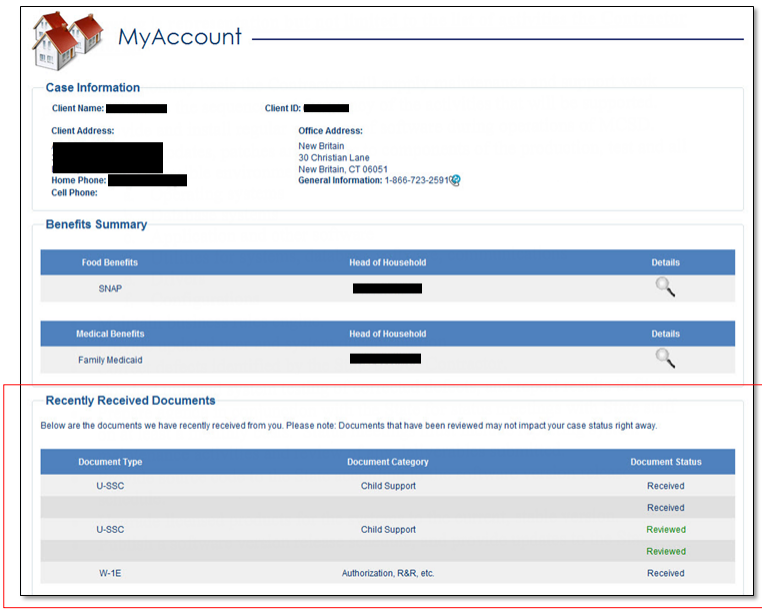

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ConneCT Modification Releases (Draft Plan)

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Release	Release Name and Functionality	Phase	Stakeholders Required	Start Date	End Date	Status
3.0	**ConneCT Release 6/7:**	Design	Deloitte / DSS	n/a	n/a	Complete
	-Online Application	Development	Deloitte	n/a	n/a	Complete
	-Report a Change	System Test	Deloitte	n/a	n/a	Complete
	-Online Redetermination	UAT	Deloitte / DSS	n/a	n/a	Complete
		Staging	Deloitte	8/28/2013	9/3/2013	
		Production	BEST / Deloitte	9/4/2013	9/4/2013	
3.1	**ConneCT Changes for HIX (October)**	Design	Deloitte / DSS	n/a	n/a	Complete
	-Includes selected (deferred)	Development	Deloitte	8/19/2013	9/6/2013	
	defects/changes from R6/R7	System Test	Deloitte	9/9/2013	9/13/2013	
	-Includes selected R5 (doc mgmt /	UAT / System Test Vali	Deloitte / DSS	9/16/2013	9/20/2013	
	workflow) related defects	Production	BEST / Deloitte	10/1/2013	10/1/2013	
3.2	**ConneCT Changes for CIA Part I**	Design	Deloitte / DSS	8/12/2013	8/30/2013	In Progress
		Development	Deloitte	9/3/2013	9/27/2013	
		System Test	Deloitte	9/30/2013	10/11/2013	
		UAT / System Test Vali	Deloitte / DSS	10/14/2013	10/25/2013	
		Production	BEST / Deloitte	11/5/2013	11/5/2013	
4.0	**ConneCT Changes for HIX (December)**	Design	Deloitte / DSS	9/2/2013	9/13/2013	
		Development	Deloitte	9/16/2013	10/25/2013	
		System Test	Deloitte	10/28/2013	11/8/2013	
		UAT / System Test Vali	Deloitte / DSS	11/11/2013	11/22/2013	
		Production	BEST / Deloitte	12/6/2013	12/6/2013	
4.1	**ConneCT Changes for HIX (January) +**	Design	Deloitte / DSS	9/23/2013	10/4/2013	
	ConneCT Changes for CIA Part II	Development	Deloitte	10/21/2013	11/15/2013	
		System Test	Deloitte	11/18/2013	11/29/2013	
		UAT / System Test Vali	Deloitte / DSS	12/2/2013	12/13/2013	
		Production	BEST / Deloitte	1/1/2014	1/1/2014	

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ConneCT – Current Risks and Issues

Connecticut Department of Social Services
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Risks:

- State resource competition for upcoming releases and other projects.

Issues:

- Challenges with scanning/indexing at the current full production volume.
- Analysis and refinement of business processes has been challenging with aggressive rollout approach.
- Intermittent production issues have impacted production up-time.

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ConneCT – Results and Impacts

Connecticut Department of Social Services
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While recently implemented *(fully operational July 8, 2013)*, ConneCT has already started to make a significant impact:

- 30,015 Online Accounts Created
- 50,000+ IVR Accounts Created
- 127,308 Calls Answered by the Benefit Center
  - 29,302 Interviews Conducted via Phone
- ~1M Legacy and New Documents Committed into FileNet (Doc Mgmt)

> "This series of technological improvements will gradually change the service landscape at DSS for the benefit of Connecticut residents, the agency's dedicated staff, and taxpayers in general. We are literally taking an agency from obsolescence in terms of overwhelmed phones and laborious paper processing into the modern age of business systems."
>
> *-Governor Dannel Malloy*

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Financial Estimates (SFY 13 – SFY 14) - ConneCT

Connecticut Department of Social Services
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Estimated Total Development Cost	Estimated total Capital Funding Request	Estimated Annual Operating Cost	One Time Financial Benefit	Recurring Annual Financial Benefit
$21,401,663	$8,550,041	$4,652,061	$10,478,858	$2,279,510

Explanation of Estimates

The total development costs indicated above are reimbursed by the Federal Government at a 49% FFP rate. The "One Time Financial Benefit" of $10,478,858 shown above reflects $2,279,714 of FFP against the Capital Equipment Purchase Fund expenditures of $4,652,478, in addition to the FFP of $8,199,144 for the federal share of this initiative.

- Funding requested for the ConneCT project through this submission reflects the final allocation of funds for SFY 2014 consistent with the funding amounts approved in our original submission to the Committee.

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Actual & Projected Expenditures – ConneCT

Connecticut Department of Social Services
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Actual and Projected Development Expenditures	
Actual Expenditures:	
SFY 2009	859,840
SFY 2010	441,458
SFY 2011	894,014
SFY 2012	4,793,671
SFY 2013	13,636,831
Total Actual Expenditures Through SFY 2013	**20,625,814**
Projected Expenditures:	
SFY 2014	7,764,832
Grand Total All Expenditures	**28,390,646**

$20.6 m expended in prior years
$ 7.8 m for 2014 costs

$28.4 m total project cost

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Actual & Projected Expenditures (SFY 13 – SFY 14) - ConneCT

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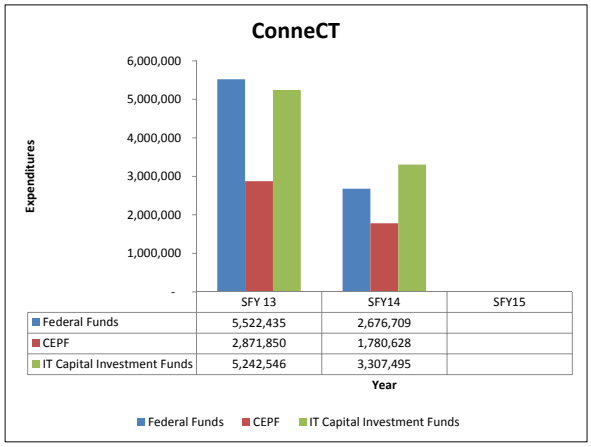

	SFY 13	SFY14	SFY15
Federal Funds	5,522,435	2,676,709	
CEPF	2,871,850	1,780,628	
IT Capital Investment Funds	5,242,546	3,307,495	

**Does not include Maintenance & Operation expenditures (SFY14 - $4.5m, SFY15 - $4.7m).*

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Achieving Incremental "Wins" for DSS and Connecticut

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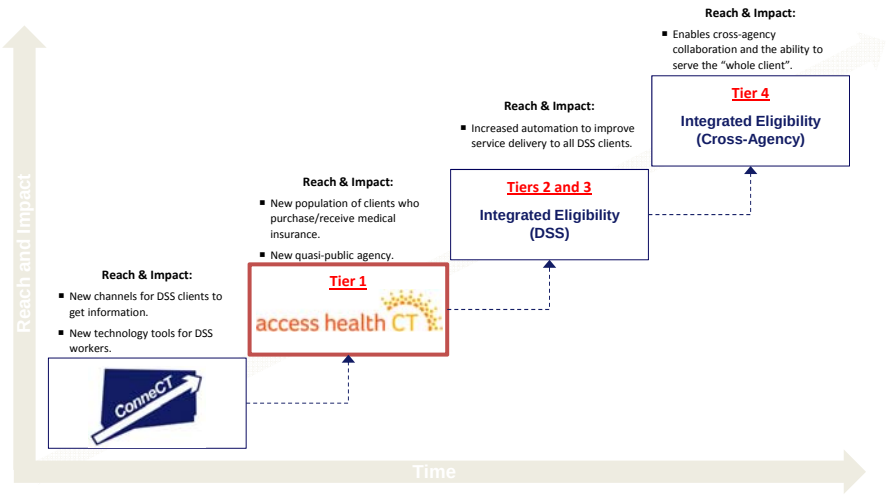

These projects build on each successful milestone to increase reach and impact.

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Health Insurance Exchange & Integrated Eligibility System Project (HIX / IEP) – Tiers 1, 2, 3, and 4

Connecticut Department of Social Services
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Project Overview

Purpose: The Department of Social Services Integrated Eligibility System project will replace the Department's existing 24 year old Eligibility Management System (EMS). The integrated eligibility platform, once designed, developed and implemented, will provide a seamless eligibility and enrollment process for Medicaid, CHIP and the CTHIX, and will ultimately be used to determine eligibility for other social service programs (e.g., SNAP, TFA). Specifically, the planned integrated eligibility function will initially address federal requirements for eligibility determinations for advance premium tax credits and reduced cost sharing through the Exchange, MAGI-based eligibility for Medicaid, complete individual responsibility exemption determinations, and coordinate enrollment.

Anticipated Project Timeline: 02/1/12 - 12/31/15

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Tier 1 Update and Timeline – Access Health CT

Connecticut Department of Social Services
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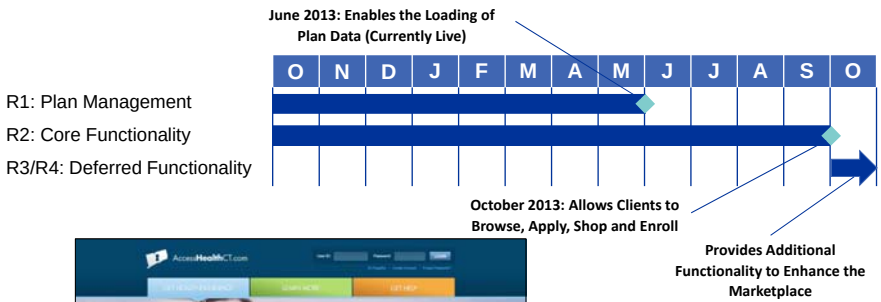

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Access Health IE PMO IT Program Plan Completion (per the IE PMO work plan)

Connecticut Department of Social Services
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IEPMO Program Plan Completion as of 8-30-13

Phase	IT/OPS	Current Completion	Weight	IT Total	Start Date	Finish Date	Previous
Planning	R0 IT	100%	0.5	100%	05/14/2012	11/15/2013	100%
	R1 IT	100%	0.5				
	R2 IT	100%	0				
Design	R1 IT	99%	0.93	99%	07/10/2012	09/16/2013	98%
	R2 IT	93%	0.07				
Development	R1 IT	99%	0.31	95%	08/16/2012	09/30/2013	93%
	R2 IT	93%	0.69				
Implementation	R1 IT	99%	0.14	71%	10/19/2012	10/03/2013	62%
	R2 IT	67%	0.86				
Operations	R1 IT	21%	0.05	1%	06/04/2013	12/31/2014	0%
	R2 IT	0%	0.95				

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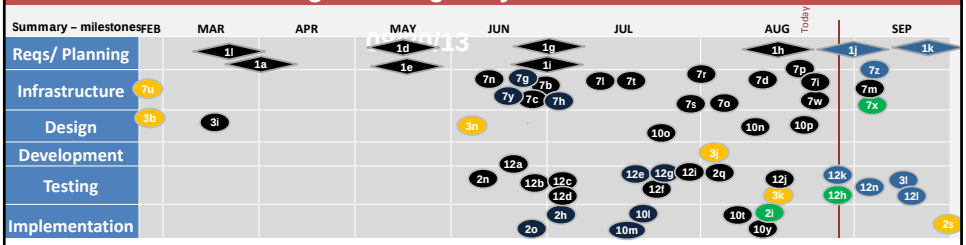
Access Health CT / Integrated Eligibility PMO IT Dashboard 08/30/2013



Requirements and Planning
(1a) *Preliminary IRS ACA Safeguard Procedures Report & System Security Plan due (Apr 1)
(1d) *Privacy Impact Assessment Complete (May 15)
(1e) *Preliminary Interconnection Security Agreement must be provided (May 17)
(1g) *Final State Determination (Jul 1)
(1h) *Computer Matching Agreement (Aug 15)
(1i) *Submit Final ACA Safeguard Procedures Report & Final System Security Plan to IRS (Jul 1)
(1j) *Final Interconnection Security Agreement due (Sep 1)
(1k)*Business Partner Agreements must be complete (Sep 30)
(1l) Submit Establishment Design Review & IT consultation/presentation to CMS (March 27-28)

Infrastructure
UAT
(7g) R2 SIM/SAM Configuration (Jun 17 – 21)
(7h) R2 Informatica Configuration (Jun 24 – Jul 5)
(7i) R2 UAT Deployment (Aug 21)
(7w) R2 UAT Shakedown (Jul 2 – Aug 21)
(7b) R2 SMS Module Install Complete (Jul 1)
(7c) R2 Filenet Configuration (May 31 – Jun 28)
Staging
(7n) R2 SIM/SAM Install (May 14 – Jun 14)
(7o) R2 Staging SIM/SAM Config. (Jul 29 – Aug 9)
(7p) R2 Staging Deployment (Aug 19)
(7d) R2 Software Base Configuration (Jun 6 – Aug 14)
(7l) R2 SMS Module Install Complete (Jul 12)
Production
(7t) R2 Vanilla Software Install (Jun 5 – Jul 19)
(7x) R2 SIM/SAM Install (Jul 15 – was Aug 28, now Sep 4)
(7y) R2 Informatica Configuration (Jun 10 – 20)
(7m) R2 Filenet Configuration (Jun 17 – was Aug 16, now Sep 6)
(7r) R2 SIM/SAM Configuration (Jul 29 – Aug 1)
(7s) R2 SMS Module Install Complete (Jul 29)
(7z) R2 Deployment (was Aug 28, now Sep 6)
(7u) BEST MOU in AHCT legal review (Feb 8)

Design
(3b) Technical Design (Due Feb 1)
(3i) R2 Design Complete (Mar 15)
Telephony – Design
(10n) IVR & Outbound Dialer (Aug 12)
(10o) Telephone System & Call Recording (Jul 25)
(10p) WFM System (Aug 21)

Development
(3j) R2 Development Complete (Aug 2)
(3n) System changes for new SSA

Testing
(12b) Finalize UAT Scenarios (Jun 28)
(12c) Create UAT Training Schedule (Jul 5)
(12d) Select and Prepare Training Rooms (Jul 5)
(12e) Week 1 Training Overview (Jul 16 – 18)
(12f) Complete UAT Env. and Testing Checklist (Jul 24)
(12g) Week 2 Training (Jul 22 – 26)
(3k) R2 SIT (Aug 15)
(12h) Prepare test scripts for UAT (Aug 30)
(2q) Start R2 UAT (Aug)
(12i) UAT Execution Kickoff (Jul 31)
(12j) Final UAT Schedule – Cycle 2 (Aug 16)
(3l) R2 UAT/ Go No-Go (Sep 13)
(12k) Final UAT Schedule – Cycle 3 (Aug 30)
(12l) R2 UAT Exit Review Meeting (Sep 17)
(12n) Final UAT Schedule – Cycle 4 (Sep 6)

Implementation
ConneCT
(2h) Xsfr Case-base to Task-base (Jul 8)
(2i) Online App&Redets [R6&R7] (Aug 13)
EMS/ConneXions/MMIS
(2o) ConneXions MPI load file developed (Jun 26)
(2s) Go live open enrollment (Oct 1)
MAXIMUS Data & Voice Circuits
(10l) Voice Circuits (Jul 22)
(10m) ACD (Jul 16)
MAXIMUS CRM/KMS
(10t) Env Set-up (was Jul 24, now Aug 14)
(10y) KMS Set-up (Aug 11)
***Indicates CMS Critical Activities and Important for Conditionally Approved SBEs**

Tier 1 – DSS Workstream Dashboard – 08/30/2013

Connecticut Department of Social Services
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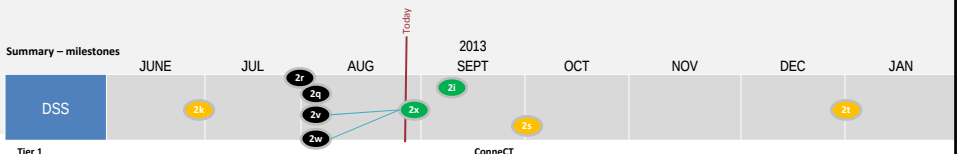


Tier 1
(2k) Approval of Tech Design (June TBD)
(2q) Start R2 UAT (Aug 2013)
(2r) Commence Training DSS staff (Aug 2013)
(2s) Go live open enrollment (Oct 1)
(2t) Go live (Jan 2014)
(2v) Submit SPA to legislative committee (Week of 8/5)
(2w) SPA Tribal Consultation (8/5)
(2x) SPA submission to CMS (8/31)

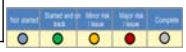
ConneCT
(2i) Online App & Redets (pilot rollout) [R6&R7] (Sep 9)

EMS/ConneXions/MMIS
(2p) All new SPEC Aus in EMS production (Nov 29)
(2n) EMS webservice lookup (Mid May)

DSS	Schedule Risks	Resource Risks	Quality Risks	Deliverables Risks	Issues

ID	Risk (s)	Overall Risk Level	Mitigation	Current Status
2t	Timing and scope of the R3 & R4 unknown. Resulting impact is lack of Integration Plan across AHCT & ConneCT. (DSS expecting integration in December release) (Risk 107)	Medium	Need an integrated work plan with release scope and timing.	Meeting scheduled for August 7 at DSS to discuss.
2s	Assumed staffing for processing verifications – scope of Xerox workers in making discretionary action. (Risk 115).	Medium	Consider work around for 1) staffing, or 2) forms of verification (including possible 'self attestation').	Work around currently being explored.
2s	Appeals process and scope of Xerox .There is a risk DSS will not be able to support the increase in fair hearings impacting DSS staffing.	Low	Discussions are currently underway between AHCT and DSS on how Fair Hearings would be handled (roles and responsibilities of various parties incl Xerox).	Meetings have commenced to document this and are being supported by KPMG.
2s	There are currently 17 DSS Change Requests pending analysis which impact either the R2 October Release, or the January Release[refer to IPEMO CR Log].	Low	Need a CCB meeting ASAP to address each of these CRs and other CRs that may arise.	Awaiting CCB meeting to be scheduled.

Key planned activities for current week
1. Decision on verification – potential self attestation
2. Identify reporting requirements
3. Develop hearings processes.
4. Develop functionality required for future releases
5. Follow up on IPA



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Access Health CT – Release 2 – Risk by Category

Connecticut Department of Social Services
Making a Difference

Quality	Medium	
	107	Timing and scope of future releases
	111	Requirements have not been traced to Design, Development, and Test scripts
	115	Verification process (IT)
	120	Poor Quality Deliverables causing rework and schedule delays
	144	Training evironment is unstable and the work portal is not working
	146	System Integrator Testing Defect Reslution Late
Schedule	Medium	
	83	MOU between BEST and Exchange polished on 1/24 pending AHCT legal sign-off
	85	The Federal Data Services Hub (FDSH) will not be available in time for Deloitte development timeline.
	123	UAT and Performance Testing Availability
	126	ICDs missing/late bSwift, ScanOptics, sir speedy, Xerox impacting testing
	132	Limited time to get approval for Power User, Plan Variation and SSA changes design to meet coding deadlines.
	135	Data format inconsistencies between Federal data templates and AHCT are hindering QHP data uploads.
	138	Staging Environment will not be ready for shakeout until 8/7
	142	Domain and DNS changes
	147	Significate Scope Changes may be made for R3 and R4 whih have created schedule risk for requested scope.
Scope	Medium	
	124	Operational and systems integration with DSS not finalized (e.g. - appeals, notifications, and call center operations, etc.)

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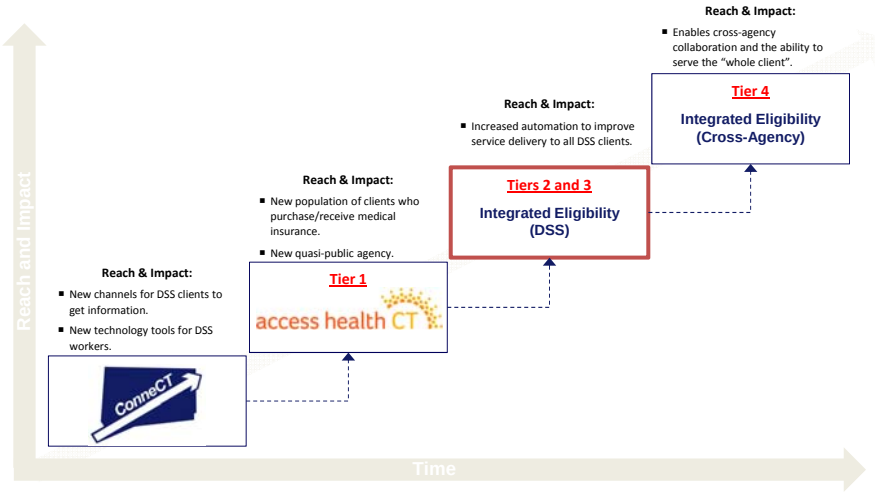
Achieving Incremental "Wins" for DSS and Connecticut

Connecticut Department of Social Services
Making a Difference



These projects build on each successful milestone to increase reach and impact.

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IEP – Tiers 2 and 3 – High Level Description

Connecticut Department of Social Services
Making a Difference

- Tier II – This Tier adds the remaining DSS medical eligibility rules (including Aged, Blind and Disabled (ABD), Medically Needy, and Long Term Care) as well as the case management capabilities for all of DSS' medical programs (including Modified Adjusted Gross Income (MAGI) based Medicaid and CHIP).
- Tier III – This Tier adds the eligibility and case management for the remaining Eligibility Management System (EMS – the legacy eligibility system) programs including TANF (called Temporary Family Assistance – or TFA in Connecticut), SNAP, Summer Electronic Benefit Transfer (SEBT), State Administered General Assistance (SAGA), State Supplement to ABDs, and Refugee Assistance

The implementation of Tiers 2 and 3 effectively provides CT DSS the ability to sunset its legacy eligibility system known as EMS

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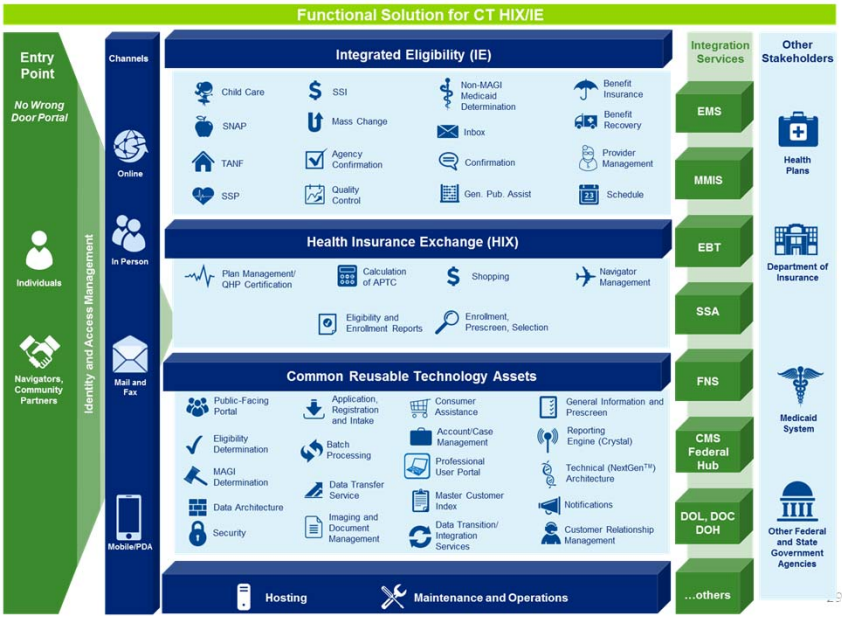
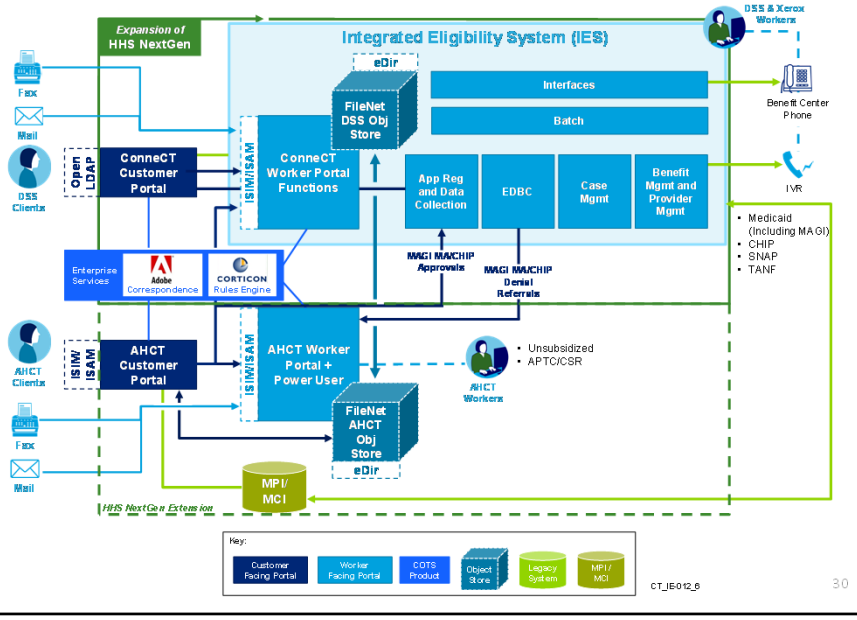
IEP - Platform Capabilities for Tiers 2, 3 and 4

Connecticut Department of Social Services
Making a Difference



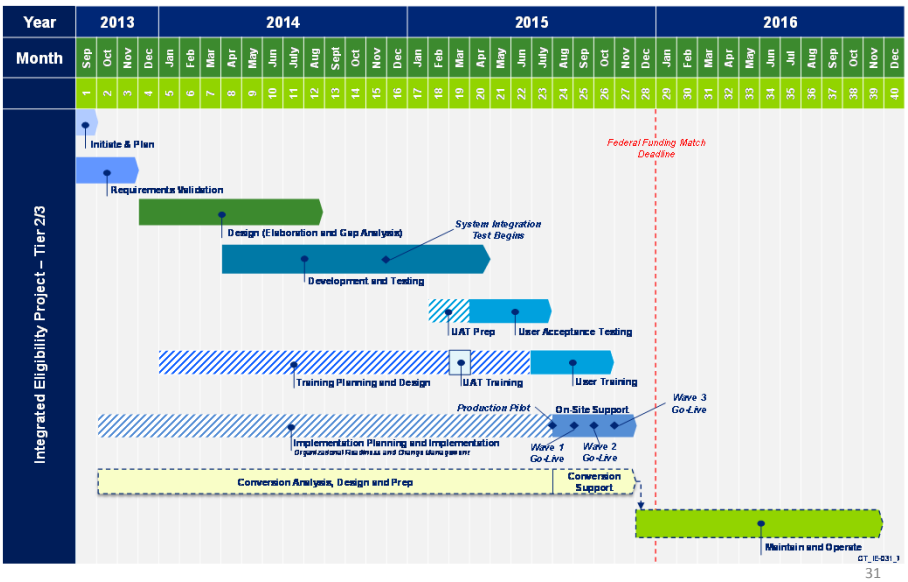
IEP - Future Vision for Tiers 2 and 3 (proposed)

Connecticut Department of Social Services
Making a Difference



IEP – Tiers 2 and 3 – High Level Project Timeline (proposed)

Connecticut Department of Social Services
Making a Difference



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IEP – Tiers 2 and 3 – Key Dates (proposed)

Connecticut Department of Social Services
Making a Difference

In accordance with the schedule above, the table below summarizes the estimated start and end dates of each project phase. The SOW is based on this estimated schedule.

Phase	Phase Start Date	Phase End Date
Initiate & Plan	September 2, 2013	September 29, 2013
Requirements Validation	September 30, 2013	November 29, 2013
Design (Elaborate and Gap Analysis)	December 2, 2013	August 29, 2014
Development and Testing	April 1, 2014	April 30, 2015
User-Acceptance Testing	March 30, 2015	July 15, 2015
User Training	July 1, 2015	October 30, 2015
Implementation Planning and Implementation	October 1, 2013	November 30, 2015
Production Pilot	August 1, 2015	August 31, 2015
Wave 1 Go-Live	September 1, 2015	September 30, 2015
Wave 2 Go-Live	October 1, 2015	October 31, 2015
Wave 3 Go-Live	November 1, 2015	November 30, 2015
Conversion	October 1, 2013	November 30, 2015
Maintain and Operate	December 1, 2015	November 30, 2016

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IEP – Current Status of Planning Phase

Connecticut Department of Social Services
Making a Difference

- **Implementation Advanced Planning Document (IAPD)** was approved by the Centers for Medicare and Medicaid Services (CMCS) and by the Food and Nutrition Services (FNS) on April 5, 2013.
- **IEP Statement of Work (SOW)** approved by CMCS and FNS on June 25, 2013 and submitted to Deloitte Consulting.
- **Final DSS Negotiated Deloitte SOW Response** submitted to CMCS and FNS on August 8, 2013
- CMCS and FNS are currently reviewing **Deloitte SOW Response** and have indicated that review will be completed within approximately thirty (30) days.
- CT DSS anticipates official **IEP kick-off** to happen on October 1, 2013.

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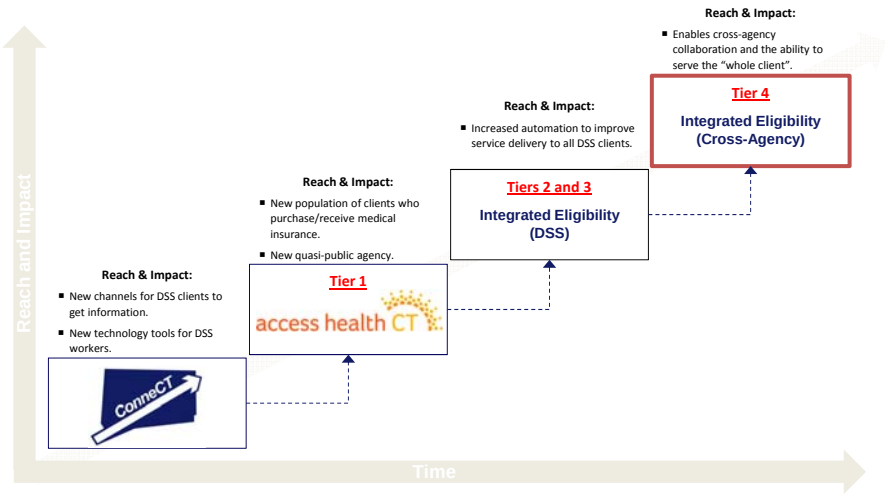
Achieving Incremental "Wins" for DSS and Connecticut

Connecticut Department of Social Services
Making a Difference



These projects build on each successful milestone to increase reach and impact.

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IEP – Tier 4 – Across the CT HHS Enterprise

Connecticut Department of Social Services
Making a Difference

- This tier contemplates an enterprise build enabling cross-agency collaboration and the ability to serve the "whole client".
- This tier is being led by CT Chief Information Officer, Mark Raymond
- Involves CT HHS agencies such as Department of Public Health, Department of Children and Families, Department of Disability Services
- Planning work is still ongoing

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Updated Financial Estimates (SFY 13 – SFY 16) – CT HIX/IEP

Connecticut Department of Social Services
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Estimated Total Development Cost	Estimated total Capital Funding Request	Estimated Annual Operating Cost	One Time Financial Benefit	Recurring Annual Financial Benefit
$108,104,791	$13,699,707	$13,782,851	$94,375,483	$10,337,138

Explanation of Estimates

The total development cost is reimbursed by the Federal Government at an 87.3% FFP rate. The estimated annual operating cost is calculated based on the SFY15 amount of $13,782,851. The recurring annual financial benefit is calculated by multiplying the estimated annual operating cost by 75%, as operating costs will be reimbursed at a 75% FFP rate.

In the development of the cost estimates above, the majority of the cost is allocated to information technology systems and related support. These costs are highly dependent upon future activities, such as the structure of procurements, vendor solicitations, and the actual reusability of technology components. The costs also reflect assumptions on the approach to implementation including training, user acceptance test, pilot, conversion and the number of releases.

The operational cost budget accounts for two (2) years of operations and maintenance, starting in January 1, 2014 and running through December 31, 2015. Assuming a full implementation of software around December 31, 2014, the estimate includes one full year of post implementation stabilization support. Please note that these costs are very preliminary estimates and subject to change as additional information becomes available.

Furthermore, there is an anticipated future APD for Tier 4 Development Costs, which are not included in this submission.

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Reasons for Expenditure Updates (SFY 13 – SFY 16) – CT HIX/IEP

Connecticut Department of Social Services
Making a Difference

- An adjustment is made to include additional project costs of $4.3 million associated with the HIX Tier 1 development. This includes the following:
  - IV&V – First Data $0.7 m
  - In Person Assistors $1.3 m
  - Hardware/Software $2.3 m
- Further detail on project timelines has allowed us to better estimate project needs across the multi-year period. As a result, total project funding of $23.6 million is shifted from SFY 2014 to SFY 2015.
- The IT Capital Fund request is also altered to reflect a revision to the anticipated federal reimbursement level. The original request utilized an overall federal share of approximately 85%; this request updates the federal share to approximately 87%.

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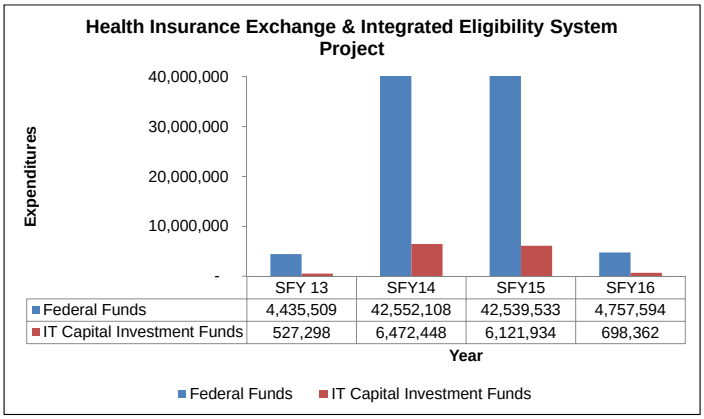
Projected Expenditures (SFY 13 – SFY 16) – CT HIX/IEP

Connecticut Department of Social Services
Making a Difference



	SFY 13	SFY14	SFY15	SFY16
Federal Funds	4,435,509	42,552,108	42,539,533	4,757,594
IT Capital Investment Funds	527,298	6,472,448	6,121,934	698,362

**Does not include Maintenance & Operation expenditures (SFY14 - $2.8m, SFY15 - $13.8m, SFY16 - $3.9m).*
**Does not include anticipated future APD for Tier 4 Development Costs, which are undetermined at this time.*

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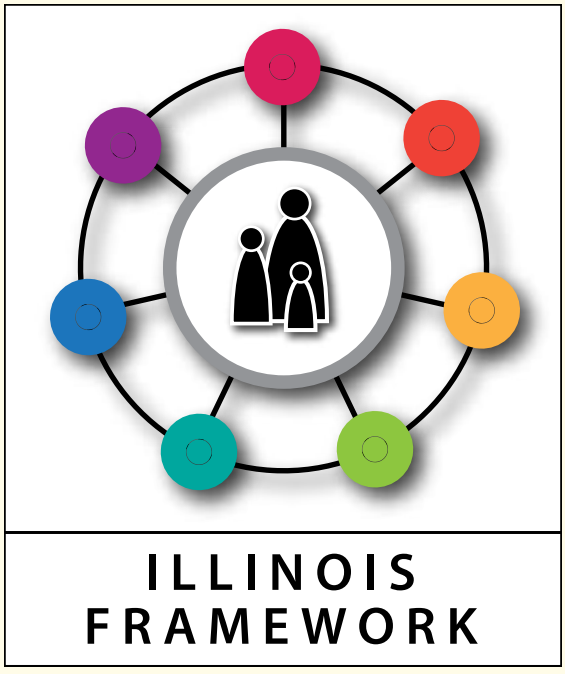
A Handbook for States

ESTABLISHING GOVERNANCE FOR HEALTH AND HUMAN SERVICES INTEROPERABILITY INITIATIVES



A REPORT OF THE STATE OF ILLINOIS INTEROPERABILITY AND INTEGRATION PROJECT

An initiative of The Illinois Framework for Healthcare and Human Services

Illinois Framework
Department of Human Services
State of Illinois
www.illinoisframework.org

Funding provided by the federal Office of Management and Budget (OMB) Partnership Fund Pilot: State Systems Interoperability and Integration (S212) Grant Project, Grant/Cooperative Agreement Number: 90FQ0003, distributed by the U.S. Department of Health & Human Services (HHS) the Administration for Children & Families (ACF).

ILLINOIS FRAMEWORK

About the Illinois Framework for Healthcare and Human Services

The Illinois Framework for Healthcare and Human Services (Illinois Framework), a multi-agency collaborative, coordinates the use of shared technology and business processes across Illinois' federally-funded healthcare transformation initiatives. The Illinois Framework provides strategic insight, organizational support, and guidance on federal standards to advance Illinois' healthcare and human services enterprise. These efforts will improve service coordination and lower costs to advance the health and well-being of the people, families, and communities of Illinois.

The Illinois Framework achieves its goals by leveraging multiple ACA-related federal infrastructure investments, implementing effective governance, undertaking comprehensive planning, and rigorously engaging key stakeholders. The Illinois Framework will benefit clients, providers, and the State of Illinois in the following ways:

- Provide customers with more options to access the range of needed services.
- Develop a healthcare and human services enterprise for Illinois that will provide seamless services to customers at the lowest possible cost and highest quality.
- Leverage and reuse technology to maximize investment and increase operational efficiency and reduce administrative burden.
- Redesign business processes around the sharing of critical information and delivering services to the right person at the right time.
- Improve outcomes through data-driven decision tools utilizing rich new data sources with accurate and timely information.

Wherever possible, the Illinois Framework will leverage the functionality of the integrated eligibility, enrollment, and case management systems developed as part of the ACA implementation. Specifically, the Illinois Framework will focus on sharing services among the following processes:

- Assessment, Intake, and Application
- Eligibility, Verification, and Enrollment
- Casework and Case Management
- Provider Management
- Analytics and Reporting

Finally, the Illinois Framework recognizes the complex needs of both the customers and providers of state services. The Illinois Framework acknowledges these needs in developing systems that are intuitive and easy to access online, in person, by phone, and by mail.

The Framework's initial scope includes almost 60 programs within the following State agencies:

- Aging
- Children and Family Services
- Commerce and Economic Opportunity
- Healthcare and Family Services
- Human Services
- Public Health
- Employment Security

November 2013

Dear Reader:

Like many other states, Illinois faces the challenge of meeting an increasing demand for healthcare and human services at a time of constrained resources. Antiquated business processes embedded in legacy technology systems are not commensurate with the scope and volume of the service demands the State must meet. To address this a-synchronicity, state and local governments must align technology in support of transparency, interoperability, efficiency, ease-of-use, and a "no wrong door" approach to enrollment, evolving the relationship between government and the people from "citizen" to "citizen as customer."

The State of Illinois, through the Illinois Framework for Healthcare and Human Services (Illinois Framework), has begun the work of developing and modeling a new method of public administration that focuses on three distinct but related areas:

1. interagency governance and management;
2. technology modernization; and
3. designing a customer-centric paradigm.

The result will be, we believe, to improve and refocus management strategy, realign budgetary practices and priorities, and allow the state to make strategic investments to better support its end-users.

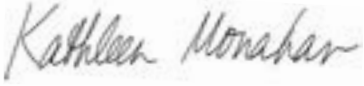
Achieving the Illinois Framework's vision will require an ongoing series of decisions – both practical and philosophical – about policies, systems, authority, and responsibilities. The complexity of the project suggests that many of these decisions will be difficult; as such building a new approach to service delivery will require a governance process that is consistent, effective, and equitable.

With the support of the United States Office of Management and Budget's (OMB) Partnership Pilot State Systems Interoperability and Integration (S212) Grant Project, administered by the U.S. Department of Health & Human Services Administration for Children & Families (ACF), the Illinois Framework Team – led by national and industry experts – undertook intensive research, discovery, and analysis to design a sustainable governance model for the Illinois Framework. This handbook is a summary of the Team's findings and a step-by-step guide for other states and jurisdictions to implement successful governance processes in similar interoperability projects.

We hope that states can make effective use of the lessons and strategies we have attempted to discuss in this handbook. In Illinois, we have already made significant progress. At the same time, we welcome collaboration and communication on an ongoing basis in order to learn new lessons and benefit from new ideas.

We are grateful to the OMB and ACF for their support, and we hope to extend the benefits of federal investment in Illinois to other healthcare and human services agencies throughout the nation.

Sincerely,



Sean Vinck
Chief Information Officer
State of Illinois

Kathleen Monahan
Director
Illinois Framework

ILLINOIS FRAMEWORK

Table of Contents

Executive Summary

The handbook's Roadmap to Effective Governance provides six common attributes to successful governance models.

The Illinois Interoperability and Integration Project was funded by a $1,125,000 State Systems Interoperability and Integration Projects planning grant from the federal Office of Management and Budget (OMB) Partnership Fund, distributed by the U.S. Department of Health & Human Services Administration for Children & Families.

During the 12-month grant period, Illinois designed and developed a governance model for the Illinois Healthcare and Human Services Framework Project (the Illinois Framework), a seven-agency collaborative to develop a modern, horizontally-integrated state health and human service delivery system.

While the literature on project success points to the need for such governance, few existing models were previously tested and proven in the field. In response, Illinois performed extensive background research on successful models and best practices in interoperability project governance. This handbook presents the results of Illinois' findings as a guide for states and other jurisdictions contemplating cross-program and cross-agency system development efforts.

The Roadmap to Effective Governance provides six common attributes of successful governance models identified in Illinois' research:

1. Identify and assemble strong executive leadership
2. Create a shared vision
3. Formalize governance structure
4. Establish clear decision-making process
5. Evaluate governance system and adapt as necessary
6. Maintain transparent communications

The Illinois Case Study details Illinois' progress in establishing governance for the Illinois Framework, highlighting the benefits and challenges of implementing a governance model in a cross-agency setting. The Resource Library provides links to research articles and audio files of original interviews conducted by the State of Illinois. Finally, the handbook's Governance Toolkit contains samples of key documents, such as charters and other memoranda, created by and for governing bodies in actual interoperable health and human services projects.

The handbook is available both in print and interactive on-line versions. To order print copies, please send your request to DHS.HHSFramework@Illinois.gov. The online version can be found at www.illinoisframework.org.

ILLINOIS FRAMEWORK

Introduction

Through the Illinois Framework, the State of Illinois leverages multiple federal investments to adopt a more efficient and comprehensive approach to service delivery. The State's goal is a sustainable foundation of interoperable systems and information sharing to provide greater coordination across client services.

What is Interoperability?

The Illinois Framework will make seven distinct state health and human services agencies across the state interoperable. These seven agencies traditionally have operated independently or in "silos." Interoperability is "the ability of two or more systems or components to exchange information and to use the information to make better decisions."[1] While initially applied to information exchange in the fields of information technology or systems engineering information exchange, a broader definition now includes social, political, and organizational factors that impact system-to-system performance.[2] Interoperability has become an important goal for any jurisdiction that requires cooperative action across multiple independent agencies to better serve the needs of its citizens.

Interoperability and Governance

For jurisdictions to successfully implement interoperability initiatives, they must give careful thought to the establishment of cross-agency governance. Indeed, success depends on a strong cross-agency governance structure to take the lead in making decisions, establishing priorities, overcoming hurdles, and managing both internal and external communications.

While the definition of governance varies across sectors, industries, and even projects, most guidance on this topic begins with an emphasis on bringing stakeholders together to decide how to get things done. Various definitions of governance include the following:

> *At its most basic level, governance is a shared set of expectations for an organization or enterprise… An effective governance model guides decision makers in building an organizational structure that effectively supports the planning, development, oversight, and fiscal management activities that promote the enterprise.*[3]
>
> *Governance sets the priority of a project, which is needed for the management of resources…without governance, some form of*

> *anarchy eventually results, [with stakeholders] moving from crisis to crisis, only capable of responding to the loudest, most powerful voice or the most serious emergency.*[4]

An effective governance process ensures input from the necessary stakeholders and "confers legitimacy" upon project decisions and outcomes.[5] Regardless of the industry or sector, establishing a governance process is a critical step—ideally the first step—in a project's development.

The need for governance early in a project is particularly important in public sector interoperability projects that span multiple agencies and require buy-in from leaders who are accustomed to making decisions autonomously or without the consent of other agency leaders. In its report, *Governance Guidance for Horizontal Integration of Health and Human Services*, the American Public Human Services Association (APHSA) describes the importance of governance as follows:

> *Strong governance from the start is essential for long-term success… It must be done immediately and quickly so that no more time is lost in seizing the time-limited funding opportunities currently available and in assuring that the human service perspective and vision of a fully integrated health and human services are part of the ACA [The Patient Protection and Affordable Care Act of 2010] planning currently underway.*[6]

Establshing a governance process is a critical step in a project's development.

Establishing Governance for Health and Human Services Interoperability Initiatives: A Handbook for States

In 2012, the Administration for Children & Families (ACF), of the U.S. Department of Health & Human Services (HHS) awarded Illinois a State Systems Interoperability and Integration grant. This funding enabled the State of Illinois to take a methodical approach to establishing a governance structure for the Illinois Framework. This approach involved conducting several months of research into best practices in governance development while, at the same time, applying these practices to the establishment of governance for the Illinois Framework. For its research component, Illinois interviewed experts on health and human service interoperability from local, state, and federal governments and conducted a review of relevant publications, white papers, academic literature, and other guidance materials.

Establishing Governance in Health and Human Service Interoperability Initiatives: A Handbook for States distills everything that Illinois learned and collected through its research and governance experience, and makes that knowledge available as a resource for other jurisdictions as they establish governance in similar projects.

This handbook is intended as a guide for jurisdictions that are establishing governance for cross-agency data sharing initiatives. Although guidance on governance is not

ILLINOIS FRAMEWORK

This handbook includes:

- **A Roadmap** built around the six common themes or attributes of effective governance models identified in the research;
- **An Illinois Case Study** detailing Illinois' progress in establishing governance for the Illinois Framework;
- **A Resource Library** with links to articles and audio files of original interviews; and
- **A Governance Toolkit** with samples of key documents created by and for governing bodies.

new – there is, in fact, a wealth of literature on the topic – this handbook is unique in its use of successful governance models to both identify best practices and incorporate lessons learned into the development of the Illinois Framework's own governance model.

Because it was developed in conjunction with the establishment of governance for the Illinois Framework for Healthcare and Human Services, the research and interviews contained within this handbook were conducted primarily with leaders from the health and human service field; however, the information contained within the handbook can be applied to other public sector cross-agency collaboration efforts.

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[1] Administration for Children and Families (ACF), ACF *Interoperability Initiative*, http://www.acf.hhs.gov/initiatives-priorities/interoperability (August 2013).

[2] Wikipedia, *Interoperability*, https://en.wikipedia.org/wiki/Interoperability (August 2013).

[3] National Association of State Chief Information Officers (NASCIO), *Connecting Silos: Using Governance Models to Achieve Data Integration*, http://www.nascio.org/publications/documents/NASCIO-connectingSilos.pdf (August 2013).

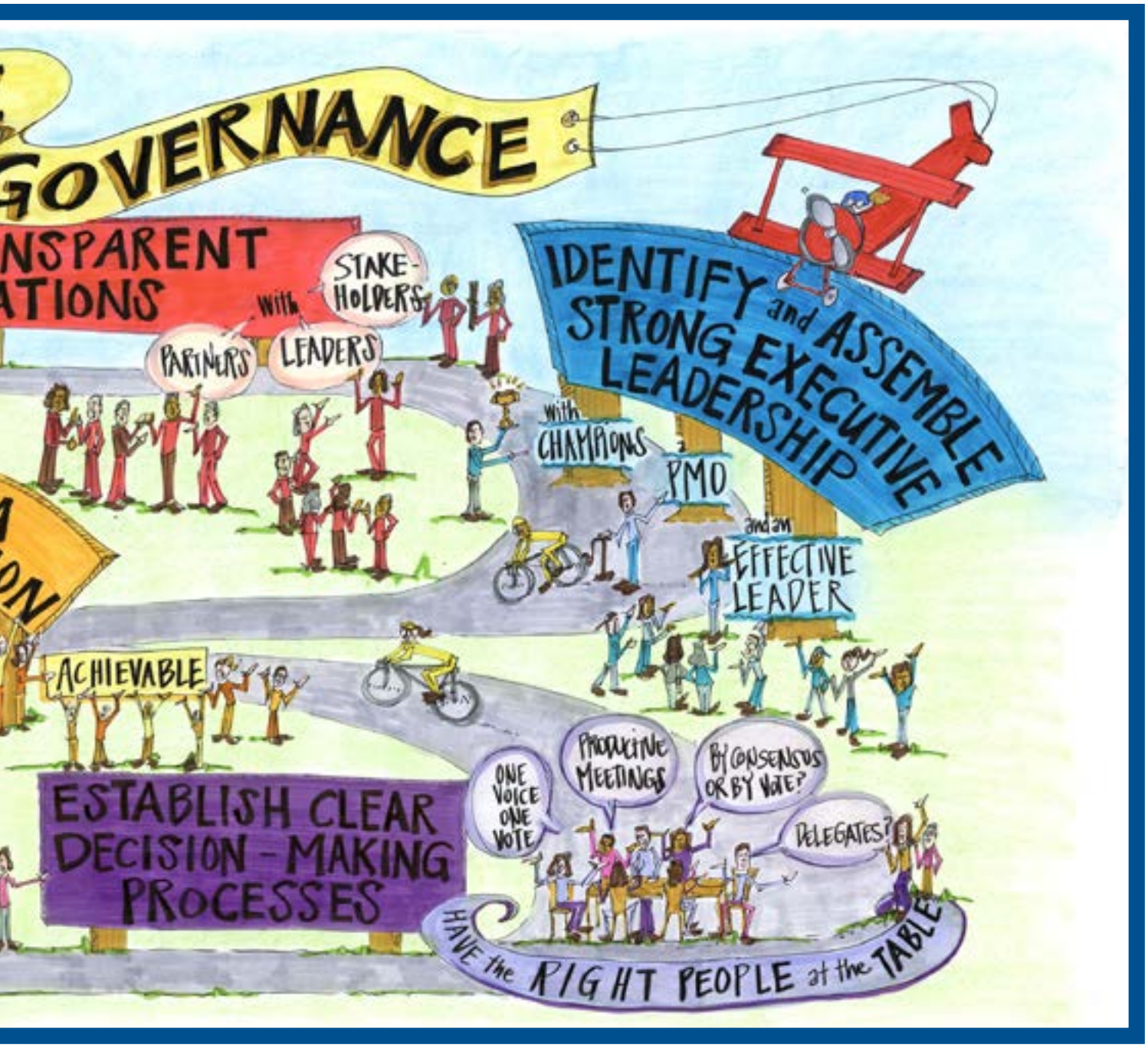
[4] Daniel Herman, Guy Scalzi, Roger Kropf, *Managing Healthcare IS Supply and Demand* (Aspen Advisors 2011).

[5] Herman, Scalzi, Kropf, *Managing Healthcare IS*.

[6] Cari DeSantis, *Governance Guidance for Horizontal Integration of Health and Human Services* (American Public Human Services Association, 2012).

Roadmap To Effective Governance

The road to successful cross-agency governance is sometimes not clear or easy; however, by taking careful steps and using the right tools, states and jurisdictions can implement governance models that fit their cross-agency needs. The six attributes presented here run through all successful governance models. A single, simple model of governance does not emerge from the six attributes, nor do all of the attributes dictate specific details to include in a particular jurisdiction's governance. However, while governance models vary greatly, applying these six elements thoughtfully and uniformly will "jump start" effective governance models in other jurisdictions. The six attributes of successful governance are:



1. **Identify and assemble strong executive leadership**
2. **Create a shared vision**
3. **Formalize governance structure**
4. **Establish clear decision-making process**
5. **Evaluate governance system and adapt as necessary**
6. **Maintain transparent communications**

This section of the handbook contains a visual roadmap of the attributes of good governance with detailed descriptions of the attributes and related quotes from national leaders. The attributes do not form a sequential roadmap. Rather, jurisdictions should apply and reapply each of them in an iterative process throughout the life of the health and human services initiative to establish and maintain successful governance.

Identify and Assemble Strong Executive Leadership

It's cultural, not so much technological. It's the carbon, not the silicon. By that I mean that people are made up mostly of carbon atoms, as opposed to the silicon of the computer chips, which presented the largest obstacles. People, not the boxes and wires, are the largest challenge. If you can get the right leadership in the room, who have drunk from the same cup, and believe in it, you can accomplish the change that you need to make.

Rick Friedman
Consultant; Former Director of the Division of State Systems, CMS, U.S. Department of Health and Human Services

Structures vary, but most governance models comprise multiple layers, including a decision-making body, subcommittees (often several subcommittees), and a staffed project management office (PMO). Whether governance begins with a top-down approach with the jurisdiction's senior-most leadership, as a movement among like-minded agency leaders, or at the staff level from a PMO, effective leaders are required throughout the governance structure to create buy-in, build momentum, and move important work forward.

Strong executive leadership requires the vision and capacity to lead across agencies. According to governance experts Stephen Goldsmith and William Eggers:

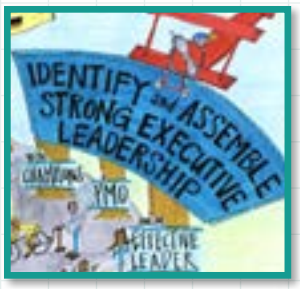
> *A program's success or failure often depends on whether the network manager masters the challenges of governing by network: aligning goals, providing oversight, averting communications meltdown, coordinating multiple partners, managing the tension between competition and collaboration, and overcoming data deficits and capacity shortages.*[1]

Executive Level Leadership

Executive leadership sets the tone and champions the initiative and, if the leader is strong and effective, he or she can nearly guarantee a project's success. This senior-most leader must be a person with authority that is granted, either in a direct managerial line or through delegation by the mayor, governor, or other appointing body. He or she must be able to:

- Instill buy-in among agency heads;
- Create momentum;
- Move forward any foundational documents or legislation;
- Champion the project to a wider audience as needed; and
- Make difficult decisions swiftly.

San Diego County's Nick Macchione, Health and Human Services Agency Director overseeing *Live Well, San Diego!,* the County's long-term health and wellness plan states, "It is clear that you need a Chief Executive



Officer…who all these disciplines report to…he or she must have the ability to espouse the policies to the board, and then implement them as a single organization."[2]

Uma Ahluwalia, Director of Health and Human Services for Montgomery County, Maryland, sums up succinctly the complexity of leadership in cross-discipline governance:

> *You need someone in a position of authority…you've also got seven directors who have hopefully bought into it at the same level of commitment…maybe they bought into it for different reasons – some out of commitment to the goal, others because someone told them they had to – I don't know what your universe is, but if you got everybody sort of willing and able, you got to just keep driving the train.*[3]

WHAT MATTERS

- An effective leader in a position of authority over participating agencies;
- A well-led PMO; and
- Agency heads who are active governance participants and vocal champions in their own agencies and among stakeholder groups.

Leaders of Participating Agencies

Agency leaders, because of their necessarily independent views from within a particular agency or stakeholder group, cannot, by themselves, lead the governance of an initiative that spans the breadth of health and human services in a jurisdiction. However, for genuine success, program leaders of involved agencies must be highly supportive of the initiative, active participants in governance decisions, and true champions to create buy-in with their own agency staff and stakeholders.

Inside the Project Management Office

Having a strong PMO director is critically important to the forward movement of governance. This leader must be able to coordinate multiple initiatives at every level and must have the skills to garner support among agency leaders and the initiative's key stakeholders. He or she sets agendas, serves as a liaison with all other parts of the initiative, identifies and secures funding, generates reports and other communications, drafts foundational documents, and coordinates and shapes the work of the governance committee and all subcommittees

Leadership Styles

Kurt Lewin's 1939 research on leadership involved observations of productivity under three different styles of leadership: Authoritarian/Autocratic; Participative/Democratic; and Delegative/Laissez-Faire.[4] Lewin found that, while the groups using the Authoritarian style had higher productivity, groups employing the Participative style created a work product of a significantly higher quality. The lowest productivity among the three came from groups using the Delegative style. In the years since Lewin's study, other researchers have developed variations

on leadership style; but these early styles still make a useful basis for considering leadership in governance.

Leadership styles do not seem to be a determining factor for success.

While strong leadership is an essential component of good governance, governance styles vary considerably, and the particular style of leadership does not seem to be a determining factor for success. Health and human services leaders in Virginia and New York City, for example, span the spectrum of leadership styles. Virginia's Secretary of Health and Human Resources, Dr. William (Bill) Hazel, succeeded in gaining bi-partisan legislative support by building trust and sharing knowledge.

New York's City's leadership took a more top-down approach. The Deputy Mayor of Health and Human Services Linda Gibbs initially used her Mayoral authority to lead; later, she moved to a participative style of leadership as the governance process matured.[5] According to Rick Friedman, former Director of the Division of State Systems at the Centers for Medicare and Medicaid Services (CMS) within the U.S. Department of Health and Human Services, a participative style is effective for the following reason:

> *I think people have very legitimate concerns about collaboration. They're going to lose power and influence. I don't think hitting them over the head with people up their food chain is really going to bring their hearts and minds along. It's paying close attention to the reasons for their hesitation, and it's really hard sometimes to find things that connect with everybody across the spectrum, but it's definitely worth the effort if you can.*[6]

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[1] Stephen Goldsmith and William D. Eggers, *Governing by Network: The New Shape of the Public Sector*, (Washington, DC: Brookings Institution Press, 2004), 40.

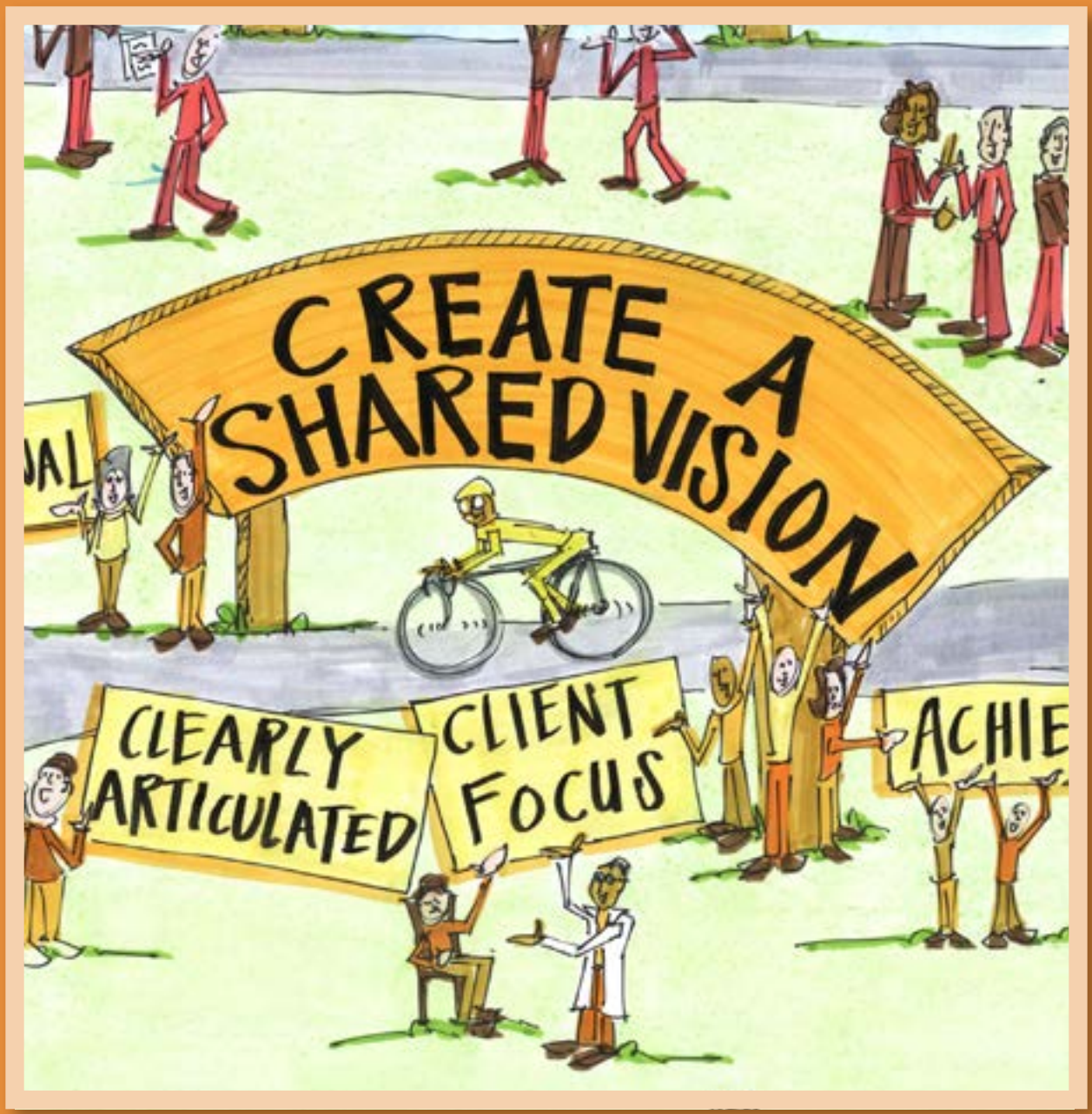
[2] Nick Macchione, phone interview, February 2013.

[3] Uma Ahluwalia, phone interview, February 2013.

[4] Management and Business Studies Portal, *Kurt Lewin*, http://www.mbsportal.bl.uk/taster/subjareas/busmanhist/mgmtthinkers/lewin.aspx (August 2013).

[5] Linda Gibbs, phone interview, February 2013.

[6] Friedman, phone interview.



Create A Shared Vision

I've got a good friend who frequently at meetings says that culture eats process for breakfast every day. Having the documents and stuff is nice, but it's having the understanding that makes it really work. What we, for better or worse, have created in Virginia is a pretty good understanding of where we're trying to go. By and large people are all pulling in the same direction and that makes it a lot easier.

Dr. William (Bill) Hazel
Secretary of Health and Human Resources, Commonwealth of Virginia

To make effective decisions and create forward momentum, governance must have a single vision that everyone involved – including leadership, all members of the governing body and subcommittees, and the PMO – embraces. The participants develop the shared vision through a common understanding of current challenges and a generally accepted view of the future that the governing body wants to achieve. The vision must be in a form that allows those involved to champion it, and it must cut across and unify agency silos.

APHSA sums up the importance of having a clear vision in its guidance for horizontal integration across health and human services: "The challenge for an integration initiative governing body is to promote a clear vision in a culture unused to working across the entire health and human service enterprise, maximizing connections within government and reaching out to the community for partnership in service."[1]

Developing a Vision across Agencies

The development of the vision statement is likely to be an ongoing process, starting when governance begins for a particular jurisdiction and taking shape as new voices and viewpoints gather around the table. As governance matures and systems and needs change, the group may refine the vision months and even years after leaders originally conceived of it. The most important point is that those involved in the initiative develop and share the same guiding principles.

For those jurisdictions where governance starts in the PMO, as occurred in Illinois, the PMO creates a vision statement in draft form for review, changes, and approval by the Steering Committee after its formation.[2] In New York City, health and human services agency heads – serving as the governing body – shaped the vision, and it grew organically out of the development process. According to Deputy Mayor Gibbs, "We had a bunch of commissioners sitting around wanting to do this. We had agency buy-in. They all wanted to join the front line case management collaboration, and we took the cause around the technology."[3]

Governance of health and human services interoperability projects requires collaboration across silos, and the shared vision statement must represent

and fuse together that collaboration. Rick Howard, a Research Director with Gartner's Government Industry team who previously worked as a health and human services Chief Information Officer (CIO) for the State of Oregon, cautions jurisdictions against the silo or proprietary approach when developing a vision. He states:

> *If you really believe that the individual who is served by that [one] program area is yours, not only is it degrading, it's incorrect. That individual's likely receiving services in three or four other parts of the health and human services enterprise, and you don't own them. You have a responsibility for them and the service you're delivering, but understand that in conjunction with many other services.*[4]

Howard also sums up the challenges and importance of visioning across silos in this way:

> *I went back to our Chief Financial Officer and said, 'I really need to know where this organization is heading over the next decade because we're making decisions that are going to affect us for a long time to come given the rate of acquisition and persistence of these investments.' And he said, 'Don't wait for a business plan; that's never going to happen.' You need to develop a vision that people can argue with, and then get engaged that way…to think that there's a strategic intention among these programs that never have enough money and have great need upon them is incorrect. They're thinking next week and next month and the next phone call…they're really not thinking about what SNAP [Nutrition Assistance Program] is going to look like in five years.*[5]

Vision's Common Themes

Visions vary across the jurisdictions, and depend largely on the agencies involved and the particular circumstances and climate in that jurisdiction. There are, however, some common elements of a clear vision. These include:

- A carefully defined scope—knowing what is and what is not part of the project;
- A client-centered approach;
- Important non-client-related components, such as the need for greater efficiencies and reduced costs;
- A commitment to cross-agency collaboration and cooperation;
- Establishment of common goals and shared understanding of issues; and
- Development and full-buy-in by the governing body.

WHAT MATTERS

- A clearly articulated vision that is measurable, far-reaching, aspirational, achievable, client-focused, and that crosses traditional program areas and on which there is agreement by all those involved in its implementation.

Vision Statement Examples

While the articulated vision statement is only one piece of the visioning process, it is useful for other jurisdictions to consider existing vision statements as a place to start the conversation.

Commonwealth of Virginia electronic Health and Human Resources (eHHR) Program Charter:

"To leverage information technology to improve healthcare and human services for Virginians by providing access to the right services for the right people at the right time and for the right cost."[6]

New York City HHS-Connect Executive Steering Committee (ESC) Charter:

"To break information silos through the use of modernized technology and coordinated agency practices to more efficiently and effectively provide Health and Human Services to New Yorkers."[7]

National Information Exchange Model (NIEM) Human Services Domain Charter:

"Effective information sharing is critical to the success of a coordinated human services system. The purpose of the NIEM Human Service Domain is to support information sharing and promote interoperability between and beyond social service providers at the federal, state, and local level."[8]

Oregon Joint Operating Steering Committee (JOSC) Charter:

"The JOSC provides the consistent forum needed to explore and fully consider the range of operational and business issues defined in this charter that support shared services governance. The JOSC provides internal governance decision-making for those issues."[9]

Consider existing vision statements as a place to start the conversation.

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[1] Cari DeSantis, *Governance Guidance for Horizontal Integration of Health and Human Services* (American Public Human Services Association, 2012).

[2] Kathleen Monahan, interview held in Chicago, Illinois, July 2013.

[3] Linda Gibbs, phone interview, February 2013.

[4] Rick Howard, phone interview, February 2013.

[5] Howard, phone interview.

[6] Commonwealth of Virginia, *electronic Health and Human Resources (eHHR) Program Charter* (Richmond, VA: Virginia Health and Human Resources, 2012).

[7] New York City, *HHS-Connect Executive Steering Committee Charter* (New York, NY: Office of the CIO for Health and Human Services, 2008).

[8] U.S. Administration for Children and Families (ACF), *National Information Exchange Model Human Services Domain Charter* (Washington, DC: U.S. Department of Health and Human Services, 2012).

[9] State of Oregon, *Joint Operations Steering Committee Charter* (Salem, OR: Department of Human Services and Oregon Health Authority, 2011).

Formalize Governance Structure

The governance process shapes expectations, so that the clinical or business sponsors of an IT project understand what benefits should be achieved, assume accountability for benefits realization, and are clear of the role and responsibilities each party has for project completion. The governance process confers legitimacy on decisions, so that project selection, for example, is not viewed as reflecting just personal relationships.

Aspen Advisors

Governance structures vary tremendously in their formality, scope, size, and configuration. Importantly, none of those variations appear to hinder or particularly aid success. Instead, simply formalizing a governance structure is a key component of successful governance. Without exception, each successful governance body takes the initiative to formalize its own structure, and it is this formalization and the adherence to the structure that leads to success.

Most governance structures consist of a PMO and an assigned, appointed, or elected body representing the various stakeholder groups or affected agencies. Many also include subcommittees, either as standing bodies or as short-term groups formed to accomplish a task before disbanding. When San Diego County formed a governance process for Live Well, San Diego!, it conducted research both in and out of the health and human service system. According to San Diego County's Health and Human Services Agency Director Macchione:

> *We made changes to our model but the one thing that was very clear was that seven masters, seven chefs and one kitchen wouldn't work. We needed a model and we studied a lot. We used KPMG as our consultant, and we looked at the models of integrated healthcare systems, delivery systems, Kaiser Permanente, and other systems – some not even governmental.*[1]

Paul Wormeli, instrumental in the founding of the governance for NIEM as well as serving in an advisory capacity on many other governance models, describes his experience:

> *You have an outline of an organizational structure, you'll define the working groups, define the committees that you need to establish, and define the process for empowering the committees. You want to get the executive group to agree to have supervisors assign people to committees by official designation and not just show up as volunteers. Therefore, the governance group will have responsibilities for participating in the committees.*[2]

WHAT MATTERS

» A robust and highly-functional governance structure that the group carefully develops and documents through an executive order, interagency agreement, charter, memorandum of understanding, proclamation, or other foundational document.

Components of a Governance Structure

Project Management Office (PMO): Successful governance requires a professionally staffed PMO to organize meetings, set agendas, liaise with all other parts of the initiative, identify and secure funding, generate reports and other communications, draft foundational documents, articulate a draft shared vision, and coordinate and shape the work of the governance committee and all subcommittees.

The PMO is generally – although not in every instance – the first area of governance to take shape. It may begin formally or informally, and often leads the charge for the formation of more structured governance. Because the PMO is responsible for much of the initiative's progress between meetings as well as the coordination of governance meetings, it must have a knowledgeable manager who can lead the work and make decisions and move the initiative forward. Hiring a strong team of appropriately skilled staff, knowledgeable both in the subject matter and governance, is also key to providing project support.

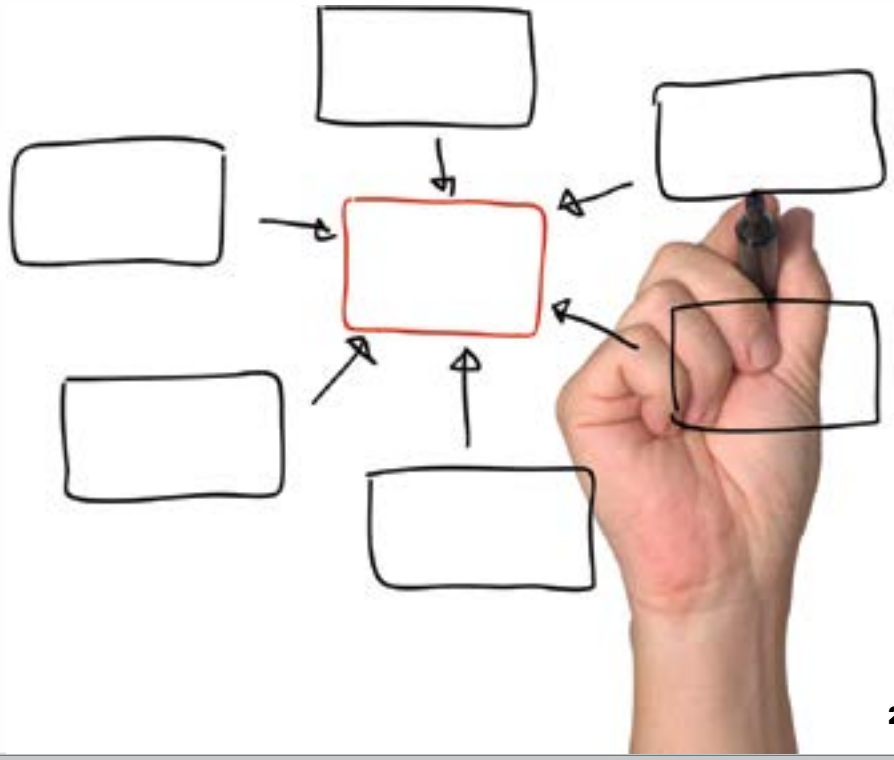
In New York City, the Deputy Mayor for Health and Human Services equates her role with Chair of the Board for HHS Connect, and she hired a full-time director and staff to run the project.[3] In many of the observed governance models, the jurisdiction formed the PMO before establishing the appointed body. In the case of Illinois, for example, government leaders worked for several years to formalize the Illinois Framework, establishing its PMO in the fall of 2012 prior to the first meeting of its ESC in the spring of 2013. NIEM got its start when Federal agencies – the Departments of Justice and Homeland Security – facilitated initial meetings of stakeholders in the states by paying for travel and per diem and providing meeting support staff. After the interested state leaders established the NIEM governance, the governing group along with the Departments of Justice and Homeland Security created the PMO.[4]

Governing Bodies: When jurisdictions observe the need for governance, they create decision-making bodies – generally called ESCs, Project Oversight Committees, Boards of Directors, or something similar – to take on the important decision-making that is the real heart of governance. Leadership from involved agencies, subject matter experts, and/or political appointees make up these committees, and members may or may not be permitted to send designees to meetings. This committee's primary role is to set priorities and make decisions necessary for forward movement of the project. This committee is tasked with mission-critical responsibilities rather than symbolic roles.

Governing bodies take on mission-critical responsibilities rather than symbolic roles.

Subcommittees: Many, but not all, governance models include subcommittees. Those that do employ subcommittees use them to support decision-making and move various pieces of the initiative's work forward. Most governance models view members of subcommittees as the subject-matter experts in their particular area (e.g., privacy and security, technical architecture, business architecture, a particular health or human service discipline, etc.). Subcommittees can be long-standing or temporary. At the Centers for Medicare & Medicaid Services (CMS), for example, subcommittees were temporary, yet critical to success. According to Rick Friedman, "There were different committees working on different issues. They would be formed, make a contribution, and then disband. Or if there was a second related issue, they worked on that too, but typically that was done by spinoff committees or subcommittees from that group."[5] NIEM domains use subcommittees to undertake the detailed steps necessary to create the exchanges that the executive committee prioritizes.

Jurisdictions generally use subcommittees as working groups that explore topics in more detail, complete assigned work, and investigate and recommend courses of action. A subcommittee on legal issues, for example, may meet several times over the course of the month; interview agency attorneys; read pertinent federal and state laws, regulations, and agency policies; and recommend to the governing body an approach to protect privacy and confidentiality while facilitating the sharing of case-level information between separate human service agencies. Similarly, a technical architecture committee may meet and make recommendations that resolve the technical difficulties involved in a particular data exchange.



Foundational Documents

Governing bodies legitimize their existence, processes, and relationships through the creation of foundational documents. Often, collaboration begins first, and the people and agencies collaborating create formal written agreements that serve the current efforts and help to ensure their continuation through changes in leadership and priorities.

Two types of documents are discussed here: establishing and operational. Establishing documents serve to formally launch the governing body and ensure cross-agency collaboration even, potentially, through larger changes. Establishing documents may include legislation, executive orders, interagency agreements, memoranda of understanding, or other similar documents. Charters may serve as both operational and establishing documents, depending on their level of detail and legal authority. Operational documents, which lay out in detail the day-to-day and longer term roles and responsibilities of governance, may include

While governance documents vary by jurisdiction, their existence is critical to the ongoing operation of the governance model.

strategic plans, value propositions, standard operating procedures, and mission statements. In most cases, governance teams do not share operational documents widely beyond the team itself – with the exception of mission statements – but these documents are internally galvanizing and essential to smooth functioning of that team.

While governance documents vary by jurisdiction, their existence is critical to the ongoing operation of the governance model. APHSA summarized the importance and variation of foundational documents in this way:

> *A high-level charter issued by executive order of the governor or a legislative mandate to establish a governance structure and*

Established governance models vary in their levels of formality.

governing body and to begin the process with required report-back are the most powerful actions that will not only jump start the journey but also assure follow-through to implementation. Short of an executive order or legislative mandate, however, a state can look for existing Cabinet structures, interagency committees or task forces that could take on this work immediately.[6]

Examples of Formalized Governance Models: Established governance models vary in their levels of formality. New York City, for example, created a Mayoral executive order "that endorses the existence of this shared venture; the charter then serves as a high level shared vision document that officially commits all the agencies to sign on as being full partners in the endeavor."[7] San Diego County has a very formal structure, with a five-member elected board; a County Administrative Officer who manages Health and Human Services, Public Safety, Community Services, and land-use issues; a Director overseeing all of the Health and Human Services; and an executive team of 16 members. The Board of Supervisors legislatively approved a county ordinance that allowed leaders to create the governance structure and integrate funding. San Diego's Nick Macchione remembers that it did not begin as formally as it became:

Initially, it was really formed out of a consensus view of each of the stakeholders that we needed to do something different because we were just in a silo, and it was very important. There were enough people that had a critical mass of interest in moving this forward across the different silos and stakeholders that it simply gained momentum, but it wasn't an executive order to start.[8]

Governing bodies did not meet unless there was a legitimate business reason to do so and real decisions to make.

The State of Oregon formed the Joint Operations Steering Committee (JOSC), consisting of the Department of Human Services and the Oregon Health Authority executive and administrative staff. The JOSC created a charter, work plans, and a schedule of regularly occurring meetings. The JOSC is responsible for making decisions for shared services and other issues with potential impact on both agencies. Similarly, the Commonwealth of Virginia began with a strategic plan created by the agencies involved in its electronic Health and Human Resources (eHHR) program, a statewide initiative to transform human services delivery systems. From that plan, Virginia created a governance structure and other foundational documents. According to Mike Wirth, Special Advisor for eHHR integration, "The charter for eHHR is an authorized document. Each of the Project Oversight Committee (POC) members signed it, and any new project that gets created comes up in front of POC for review and empowerment."[9] Offering words of advice, Mike Wirth suggested, "Let me just throw in that, when you get to the charter, we made a conscious effort to clearly define the roles, responsibilities, and deliverables of each of the different agencies and/or secretariats."[10]

Operational Details

Operational details, such as meeting frequency, committee size, and membership composition vary as each jurisdiction's style and circumstance dictates. Samples of foundational documents, detailing many of the operational details for several jurisdictions, are included in the Toolkit section of this handbook.

Meeting Frequency: Beyond staffed PMOs that work together on a daily basis, the frequency of governance meetings varies across jurisdictions and models. Montgomery County, Maryland, for example, held bi-monthly meetings of its Health and Human Services Stakeholder Group. The county's Health and Human Services Steering Committee met monthly, or more frequently as needed, to drive the "no wrong door" interoperability project that created a seamless experience for clients accessing health and human services in the county.[11] Alternatively, federal Centers for Medicare & Medicaid Services (CMS) held teleconferences and annual in-person meetings tied to a national conference to accommodate its members across the nation. Between the quarterly calls, telephone subcommittee meetings were held monthly or even biweekly as dictated by the work. In all cases, governing bodies did not meet unless there was a legitimate business reason to do so and real decisions to make during the meeting.

Governing Body Composition: Across governance models, the size of the governing bodies also varies, depending on the number of agencies involved. In general, committees include one representative from each agency, either the agency head – which some jurisdictions mandated – or his or her designee. The initiative's top leader – whether that was the governor's appointee, the director(s) of health and human services, or another very senior individual – chairs the meetings. Some jurisdictions use an outside facilitator to run meetings.

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[1] Nick Macchione, phone interview, February 2013.

[2] Paul Wormeli, phone interview, February 2013.

[3] Linda Gibbs, phone interview, February 2013.

[4] Wormeli, phone interview.

[5] Rick Friedman, phone interview, February 2013.

[6] Cari DeSantis, *Governance Guidance for Horizontal Integration of Health and Human Services* (American Public Human Services Association, 2012).

[7] Gibbs, phone interview.

[8] Macchione, phone interview.

[9] Mike Wirth, phone interview, February 2013.

[10] Wirth, phone interview.

[11] Uma Ahluwalia, phone interview, February 2013.

Establish Clear Decision-Making Processes

Time to governance maturity is linearly proportional to the size of the stakeholder group. As the stakeholder group gets bigger, it takes longer to get everybody on the same path and accepted, particularly if it's a democratic process, and not somebody's attempt to dictate it. So, it just takes a while for people to get to the buy-in stage, and the more there are to buy-in, the longer it takes.

Paul Wormeli
Executive Director Emeritus, IJIS Institute

When jurisdictions charge groups with making collective decisions from an array of alternatives, the entire group – not an individual – must take ownership of the decisions. In order to make group governance decisions, the right people need to be at the table. Next, the group needs to establish a clear and well-articulated process to determine priorities and decide between various options presented.

Groups should establish decision-making processes with a high-level of detail. The group should write down the processes and share them internally. These decision-making processes should include: 1) guidelines for determining the type of decisions the steering committee will make and the type of decisions subcommittees, the PMO, or involved agency management will make; and 2) the method the governing body will use to discuss issues and come to agreement.

Getting the Right People at the Table

Governance committees form with the appointment of the most senior leaders from each of the represented agencies. In most instances, one individual officially represents each agency. If groups require the involvement of other individuals for subject-matter or other expertise, the groups often allow their participation. Rick Friedman shares thoughts on the importance of getting the right people to the table:

> *We had different folks from different firms and we wanted to make sure that we just didn't get one company's solution but rather enough of a consensus view that everybody could live with it. It was this ongoing dynamic model in each of the groups. Similarly, with the federal group, it was very important to have people representing the Food Stamp Program [Supplemental Nutrition Assistance Program (SNAP)] and the Administration for Children and Families [ACF] programs at the table. We really wanted to make this framework [the Medicaid IT Architecture (MITA)] something from which you could drop the M from MITA and add Food Stamps or ACF program components, and the basic principles would be as applicable to their environment as it was*

Consensus and majority voting are the two most common methods of decision-making.

to ours. No question, there were creative tensions all over the place – among the Feds – in terms of the different groups. But in the end, it worked out well.[1]

Member-Created Process

In addition to having the right people at the table, the governance committee members need to establish their own way of working together. According to several governance leaders, it is critical that the overall governing body establish its own decision-making rules, rather than relying on a model from another jurisdiction or having the rules handed to them. Paul Wormeli describes the reason for this self-regulation:

It's been important for the group to set its own decision-making rules to avoid common pitfalls such as micromanagement. Creating the rules creates buy-in and makes the rules work[2]

Making Decisions at the Right Level

Determining which decisions rise to the highest-level committee in the governance model is a critical step in establishing the decision-making process. Having a clearly articulated decision hierarchy helps leaders reduce role ambiguity, increases participant satisfaction, and quickens the pace of forward movement.

To be successful, governing bodies must have a role that is materially important, not merely symbolic. Elected officials or other senior leadership for the jurisdictions must give them the authority to make decisions on important matters of consequence, and others have to uphold their decisions. Jurisdictions also should avoid creating a system of micro-management, where decisions that should be made by IT and program staff inside of agencies are reviewed by the ESC. Instead, jurisdictions must put in place a hierarchy for decision-making and assign issues, based on that hierarchy, to the correct level of the governance structure for decision. Subcommittees can make lower-level decisions and provide assistance in determining which issues need to move up to the appropriate level of the governance model.

Paul Wormeli advises, "What you really need to do is to come up with a drawing of the components of the decisions that have to be made, and then you build committees, working groups – whatever you want to call them – to tackle the topics that have to be decided in the course of coming up with decisions about how to move forward."[3]

Prioritization

A governance process can also prioritize decisions and the creation of exchanges and other tools. There are always more initiatives than a

WHAT MATTERS

- The "right people" sit at the table, representing the involved agencies or programs.
- There is a clear and well-articulated process to determine priorities and decide between various options presented.
- The group promotes full buy-in and compliance by developing decision-making guidelines and sharing them internally.
- Each member's voice carries the same weight regardless of budget, number of stakeholders or clients, or other factors.
- Senior leadership of the jurisdiction vests in the governing body the clear authority to make decisions of consequence.
- Staff – in the form of a PMO and/or subcommittee members – carefully prepare materials for meetings of the governing body so that meetings are productive, governance members have full information, and participants can reach decisions quickly.

jurisdiction can accomplish at any one time. The cross-agency team that a jurisdiction assembles to govern needs to prioritize based on the real needs of the jurisdiction at that time, weighing factors like costs, return on investment, and clients served. According to Shell Culp, Chief Deputy Director at Office of Systems Integration for the State of California, those responsible in the governance structure "must make sure that the governing decision being made has relevance to the majority because if you're deciding things that aren't relevant to the people who are involved, you're on a slow path to death."[4] Culp further explains:

> *A frequent problem is that a program has the need for some kind of an automated system, and their need – to them – is more prescient than anybody else's need…so they let the CIO know, 'I've got this need, and you need to meet this need,' and of course there are five other program deputies that have a need that might be similar – might not be – but they have a need as well. So all of a sudden I've got six projects' concepts on my plate and I only have resources to keep the lights on and maybe do two projects.*[5]

Group Decision-Making Methods

Governing bodies have several choices when it comes to determining how they will make decisions. The following are some questions that governing bodies should ask themselves when developing decision-making procedures:

- Will they vote by consensus or majority?
- Are committee members allowed to send designees to meetings?
- Do all votes carry equal weight, or are some votes more important than others?
- Which committees possess actual decision-making authority and which ones, if any, serve a symbolic role?

Consensus vs. Majority: Majority voting and consensus represent the two most common methods of decision-making. While the literature and interviews most commonly cite consensus as the best decision-making method for group decisions, several successful governance models observed did use voting, and they set rules to determine how many votes constitute a "win."

Only one leader interviewed – Nick Macchione from San Diego County – cites voting as the sole decision-making method for the jurisdiction's governance. Robert's Rules of Order is an often-cited mechanism for

structuring the debate and achieve majority vote. According to Nick Macchione, "To approve our appropriations and budget requires a four vote approval. On other issues, it's a majority – three [votes] – but they're all equal among the five voting members."[6]

Consensus decision-making seeks the consent of all members or participants in order to arrive at a resolution that is accepted – if not fully supported – by all. Reaching a decision through consensus requires deliberation. It also requires a process to ensure that all voices, including dissenting voices, are heard. Successful governing bodies that make decisions by consensus find it to be a significant team-building experience that results in high-quality decisions. Their statements mirror the literature on consensus-building, which claims that the process of getting to consensus creates better decisions, better implementation, and better relationships among group members. NYC Deputy Mayor Gibbs states, "When the committee cannot reach decisions, they postpone meetings until further information is gathered. As of 2013, the committee made all of its decisions by consensus."[7]

Uma Ahluwalia of Montgomery County, Maryland, and Linda Gibbs of New York City both eloquently describe their use of consensus:

> ***Montgomery County, Maryland:*** *We've had a pretty good track record of getting to consensus, but that doesn't mean that there aren't minority opinions at times, or there isn't work that we have to do together to get to consensus. We don't always start at the same place, but there is definitely a willingness to hear each other out and to work towards consensus.*[8]

> ***New York City:*** *We don't have Aye's and No's; we don't take a vote. I don't want to say that everybody has a veto authority, but if one person says no, that could stop the whole thing. But it's never come to that. It's more informal and consensus driven. You work with the agencies that are the most concerned and you sort of just help them work through their issues until you get to an agreement.*[9]

On the other hand, the Commonwealth of Virginia and NIEM employ hybrid voting methods that combine majority and consensus approaches. For example, when a group does not reach consensus, it will resort to voting. The message that NIEM and the Commonwealth of Virginia communicate is clear: strive for consensus but have a plan in place in case it is not reached.

> ***Commonwealth of Virginia:*** *I don't think we've had any situation where we've had anything less than consensus, but the fact is*

that it is set up for majority rule, and I generally manage the meetings using fairly strict Robert's Rules of Order if need be[10]

NIEM: *Well, it really has turned out to work mostly by consensus. There's a charter that gives the option of one vote. If you have to come to a vote, majority wins. But it's following Robert's Rules officially…groups like that are much more effective if they operate by consensus, regardless of what rules they follow.*[11]

Designees: Most governance models require that agency leaders attend meetings rather than designees. Some leaders propose "no designee" rules to keep the initiative high priority, build cross-agency relationships, and move to decisions more quickly by having the final decision-makers in the room. Deputy Mayor Linda Gibbs, for example, sets a strict "commissioners-only" policy at meetings of her governance steering committee.[12] Here is what jurisdictions employing the "no designees" rule had to say:

Successful governance models require that leaders attend meetings rather than designees.

New York City: *We structured it in a way that keeps agency heads very engaged in the significant decisions being made. It is a commissioner-only meeting, meaning a principal-only meeting; you cannot send a delegate. If you can't attend, then your agency is not represented at the meeting. Otherwise, attendance gets bumped down to the next designee and the next designee until it's a meaningless meeting.*[13]

Montgomery County, Maryland: *We allow no designees, but members can, if there is a particular issue that needs further clarification, bring staff with them. But they cannot designate.*[14]

Minnesota: *We tried to make sure that there was a good balance…this is all director level folks so this is all high-level decision-makers. The people that are there can make calls.*[15]

CMS: *It really needed to be that person [the agency leader] at the table. It really wasn't acceptable to send a substitute, because we wanted to have people who could speak with some level of authority. I'm not saying that in every instance that that worked out, but that was the overarching, or at least one of the overarching principles to which we wanted to adhere.*[16]

Jurisdictions that do not employ a "no designee" rule do so for practical purposes, such as to expedite meetings or to accommodate the busy schedules of agency leaders. For example, in California in the early 2000s, the state created a governance board called the Technology Review Board with staff consisting of personnel from inside of the state Chief Information Officer's (CIO) office. Members of that governance board were agency secretaries of all of the 10 or 12 super agencies (overarching health and human services agencies) in California. Due to busy schedules and conflicting calendars, most of the agency secretaries delegated their authority to agency information officers.[17]

One Voice-One Vote: While the specific decision-making method does not appear to be a critical factor for success, it is critical that each vote is equally represented. No agency should hold more than one vote regardless of its importance. In other words, the opinion of each agency or stakeholder group around the table should carry the same weight regardless of the size of an agency's budget, its constituent base, or the charisma of its leadership. Paul Wormeli summarized the value of the rule:

> *I think, in general, that it works best if they can all agree that every agency has one vote, and that's all they have…you can't put numbers on the executive council based on the size of your client base or size of your budget…because in order to do what you need in each agency, [the agencies need] to feel equally enabled and empowered to participate.*[18]

Rick Friedman noted the reality of the occasional or unwritten imbalance of power: "I think we're all equal, but in the end one agency (Medicaid) was really the driver of the initiative. While we probably had greater influence, we knew it wasn't going to work if people felt that they didn't have a voice, and that their voice truly counted."[19]

Important Role of the PMO and Subcommittees

Finally, jurisdictions must not overlook the important role of the PMO and any subcommittees responsible for aiding the decision-making process. Because members of the governing bodies are also, in most instances, responsible for leading the agencies they represent, they are very busy people. The PMO and subcommittees can help to prepare the governing bodies for their decision-making roles. As part of the decision-making

process, the PMO's role includes creating agendas and meeting materials focused on actionable items. New York City, California, and Minnesota described the resulting efficiency of the meetings of governance:

> ***New York City:*** *We have a Board of Directors that meets regularly – every two months – with an agenda that's sent out in advance…we don't follow Robert's Rules of Order; it's much more informal than that. The way that we present the meeting…is intended to engage and provoke discussion, and we frequently pause and ask the approval of the group to move forward…so we don't sort of bore them to death with presentations and say goodbye. We actually say, 'Here's our strategy; here's our decision. Does anybody object?'*[20]

> ***California:*** *We did make decisions fairly smoothly. As you would expect, it looked a lot like a legislative proceeding where you've got the package that you're going to look at today…here is where the support is and here are the people who don't support it…here are the pros and here are the cons. So it looked very much like a legislative type of decision-making package, and it probably took about a year for people to get used to that.*[21]

> ***Minnesota:*** *We'll go through and those who need to get heard get heard. If we have to go out and get more information before we make a decision, we do. In fact, if something's urgent, but we still don't have quite all the information – whether it be a technical thing, a business thing, a financial thing – we'll say, 'OK, we'll meet in two weeks…we'll get together sooner if we have to.'*[22]

The PMO's role includes creating agendas and meeting materials focused on actionable items.

[1] Rick Friedman, phone interview, February 2013.

[2] Wormeli, phone interview.

[3] Wormeli, phone interview.

[4] Shell Culp, phone interview, February 2013.

[5] Culp, phone interview.

[6] Nick Macchione, phone interview, February 2013.

[7] Linda Gibbs, phone interview, February 2013.

[8] Uma Ahluwalia, phone interview, February 2013.

[9] Gibbs, phone interview.

[10] Bill Hazel, phone interview, February 2013.

[11] Wormeli, phone interview.

[12] Gibbs, phone interview.

[13] Gibbs, phone interview.

[14] Ahluwalia, phone interview.

[15] Tom Baden, phone interview, February 2013.

[16] Friedman, phone interview.

[17] Culp, phone interview.

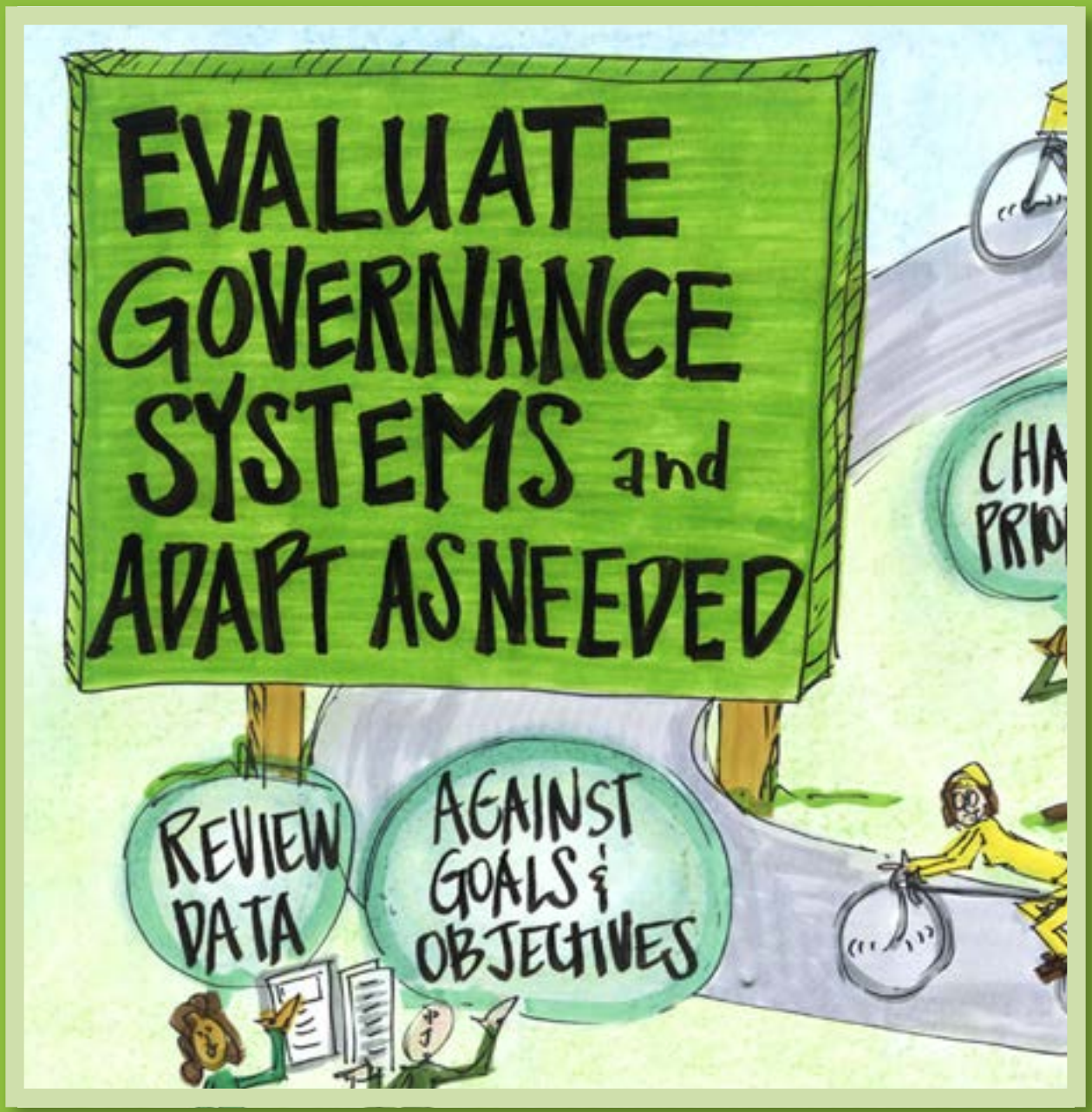
[18] Wormeli, phone interview.

[19] Friedman, phone interview.

[20] Gibbs, phone interview.

[21] Culp, phone interview.

[22] Baden, phone interview.



Evaluate Governance System and Adapt as Needed

At its most basic level, governance is a shared set of expectations for an organization or enterprise…an effective governance model guides decision makers in building an organizational structure that effectively supports the planning, development, oversight, and fiscal management activities that promote the enterprise.

Drew Leatherby
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To remain relevant, governing bodies must perform continuous self-assessment and environmental scans. They must rely on data to stay up to date on successes, failures, and new service needs. Governance models must be flexible enough to adapt to and address the needs of clients and jurisdictions while surviving intact through changes of administrations and fluctuating agency priorities. This delicate balance rests on maintaining buy-in from senior leadership, agency directors and their staffs. The governing body must also foster a culture of continued self-assessment and evaluation within and outside of the decision-making committees. Harvard Business School professor Herman "Dutch" Leonard highlights the importance of governance adaptability:

> *You can't really prepare for turmoil, you just have to adapt to it… so they always need to be adaptive…this means that they need to maintain 'situational awareness,' a grasp of the key elements of their environment. Second, it means that they need to rethink their approaches, severing themselves from things that used to work inventing things that will work now. Third, they have to implement change constantly.*[1]

Adapting Your Governance Process

Certain threats can compromise the relevancy of a governance system. For example, jurisdictions will endanger the relevancy of their efforts if progress is unacceptably slow; jurisdictions are raising issues and making decisions at the wrong level; meetings are not effective or well-attended; or leaders are not receiving the information necessary to make decisions. From the start, the governance model must incorporate a process for member reflection and feedback and then make the indicated process changes. This evaluation can happen after every meeting or less often, depending on the perceived need for feedback. During the initial establishment of a governance process, frequent assessment can keep the process moving in the right direction from the start. While the PMO can assist with assessment, external consultants can also be valuable for their expertise and neutrality in the process.

Leaders should rely on feedback from the group as well as their own observations to make corrections as needed. Montgomery County,

Maryland, offers a good example of of a jurisdiction adapting its governance process to meet its changing needs. There, the Process and Technology Modernization (PTM) Steering Committee initially allowed committee members to bring additional staff to regularly-scheduled meetings. This model ultimately led to committee meetings that felt impersonal and monotonous. Following an internal evaluation process, the committee restructured and instituted smaller, more interactive meetings that met on an as-needed basis. Of this strategic change, Uma Ahluwalia stated:

> *We're going to have this new framework for meetings where we're all much more structured and focused…a smaller group of people [the PTM Steering Committee]…will directly impact the decision-making…then we'll scan the stakeholder group for issues. But it's this group – the smaller group, the PTM Steering Committee – that's going to be the decision-makers.*[2]

WHAT MATTERS

- Governing bodies regularly review relevant data and other information against set goals and objectives.
- The governance structure adapts as appropriate to maintain relevance, interest, and long-term sustainability.
- Governing bodies know when to stay the course and when to change.

Adapting Priority or Focus

To set priorities and continually adapt, governance members need to clearly understand the mission and goals of the initiative that they govern. Involved agencies must then provide data to all members of the governing body on a regular and ongoing basis so that they understand the level of progress – or lack of progress – in achieving the goals. Governance members must use the data to set priorities, understand the initiative's effect, and to change course if indicated. Whether motivated by a crisis, the budget, or a careful look at data that reveals the need for programmatic changes, governance must remain flexible enough to reassess and re-order priorities while at the same time maintaining a clear vision and focus. This is a delicate balance, and governance models should not be swayed from course by political or programmatic whims; they should be open to the possibility that change may be necessary.

From his previous experience as the Chief Information Officer for the Department of Human Services in Oregon, Rick Howard clearly articulates this need for adaptability: "Agencies will remain somewhat fluid; no structure is permanent in government. Retaining flexibility in governance is important, and in the end, the people who are being served only care about the services being provided."[3] Changing priorities or focus may require jurisdictions to form new committees or sub-committees, engage additional subject-matter experts, and/or create work groups as needed.

Remaining Relevant for Long-Term Sustainability

The initiative and the governance model will be successful if they meet or exceed the performance of the system they replaced. This success means that the jurisdiction will retain these structures beyond the administration

that formed them." When a jurisdiction invests resources in its governance infrastructure, the jurisdiction also increases the level of interest it has in sustaining the initiative. Leaders can lay the ground work for long-term sustainability by:

- Carefully documenting the initiative's successes, particularly its return-on-investment;
- Promoting successes to stakeholders, involved agencies, local and national press, federal leaders, and beyond;
- Remaining non-political or not aligning with one political administration;
- Solidifying existence through legislation, executive order, or other more permanent means; and
- Securing budget authority or budget funding for the initiative's operation, including staff.

Leaders lay the groundwork for long-term sustainability.

Representatives of California and Minnesota address the importance of long-term sustainability despite changes in administration. Shell Culp states that governance needs to "figure out how you're going to make sure that you have some way to sustain that effort so that when the next secretary comes in, or the next Governor comes in, or somebody else comes in, you're not doing the sine wave of expansion and contraction of how you're doing your governance."[4]

Similarly, Minnesota's Thomas (Tom) Baden, Chief Information Officer of the Department of Human Services, says:

> *We had that changeover in administration – the changeover of people – and the same plan and the same organization worked like a charm. So I think a lot of it had to do with the sense of urgency of what we had to do plus great people. It had less to do with me being prepared and more to do with being lucky and having some really good people around.*[5]

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[1] Sean Silverthorne, "Achieving Excellence in Nonprofits," *Harvard Business School*, Oct. 27, 2008 (http://hbswk.hbs.edu/item/5942.html).

[2] Uma Ahluwalia, phone interview, February 2013.

[3] Rick Howard, phone interview, February 2013.

[4] Shell Culp, phone interview, February 2013.

[5] Tom Baden, phone interview, February 2013.

Maintain Transparent Communications

We've created an Office of Change Management that is really much more than an office. What we're recognizing is that any time one agency makes a change it could impact another agency. So we have processes that we're putting in place to ensure that everyone's communicating and no one does something that hurts their colleague.

Dr. William (Bill) Hazel
Secretary of Health and Human Resources, Commonwealth of Virginia

Projects serving the public must take care to maintain transparency regarding their decision-making procedures. Successful models maintain transparency of the governance process both internally (among those involved in governance and the participating agencies) and externally (with elected officials, stakeholders, and the broader general public). Anyone who might have an interest in its success or failure should have the appropriate level of information to ensure the initiative's ongoing success. The methods for sharing information vary by jurisdiction, but all jurisdictions should practice openness and a willingness to proactively maintain transparency.

Transparent communications create and maintain the culture of governance. In San Diego County, the culture is the driving force behind the initiative. Nick Macchione addresses the importance of culture:

> *I'm a firm believer that culture matters more than even having a good strategic mission statement and vision statement. They're important, but culture really was a huge driver, and this is what takes a lot of time…it's developing workplace competencies and skill sets of your workers…that just doesn't happen overnight*[1]

Potential communication methods include:

- Making meeting minutes and agendas available to the public.
- Holding regular meetings of committees and subcommittees with agendas designed both to inform and to move forward the critical work.
- Conducting open meetings or allowing additional non-voting participants to attend meetings.
- Using websites and other on-line forums to highlight progress and key initiatives.
- Holding stakeholder events in various locations around the jurisdiction.
- Preparing briefing documents to keep high-level leaders informed of relevant issues.

Representatives of the following jurisdictions highlight the importance of getting communications right from the start:

> ***Montgomery County, Maryland:*** *We have a history, most of the folks on this group; we have a long history of working together. I've been here a little over six years and during that time this group has been together with very few new members added. There's a core group that's been together, and there is enormous trust and willingness to work together…I think it helps that we meet every Friday just on the operations of the department. It's really key. One of the things that makes this possible – this very ambitious project – is the ability of the group to work together and the level of trust that exists…*[2]

> ***Virginia:*** *At least monthly, the key players are face-to-face in a room. They know where we are, and the bodies that watch us – the Auditor Public Account, the Attorney General's office, everybody – has an opportunity to be fully informed and engaged. So the purpose of the meeting is several-fold. But I would say: yes, we make decisions, and a lot of those decisions really are pretty obvious. Knowing that it's transparent is really important… everything gets done. There is no, 'I never knew.'*[3]

> ***Minnesota:*** *[The most important step is] making sure that there's the right level of knowledge…not so much that you churn over something for five hours and don't make a call…you manage the conversation well…you [get] the right level of facts; you [get] the right people at the table; you make a call, communicate it, and stick with it.*[4]

WHAT MATTERS

- That jurisdictions, from the start, create and implement governance communications plans that result in transparency and, ultimately, greater understanding and acceptance.
- That communications address both internal and external partners, stakeholders, and leaders.

Actively engaging stakeholders is critical to governance initiatives.

Stakeholder Participation

While not universal among governance models, several of the jurisdictions sought stakeholder input and participation. Those that involved stakeholders found it valuable in shaping and operating their initiatives. Montgomery County, Maryland's Project and Technology Modernization initiative, San Diego's Live Well, San Diego!, and the Illinois Framework included community stakeholders in the project governance process. Montgomery County consulted stakeholders – including service recipients and providers – throughout the planning phase of the process through a forum called the "Tiger Team."[5] The County also wrote stakeholder involvement into the formal governance structure to ensure that community members had a voice throughout the project. San Diego County took a different approach, bringing community service providers together with large technology companies (e.g., Microsoft, Hewlett-Packard, etc.) to develop an agenda for client-centered technology involving mobile computing and social networking.[6]

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[1] Nick Macchione, phone interview, February 2013.

[2] Uma Ahluwalia, phone interview, Illinois, July 2013.

[3] Hazel, phone interview.

[4] Tom Baden, phone interview, February 2013.

[5] Ahluwalia, phone interview.

[6] Wayne Hanson, "At Issue: It Governance Done Right," *Digital Communities*, June 4, 2012 (http://www.digitalcommunities.com/articles/At-Issue-IT-Governance-Done-Right.html).

Case Study:

Illinois Framework and the Path to Effective Governance

The story of the Framework for Healthcare and Human Services is the first example of a public-sector interoperability project utilizing this handbook. Using the best practices and governance attributes outlined in this handbook, the State of Illinois is creating an informed, effective governance process for the Framework and is learning its own lessons along the way.

What is the Framework?

The Framework is a seven-agency collaborative project focused on the development of a modern, horizontally integrated system to support the core processes of health and human service delivery: application, eligibility determination, casework, management of contracted service providers, and analytics. The Framework's key goals are as follows:

- Improve customer access to services.
- Establish a core set of shared business functions across agencies and programs, eliminating duplicative administrative processes.
- Provide a foundation to manage information, measure outcomes, and improve coordination across service areas, programs, and providers.

Although Framework partners only recently signed an Interagency Agreement (IGA) in 2012, the project has existed informally for over five years, having grown from just one agency to an initiative that spans the seven health and human service agencies in the State. Going forward, achieving the Framework's goals means establishing a new way of doing business. The process will take time and require an ongoing series of practical and theoretical decisions regarding policies, systems, authority, and responsibilities. The capacity to make these decisions and execute them over time requires all parties to agree and abide by a process. A consistent, effective, and equitable governance process is essential for the success of the Framework. A lack of a solid governance process or the lack of full commitment of the collaborative partners increases the risk of delays, costly mistakes, or project failure. Interoperability projects like the Framework require a formal governance structure that involves all affected agencies for both implementation and ongoing operations.

A one-year grant from the U.S. Administration for Children and Families (ACF) in 2012 funded the Framework to undertake deliberate research on governance, leading to the development and implementation of a governance process. The Framework incorporated the attributes of good governance into this process and additionally incorporated lessons learned from the experience of other successful projects.

Using the Roadmap as a Guide: Illinois Framework's Route

The Framework's governance is still in its infancy, as of this publication. The Framework's Executive Steering Committee (ESC) has started to convene at regular meetings. The sections below describe the Framework's process of developing a governance model by following the outline of the roadmap presented in this handbook. By tracing Framework progress toward establishing governance, this case study illustrates how a state might use this handbook as a guide during the early stages of developing its own governance model.

Identify and assemble strong executive leadership

WHAT MATTERS →

An effective leader with the ability to influence participating agencies.

Unlike many of the jurisdictions described as successful governance models in this handbook, Illinois does not have one individual who has centralized authority over the other members of the governing body. That is, because the Framework comprises seven separate agencies rather than one health and human services agency, no obvious leader emerges from the State's organizational structure.

The State's CIO serves as the chair of the Framework's governing body.

The State's Chief Information Officer (CIO) serves as the chair of the Framework's governing body—a position that is independent from any of the participating agencies—and is endowed with this leadership responsibility through the Framework's founding documents. With the State CIO as head of the Framework's governing body, the Framework forges an important link between the State's health and human services agencies and the Governor's Office.

For an interoperability project connecting information technology and systems across agency boundaries, this high-level leadership is a tremendous asset. Deneen Omer, Project Manager for the Framework Planning Project from vendor CSG Government Solutions, describes this leadership as "so valuable because his involvement gives the Framework recognition that this is an important set of work for the State to take on and that is emanating from the governor's office."[1] Because the responsibilities of the State CIO are not limited to health and human services, someone in this position may be better able to recognize the importance of engaging leaders across the governance structures, from the Agency Directors who sit at the highest levels to the technical experts who work as needed on project-specific tasks. Omer states:

> *A big thing I take away from [the State CIO] in institutionalizing this project in State government is the idea of what he calls the "ethos" — that this is the way we have to work together, this is the way we have to live in order for this to really work. As we were developing our recommendations as a team, it became very clear that we need to set some foundation, to lay out some principles that help to make that ethos alive. [The State CIO] recognizes that we have to do this in a way that will continue to live whether he is here or he is not, and that's a great thing to have in a leader.*[2]

As chair of the Framework's ESC, the State CIO has been a driving force in moving the initiative forward. In addition to efforts to formalize the Framework, the State CIO generates buy-in and acceptance among leaders of participating agencies.

WHAT MATTERS → **Active participation in governance activities by agency leaders.**

In agreeing to join the Framework and serve on its governing body, the Directors of all seven participating agencies and three associated major health and human service initiatives identified themselves as leaders who want to create meaningful change. The three major health and human services initiatives currently underway in Illinois are the modernization of the State's Medicaid Management Information Systems (MMIS), the implementation Health Information Exchange (HIE), and the initiatives that are part of the Affordable Care Act (ACA): Integrated Eligibility (IES) and Health Insurance Marketplace. As meetings of the ESC continue, the Framework PMO builds momentum through regular one-on-one meetings with Agency Directors, recognizing that providing leadership for the Framework is only one of these Directors' many responsibilities.

These meetings, which often include the State CIO, Framework Director, and Planning Project Manager, are designed to sustain Agency Directors' enthusiasm for the Framework and keep these leaders up-to-date on project progress. Individual meetings enable the Framework staff to better understand the challenges and concerns facing individual agencies and also help in identifying issues for discussion with the broader governing body. As Kathleen Monahan, Director of the Illinois Framework, observes,

> *Meeting with the Agency Directors in between the ESC meetings gives them information that helps them to understand the Framework and starts to demonstrate some of the benefits from the work the Planning Project has been doing. Hopefully, it gives them more reason to buy in; it doesn't force the buy-in, but it gives them more reason to engage in the process.*[3]

As the Framework moves forward, agency leaders will have the opportunity to champion the project within and outside of their agencies.

Create a shared vision

WHAT MATTERS → **A vision that is clearly articulated and enthusiastically supported by all those involved in its implementation.**

The Framework's vision statement is "A modern healthcare and human services system for Illinois."[4]

Though it does encapsulate Framework's broad goals, this written vision statement predates the Framework's governing body and only outlines the project's scope in the broadest sense. The ESC is still in the process of creating and agreeing to a shared vision that crosses agency boundaries. "The vision is on paper right now," Monahan says, "and I hope it will become integral to the work of the ESC in time. The question

of shared vision, one year from now, hopefully won't even be there. Agency Directors would hear about a project their staff wants to do and say 'We can't do that on our own, we need to bring that to the Framework.'"[5]

Building a culture that will move the Framework toward this new way of doing business requires time and trust. Agreeing to a broad vision of the future may be relatively easy because "a vision is a picture, a view, a place we want to go — it's not detailed or very specific, it's painted in more general terms. People can make their own assumptions about what that means," Omer explains. "That's good, you have to do that at first, but to make it matter to people, you ultimately have to make it real. And starting to take that picture down to the next level, and then the next level, that's where it gets scary, and it gets hard. For many people, the vision doesn't become real until you change something on their desktop."[6]

As a first step, the ESC will come together to agree on where exactly committee members want the Framework to go and on what common principles will help get it there. To support this process, the PMO developed recommendations—principles that capture the major themes from the planning project—for consideration by the ESC. These guiding principles, which also align with the areas identified by external stakeholders, will be presented to the ESC as a starting point for developing its vision and, ultimately, the group's charter.

If the committee members approve these principles and agree to this general vision, the next step will be to bring other agency staff into the process to drill down to the next level of the vision and paint a clearer picture of what the future will actually look like. Of the next ESC meeting, Omer says, "We want to be able to say to these agency leaders, 'Here's this fuzzy picture. Will you help us identify who we should be talking with? Who do you want to help make this real?'"[7]

Through this process, agency leadership and their staff are beginning to work together across boundaries to identify a more specific vision of the future of healthcare and human services in Illinois — a vision founded on a new, collaborative way of doing business.

Formalize governance structure

WHAT MATTERS →

A thoughtfully documented governance charter executed via executive order, inter-governmental agreement, memorandum of understanding, proclamation, or other foundational document.

The Framework's IGA, signed by the directors of all stakeholder agencies, lays out the mission and scope and details basic structural information about the Framework's governing bodies. The IGA is a significant accomplishment for the Framework, as it provides the formal justification for moving forward and commits agencies to following up on their involvement. In this way, an IGA may be preferable to other types of formalization, such as a mandate.

The IGA legitimizes agencies' commitment to financial and programmatic involvement.

Copies of the Framework's foundational documents, including the IGA and the Framework's proposed governance model, are included in the Toolkit section of this handbook. The IGA lays out the following components of the Framework governance structure:

Executive Steering Committee (ESC): According to the IGA, the Framework is to be governed by an ESC led by the State CIO and comprising Agency Directors, the Framework Director, and representatives from Central Management Services (CMS), the Governor's Office of Management and Budget (GOMB), and the three major healthcare technology initiatives: Medicaid Management Information System (MMIS), Health Information Exchange (HIE), and Affordable Care Act (ACA) efforts.

Members of the ESC are responsible for making high-level policy and finance decisions on Framework-related issues that cross agency boundaries and provide an opportunity to leverage State resources through agency coordination. As the executive governing body of the project, the ESC is also responsible for determining the project's strategic direction (e.g., its scope, objectives, and vision).

Project Management Office (PMO): Following the formalization of the Framework through the IGA, an official Project Management Office supports the development of the Framework. State project staff, as well as business and technical experts through the State's contracted vendor for the initial planning phase, operate the PMO. The PMO is responsible for the day-to-day operations of the project that are necessarily independent of any individual agency. Through

research and administrative support, the PMO facilitates the operations, helping to identify and inform decision-makers about broad themes and challenges faced across agencies.

Operational Committee (OC): The Operational Committee has existed in some form for several years. Prior to the Framework's formalization, the OC—made up of designated representatives from each of the Framework agencies, as well as other key stakeholders—was essentially the Framework's governing body. Under the new, official structure, this committee remains a critical piece of the governing process, serving as the forum for discussing important issues and determining recommendations to present to the ESC.

Subcommittees & Other Governance Support: In addition to the OC, the IGA notes that the Framework will be supported by Program Liaisons within each agency and Subject-Matter Experts to offer specialized legal, technical, and program-specific knowledge. The IGA does not explicitly create new subcommittees; however, the proposed governance model includes the recommendation that subcommittees meet on an ad-hoc basis to provide guidance and recommendations about decisions needed from the ESC. Though these subcommittees are not yet formed, proposed topic areas include Business Architecture, Enterprise Architecture, Legal, Privacy & Confidentiality, and Communications & Change Management.

WHAT MATTERS → **Identify risks and strategies to mitigate them.**

Like any project, the Framework will face risks and challenges. To ensure that these challenges do not become obstacles to progress, the Framework proactively identifies and assesses these risks. During the planning phase, the PMO initiated the process of identifying potential risks. As the facilitator of regular project meetings, the Planning Project Manager keeps a running agenda item regarding project risks and associated assessments. When appropriate, project staff addresses these risks. For example, the PMO will reduce potential agency concerns about privacy and confidentiality by preemptively holding meetings with legal counsel at every Framework agency. As the project moves into its next phase, the governing bodies will play a more active role in managing project risks, with subcommittees working through the difficult technical details and the ESC making the final decisions based on subcommittee recommendations.

Omer describes another example of a risk facing the Framework, regarding the structure of federal agency funding for Framework programs:

> *This is a risk because it could be an obstacle to agencies being able to work together, or thinking that they can work together. One of the things folks will say is that we have all these federal regulations and rules, and we can't do that. But we also know that the federal government wants us to be interoperable. It's a risk that we have all of these different federal agency regulations to work with, and that's not going to go away. So how do we*

deal with that? Part of dealing with a risk is just recognizing that it exists. You don't throw your hands up. You just say, "Okay, there's privacy, there's confidentiality, there are all sorts of things we need to deal with." Just recognizing that will help shape the action plans and inform them.[8]

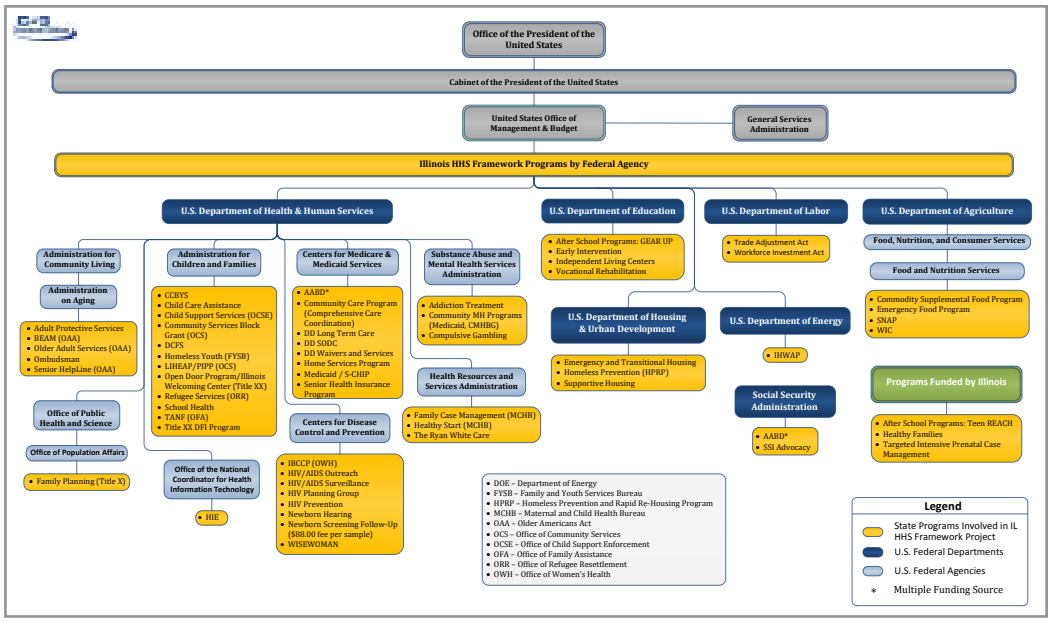

Figure 1: Illinois Framework Programs by Federal Agency Funding

Establish clear decision-making process

WHAT MATTERS →

Getting the right people at the table to make effective decisions.

Through its ESC, the Framework is beginning to gather the "right people" — that is, individuals within each Framework agency with the authority to make challenging, high-level decisions. As previously noted, the participation of the Agency Directors is described in the founding document. This step goes a long way toward ensuring that these decision-makers come to the table to strategize and move the project forward. To further engage the ESC and ease the transition into governance, the Framework invited an experienced national health and human services interoperability expert to facilitate these meetings.

However, the Framework still must determine who will sit on each of the subcommittees. Framework staff and ESC members will identify the right individuals to represent agency needs on the OC. The more highly specialized subcommittees must also be populated, each with the right experts to analyze the complicated business and technical decisions and work toward recommendations with their colleagues at other Framework agencies. Committee members will have meaningful and important tasks and decisions to ensure their continued engagement in the Framework.

WHAT MATTERS →

The group promotes full buy-in and compliance by developing decision-making guidelines and sharing them internally.

Though it has developed a proposed governance model, the Framework is still in the early stages of testing this decision-making process and determining its mechanics. As the above heading suggests, the ESC—not the IGA or the PMO–is responsible for determining that structure. During the first ESC meeting, Framework PMO staff briefed the ESC members on the results of the Framework's extensive governance research. As a result of this briefing, the group is aware of the best practices identified from the successful governance models discussed in this handbook. However, it is up to the ESC members now to choose to integrate these practices into the Framework's own governance model. Monahan explains:

> *We can't impose these best practices on the ESC. We're nudging a process that ultimately the members will have to own, and I hope that they will start to own this group bit by bit. If they decide to change some of the governance principles or the things they want to decide on, I'd be happy with that. It means they care about the process.*[9]

As the ESC begins to consider policy and financing questions about the Framework, these decision-makers will need to determine how they want to make group decisions. Who will raise issues for discussion? How will these issues be prioritized? At what level or stage should issues be brought up to the ESC or brought down to the OC or the subcommittees? How should the group determine its final say: by consensus, majority rule, or some combination of the two? Are ESC members allowed to send designees to represent them at governance meetings? If so, can designees vote in the decision-making process?

While the handbook has suggestions from the experience of other jurisdictions, Framework leadership will need time and their own experience to determine what is best for the Framework.

WHAT MATTERS →

A governing body vested with clear authority by senior leadership to make decisions of consequence.

As part of its broader decision-making process, the Framework's ESC is still developing a decision-making hierarchy. Both the ESC and the PMO agreed on the importance of ensuring that roles are not only clearly defined but also meaningful and respectful of the busy schedules of all involved. As the Framework begins the hands-on process of developing its decision-making protocol, those involved will need to pay attention to the engagement of individuals across the governance structure to identify what works.

WHAT MATTERS →

A clear and well-articulated process to determine priorities and decide between various options presented.

The documentation of any procedural decisions is an important step in establishing this new way of doing business. Framework PMO staff will be an asset in this regard, helping to identify steps in the ESC's member-generated decision-making process that

should be documented and formalized for future reference. Omer describes this as one of the most important parts of the PMO's role:

> *Often times, a group of people decide, "this is how we do things," or "this is what is going to be done," but it's not formalized in a way that can be understood by others once the original group of decision-makers are gone and others are left behind. And because government of course involves bureaucracy, I understand why people might tend to try to avoid more formalization, thinking it would just mean more paper work. So we have to try to balance both of these issues — to formalize the decisions that are made about how things get done in a way that is useful, to put them into writing so that others can look back and understand why and how things are done.*[10]

As decision-making standards are developed and shared throughout the governance structure, all involved parties are aware of how their role in the process contributes to the ultimate decision.

WHAT MATTERS →

PMO and/or subcommittee members carefully prepare materials for meetings of the governing body so that meetings are productive, governance members have full information, and participants can reach decisions quickly.

While the ESC makes the major decisions, the other parts of the governance structure will carry out the bulk of the work to inform these decisions. The OC plays a particularly important role in decision-making, tackling day-to-day issues and serving as a filter for issues and recommendations proposed for elevation to the ESC level. As a group, the OC members will iron out practical challenges and come to agreement on proposals worthy of ESC consideration. As Monahan puts it, these staff will be responsible for "hashing out what decisions need to be made in what order."[11] The more specialized subcommittees will also play an important role in this process, providing technical knowledge and expertise to inform recommendations as needed.

To support this work, the PMO will manage meeting logistics and assist as needed to help synthesize and package the analysis coming out of these committees. In addition to its role in documenting and institutionalizing decisions, Omer views the PMO as "helping to pull together all the different issues that relate to the topic at hand, facilitating the discussion of the topic at each level in the governance structure, and supporting the different layers of the governance structure as they work on identifying issues for further exploration."[12]

As the leader of the Framework's planning phase, the PMO is well prepared to provide this support. PMO staff have undertaken interviews with staff in the involved programs and agencies and mapped out the technical and business challenges and opportunities to address. As the governing bodies begin to consider issues and make decisions, the early findings from the PMO will inform these discussions. With knowledgeable staff independent of any one agency, the PMO will prepare options

and recommendations for governance meetings using information and themes from the other governance committees.

Evaluate governance systems and adapt as needed

WHAT MATTERS → **Governing bodies regularly review relevant data and other information relevant to goals and objectives.**

As the Framework governing body makes decisions, the PMO will support decision-makers by conducting intensive research, analysis, and documentation during the project's planning phase. As project staff reach conclusions and produce recommendations, this well-researched information will provide a starting point for a data-driven governance process.

WHAT MATTERS → **Governing bodies know when to stay the course and when to change.**

As it makes decisions, the ESC must evaluate results and consider changing course if needed. To move toward this sort of honest evaluation, the Framework will create a culture that fosters flexibility and introspection within governance. For a group of very busy individuals such as the ESC to want to take time to examine their progress and consider change, the group must see the process and the results as important to their agency and their clients.

As Omer puts it, "There have to be opportunities for people to step back on a regular basis and ask 'Is this really working like we want it to?' and then have the willingness and openness to change. But to do this, the people involved first have to feel ownership of the process to care enough about evaluating it."[13] If the Framework succeeds in creating a truly shared vision and a collaborative decision-making culture, self-assessment and adaptation should follow.

WHAT MATTERS → **Governance remains able to adapt, as appropriate and as indicated, to maintain relevance, interest, and long-term sustainability.**

The Framework has already demonstrated remarkable adaptability by expanding to include additional agencies and by securing the funds necessary to allow the project to evolve. The current efforts to leverage federal funding opportunities—including MMIS, HIE, and ACA—will ensure that healthcare and human service systems in Illinois are moving in the same direction as the federal dollars, helping the Framework to maintain relevance for all stakeholders.

The Framework's governance bodies will periodically undertake informal evaluations of their efforts as the project moves forward. In public sector projects, this sort of assessment is often reserved for times of transition from one administration to another, such as when the new staff comes in to manage projects. At other times, the State Legislature questions the purpose or activities of such projects. Though this sort of assessment has not challenged the Framework, it is preparing for such potential scrutiny from outside the project by basing its work on well-researched information and providing thorough documentation.

Maintain transparent communications

WHAT MATTERS →

Communications address both internal and external partners, stakeholders, and leaders.

The Framework sought extensive engagement with internal and external stakeholders throughout the planning phase and intends to dedicate continued focus under the guidance of the Framework's Communication and Change Management Division.

Throughout the planning phase, PMO staff met with Framework agency employees to understand each agency's unique systems and challenges. Following these meetings, the PMO presented its agency-specific findings to agency leadership. Framework staff also prepared thorough briefing documents and materials to ESC leadership in advance of Framework meetings and continues to prioritize preparation for such meetings.

The Framework also maintains open communications with community partners and stakeholders through the Stakeholder Engagement Project, managed by the Illinois Public Health Institute. Through this project, the Framework conducted a state-wide "listening tour" to provide information to stakeholders—including service recipients, providers, advocates, and State employees—and to gather input about the project.

WHAT MATTERS →

Transparent governance communications plans that result in greater understanding and acceptance.

The Framework has many outlets for communicating information about the project's progress. The project's website provides information to the public about planning, governing, and engagement efforts as well as about opportunities to register to attend the stakeholder engagement forums. Stakeholder engagement sessions serve to enhance transparency and increase buy-in, disseminating information to external

More than anything, building an effective governance process is about achieving momentum and sustaining the vision.

stakeholders and feeding back into the project the major conclusions from these listening sessions. For example, the conclusions from the first rounds of stakeholder engagement informed the recommended guiding principles put forth to the ESC, which will likely serve as the basis of the group's charter. As decisions are made through the Framework's governance process, Illinois will maintain transparency by informing stakeholders of the Framework's progress through this sort of outreach.

The Framework will ensure transparency through thorough documentation of meetings. The PMO is responsible for taking minutes at project and governance meetings and disseminating these minutes to all involved. As the governance process further develops—with agency staff serving on subcommittees and the operational committee—the PMO will continue to document and share notes on the project's progress across various levels to keep stakeholders and leaders informed.

LESSONS LEARNED

Though the Framework's governance process has only recently taken shape and begun to take action, the project staff has already learned some valuable lessons:

Cultivate an ethos. Though the project staff has worked hard to identify best practices for effective governance from other states, Framework staff members themselves cannot implement these best practices. More than anything, building effective governance is about achieving momentum with all those involved and sustaining each individual's buy-in. The culture, or ethos, of the project underlies all of its work and all of its decisions.

Be patient. The culture needed for effective governance takes time to form. When done correctly, a governance structure will involve many high-level stakeholders

with very busy schedules. It is only natural for project staff to want to move forward quickly and to feel some frustration when the governance process slows down due to logistical issues or low initial prioritization.

Continue to learn from and share with others. As highlighted throughout this handbook, the Framework learned a great deal from its conversations with leaders in other jurisdictions. The Framework continues to build these relationships through conferences and phone calls with others who are working on similar projects.

Kathleen Monahan elaborates on the governance lessons that she has learned thus far:

> *When we started talking with one of the Agency Directors about governance at the beginning of the project, she said, "That's going to be the hardest part." It is very difficult to impose even the best governance model onto a group that isn't a group yet — a group that hasn't decided "We're going to govern ourselves." I guess the thing I've discovered is that it's hard, and like everything else in state government, just keep chipping away at it. We just keep working. We keep meeting with the Agency Directors, we keep having ESC meetings, we keep working with them and focusing on what is important and what is in the best interest of the State.*[14]

Continue to build relationships with others who are working on similar projects.

[1] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[2] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[3] Kathleen Monahan in discussion with the Framework Interoperability Team, July 2013.

[4] Monahan, Kathleen (Project Director) and Illinois Interoperability and Integration Project Staff. *Illinois Framework Project*.

[5] Kathleen Monahan in discussion with the Framework Interoperability Team, July 2013.

[6] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[7] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[8] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[9] Kathleen Monahan in discussion with the Framework Interoperability Team, July 2013.

[10] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[11] Kathleen Monahan in discussion with the Framework Interoperability Team, July 2013.

[12] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[13] Deneen Omer in discussion with the Framework Interoperability Team, July 2013.

[14] Kathleen Monahan in discussion with the Framework Interoperability Team, July 2013.

Resource Library

This Resource Library contains the resources from which the Illinois Framework developed its understanding of best practices in good governance and interoperability. The resources below are divided into three categories: interviews, interoperability resources, and governance resources. The interviews include original recordings of phone calls with the subject-matter experts consulted for the writing of this handbook. Interoperability resources include reports, white papers, and websites related to cross-boundary information sharing initiatives. Finally, governance resources include publications and websites on the various types of governance, including information technology (IT) governance, nonprofit governance, and data governance. All documents and interviews can be found at illinoisframework.org/illinois-framework-resource-library/.

INTERVIEWS:

Ahluwalia, U. (2013). [Interview with Uma Ahluwalia, Director of the Department of Health and Human Services, Montgomery County, Maryland]. Uma Ahluwalia describes the governance structure for Montgomery County, Maryland's Department of Health and Human Services. (Audio File, 27:00 min.)

Baden, T. (2013). [Interview with Thomas Baden, Chief Information Officer of the Department of Human Services, State of Minnesota]. Tom Baden discusses the governance structure for the State of Minnesota Department of Human Services. Mr. Baden describes meeting structures, decision-making procedures, as well as other important components of a governing body. (Audio File, 34:00 min.)

Culp, S. (2013). [Interview with Shell Culp, Chief Deputy Director at the Office of Systems Integration, State of California]. Shell Culp describes the structure of the Enterprise Architecture in California and discusses the planned governance model of California's upcoming interoperability initiatives. (Audio File, 36:00 min.)

Friedman, R. (2013). [Interview with Rick Friedman, Former Director of the Division of State Systems, U.S. Department of Health and Human Services CMS/Medicaid]. Rick Friedman gives a detailed overview of his experience with the Medicaid Information Technology Architecture (MITA), providing insight into a governance and interoperability model at the federal level. (Audio File, 38:00 min.)

Gibbs, L. (2013). [Interview with Linda Gibbs, Deputy Mayor for Health and Human Services, New York City]. Deputy Mayor Linda Gibbs gives an overview of New York City's HHS-Connect project, describing its origin, the governance structure, and how the system utilizes interoperability to connect health and human services agencies. (Audio File, 47:00 min.)

Hazel, Dr. W. (2013). [Interview with Dr. William Hazel, Secretary of Health and Human Resources, Commonwealth of Virginia and Mike Wirth, Special Advisor on eHHR integration]. Dr. Bill Hazel and Mike Wirth describe the implementation of the Electronic Health and Human Resources (eHHR) system for the Commonwealth of Virginia. (Audio File, 33:00 min.)

Howard, R. (2013). [Interview with Rick Howard, Research Director, Gartner Government Industry Team]. Rick Howard discusses strategies for implementing governance around interoperability projects, citing examples from his experiences with Gartner and the Oregon Department of Human Services. (Audio File, 30:00 min.)

Macchione, N. (2013). [Interview with Nick Macchione, Director of the Health and Human Services Agency, San Diego County, California]. Nick Macchione gives an overview of San Diego County's Health and Human Services Agency's formal governance model, and their centered-set approach towards clients. (Audio File, 37:00 min.)

Wormeli, P. (2013). [Interview with Paul Wormeli, Executive Director Emeritus, Integrated Justice Information Systems Institute]. Paul Wormeli describes his experiences with the National Information Exchange Model (NIEM) and other initiatives

Refer to these resources to develop your own best practices in good governance and interoperability.

both in and outside the justice systems realm, and he also gives helpful insights regarding the implementation of new governance initiatives. (Audio File, 37:00 min.)

INTEROPERABILITY RESOURCES:

American Public Human Services Association. (2011). *Bridging the Divide: Leveraging New Opportunities to Integrate Health and Human Services.* This report lists strategies that states must take to achieve interoperability, such as establishing strong and committed leadership, engaging stakeholders, changing organizational culture to minimize silos, and focusing on consumer-centered approaches. The report includes case studies from other states working on interoperability initiatives.

Center for Technology in Government, State University of New York at Albany. (2009). *Factors Influencing Cross-Boundary Information Sharing: Preliminary Analysis of a National Survey.* This report summarizes the results of a national survey, conducted by the Center for Technology in Government, exploring cross-boundary information sharing in the public sector.

Gartner. (2008). *Enterprise Data Warehouse/Business Intelligence (EDW/BI) Project Update and Options.* This analysis provides an Options Analysis for the State of Texas' HHS Enterprise Data Warehouse/Business Intelligence Infrastructure (option 1) and HHS Research and Analytical Data Warehouse and Business Intelligence System (option 2). The commission evaluates the strengths and challenges of each option and provides a risk analysis for each type of governance: data, technology, IT investment prioritization, and overall project governance.

New York City Department of Health and Human Services. (2010). *HHS-Connect Roadmap 2.0.* New York City's HHS-Connect program will "break information silos through the use of modernized technology and coordinated agency practices to more efficiently and effectively provide Health and Human Services to New Yorkers." This document explains the importance of establishing a governance model with clear lines of responsibility and accountability and provides an organization chart with the HHS-Connect governance model.

Accenture. (2012). *Outcomes and Impact: Insights from the 2012 Human Services Summit at Harvard University.* This document provides a detailed account of the 2012 Accenture Human Services Summit, which gathered leaders from federal, state, and local human services organizations to share insights and leading practices, deconstruct opportunities and challenges, and discuss delivering human services in the future.

NIEM Project Management Office. (2007). *Introduction to the National Information Exchange Model.* This introduction to NIEM is designed to; a) provide a general description of how NIEM functions, b) describe the need for and value of NIEM as an enabler of enterprise-wide information sharing, c) provide an overview of key NIEM concepts; and d) identify near-term goals of NIEM.

U.S. Office of Child Support Enforcement. (2012). *Child Support Report- How Do We Manage Change?* This document contains an interview with Pamela Lowery, Director of the Illinois Division of Child Support Services, on the topic of managing change in the Office of Child Support Enforcement.

Oracle. (2012). *Leveraging Governance to Sustain Enterprise Architecture Efforts.* This report discusses attributes of high-quality enterprise architecture projects, including the role of governance as a driving force behind the adoption of new technology in corporations.

Stewards of Change. (2012). *Presentation of Key Findings and Recommendations from the 2012 Stewards of Change National Conference.* This webpage provides resources from Stewards of Change's 7th Annual Conference, a symposium that explored current trends, promising case studies, and innovative next practices from jurisdictions at the forefront of linking health and human services.

Stewards of Change. (2011). *From Field to Fed II: Linking Systems to Sustain Interoperability in Challenging Times.* The 6th annual Stewards of Change Symposium primer provides information describing their "Theory of Change" model, a means of organizing change and innovation within child welfare and human services.

U.S. Department of Health and Human Services: Administration for Children and Families (ACF). (2012). *Your Essential Interoperability Toolkit.* This toolkit aims to facilitate greater communication and service integration between State agencies and their health partners. The toolkit provides up-to-date information and resources to support the efforts of workers and agencies in order to better serve clients and achieve better outcomes. The toolkit content includes relevant policy, funding, and technology information.

U.S. Department of Health and Human Services: Administration for Children and Families (ACF). W***ebsite: Department of Health and Human Services Administration for Children and Families (ACF) Interoperability Initiative.*** The ACF Interoperability website provides a foundation for information relating to national interoperability projects and initiatives.

Stewards of Change. (2010). *National Interoperability Community of Practice (NICOP).* This brief explores the NICOP, created by Stewards of Change in 2010, for health and human services practitioners to share real-world experience and advance interoperability for consumer benefit.

Stewards of Change. Website: *National Interoperability Community of Practice (NICOP).* This communal website provides a place for colleagues across health, education, and human services to focus and support a national vision and strategy for interoperability. The site is meant to be a tool to help share information, hold discussions, present case studies, and interact with peers to ultimately improve client outcomes.

American Public Human Services Association (APHSA). Website: *National Workgroup on Integration.* This website houses information from the National Workgroup on Integration, including webinars, slides, and other resources about the integration of health systems and human services programs.

GovLoop. *Defining Human-Centric IT.* This info-graphic provides two options that envision the future landscape of government IT. It also describes the characteristics involved for a human-centric IT governance model.

GOVERNANCE RESOURCES:

NGA Center for Best Practices. (2009). *Overview of State Justice Information Sharing Governance Structures.* This report provides an overview of governance structures for justice information systems and includes a chart documenting specific state-by-state governance details, including how structures were created and managed.

Harvard Business School. (2008). *Achieving Excellence in Nonprofits.* This website documents a Q&A session with Harvard Business School professor Herman B. Leonard, who discusses challenges and proposed solutions in nonprofit governance.

American Public Human Services Association (APHSA). (2012). *Governance Guidance for Horizontal of Health and Human Services.* This report offers guidance to state and county leaders on how to establish an oversight body that sets the vision, strategic direction, desired outcomes, and policies to govern and support the planning, design, and implementation of an integrated health and human service system.

Aspen Advisors. (2011). *Managing Healthcare IS Supply and Demand: IT Governance Remains a Top Organizational Challenge.* This report examines the need for a strong governance model to prioritize initiatives, align projects and capital spending with key organizational priorities, establish the appropriate champions and sponsors to successfully drive the top priorities forward, and define ways to measure results.

Board Source. (2012). *Governance Documentation: Article, Bylaws, and Policies.* This overview discusses the importance and function of governance documentation and outlines categories of documentation, including organizational documents, internal guidelines, board processes, and reporting documents.

State of Colorado Governor's Office of Information Technology. *Executive Governance Committee (EGC) Overview for New Members.* This presentation explains how legislation established Executive Governance Committees (EGC) for all State-certified IT projects, outlines the EGC mission and how decisions are made, and describes the eight EGC committees that provide oversight for grouped State agencies.

Center for Technology in Government, State University of New York at Albany. (2012). *Governance Structures in Cross-Boundary Information Sharing: Lessons from State and Local Criminal Justice Initiatives.* This report identifies necessary components of governance structures for information sharing, based on interviews with representatives from four state and local criminal justice information sharing systems.

Center for Technology in Government, State University of New York at Albany. (2009). *Enterprise IT Governance in State Government: State Profiles.* This report reviews how states organize their enterprise IT governance frameworks, with in-depth examples from thirteen states to provide a broad picture of state enterprise IT governance efforts in the United States.

The Data Governance Institute. *The DGI Data Governance Framework.* A general overview of data governance, this document describes a ten-component process for implementing a data governance framework.

Washington State Community and Technical College. (2011). *CTC ERP Project- Governance Recommendations.* This presentation describes the background of the Washington State Community and Technical College Enterprise Resource Planning (ERP) project and presents governance recommendations for the project, including an organization chart, a delineation between governance focus and operations focus, and a description of the relationships between different governance entities.

Healthcare Information and Management Systems Society (HIMSS). (2012). *Effective IT Governance Needed for Successful Clinical Informatics Implementation.* This report defines IT governance and lists essential steps for creating an IT governance process.

Refer to these resources to develop your own best practices in good governance and interoperability.

State of Illinois Health Information Exchange Authority. (2012). *IL HIE Authority Data and Security and Privacy Committee – Governance and Duties.* This work plan gives an overview of the Illinois Health Information Exchange (HIE) Authority's structure, duties and powers, patient privacy and security, and the formation and duties of the Security & Privacy Committee.

GPS Group, Inc. (2008). *Implementing IT Governance.* This workbook explains industry and government best practices in IT governance, describing models such as COBIT, COSO, Six Sigma, and Prince2. Five major objectives are addressed for implementing an IT governance system: alignment of business and IT goals, establishing accountability, ensuring value delivery, improving IT services, measuring contributions of IT to business, and facilitating regulatory compliance.

The Independent Commission on Good Governance in Public Services. (2004). *The Good Governance Standard for Public Service.* This report describes the good governance standard, including its purpose, its core principles, and methods for putting the principles into practice.

Michigan Department of Information Technology. (2007), *Webinar: Michigan's Project Management and Governance Model Executive Summary.* This webinar describes the Michigan Department of Information Technology (MDIT), which was formed from 19 disparate agencies that needed to consolidate IT projects. It also the describes State's approach to implementing an IT governance model focused on accountability.

Sloan School of Management, Massachusetts Institute of Technology. (2002). *Don't Just Lead, Govern: Implementing Effective IT Governance.* This white paper describes how effective IT governance should look and how to make decisions in five domains: principles, infrastructure, architecture, investment, and prioritization.

National Association of Counties (NACo). (2010). *National Association of Counties Interoperability Governance Model.* With a focus on public safety, this report describes what good governance amongst multiple agencies should look like and explains the steps to make governance work. The report details the SAFECOM model of governance that helps to improve communications interoperability in the public safety sector.

National Association of Chief Information Officers (NASCIO). (2005). *We Need to Talk: Governance Models to Advance Communications Interoperability.* This brief looks at governance models that can advance communications interoperability. The brief explains that interoperability requires more than equipment and that open systems standards, critical incident management, training, and operational policies and procedures that govern interoperable communication systems are all critical to interoperability.

U.S. Department of Health and Human Services: Administration for Children and Families (ACF). (2012). *National Information Exchange Model: Human Services Domain Charter.* This Charter includes essential information for a project team, covering five areas: 1) NIEM overview; 2) ACF as the NIEM Human Services Domain Steward; 3) NIEM domain purpose, function, goals, and expected outcomes; 4) domain governance; and 5) domain performance measures.

U.S. Department of Homeland Security. (2012). *NIEM Testimony of Donna Roy.* This testimony was provided by NIEM Executive Director Donna Roy to the House Committee on Ways and Means, Human Resources Subcommittee. Executive Director Roy describes the governance and structure of NIEM and includes examples of how various levels of government use and interact with NIEM.

Board Source. (2005). *The Source: Twelve Principles of Governance that Power Exceptional Boards.* This excerpt outlines twelve governance principles that characterize boards that are not only responsible, but exceptional.

National Association for Chief Information Officers (NASCIO). (2005). *Connecting the Silos: Using Governance Models to Achieve Data Integration.* This brief considers the need for a governance structure before data integration, and provides several examples of how state and federal entities established their governance models in conjunction with data implementation. The document also provides an overview of the different components involved when implementing a governance initiative.

The IT Governance Institute. (2007). *COBiT 4.1.* This report provides information about COBiT (the Control Objectives for Information and Related Technology), a framework for linking IT to business requirements.

Department of Homeland Security. (2008). *Establishing Governance to Achieve Statewide Communications Interoperability: A Guide for Statewide Communication Interoperability Plan (SCIP) Implementation.* This document provides information on the role, systems, and operations of statewide governing bodies that are charged with improving communications interoperability across a state. The information is presented as a guide or a set of recommendations for developing a statewide communications interoperability governance methodology.

Governance Toolkit

The toolkit contains original governance documents developed by the Illinois Framework as well as examples from other jurisdictions including memoranda of understanding/agreement (MOUs/MOAs), charters, interagency agreements, and data release agreements. Charters provide models for steering committee structures and highlight operational guidelines for governing bodies. MOUs, MOAs, interagency agreements, and data agreements offer examples of how state and municipal agencies collaborate, and establish the requirements and responsibilities involved in interoperable partnerships. All documents listed in the Governance Toolkit can be found at illinoisframework.org/illinois-framework-resource-library/.

Allegheny County. (2001). *Allegheny Department of Human Services Data Release Agreement.* An agreement between the Department of Public Welfare (DPW) and the Allegheny County Department of Human Service (ACDHS) to allow the release of information to improve the coordination of service delivery to individuals and families served in both agencies.

Allegheny County. *Allegheny County Department of Human Services and Allegheny County Juvenile Probation Office Data Sharing and Data Release Agreement.* An Agreement between the Allegheny County Department of Human Services (ACDHS) and the Allegheny County Juvenile Probation Office (ACJPO) that permits the sharing of information about the youth for whom these agencies are individually and/or mutually responsible.

State of New York. (2005). *New York Data Sharing Agreement.* An agreement between the New York State Office of Children and Family Services and the New York State Department of Health that establishes an exchange of data, including client-specific information, to further the needs and objectives of each agency.

State of New York. (2007). *New York Data Sharing Agreement Amendment.* A data sharing agreement between the Department of Health and the Office of Children and Family Services that was amended to include information exchange related to children and Medicaid.

State of New York. *Memorandum of Understanding between the New York State Office of Mental Health (OMH) and the New York State Department of Correctional Services (DOCS).* An agreement between OMH and DOCS on the amount and level of mental health services required at each state correctional facility.

State of New York. (2007) *Memorandum of Understanding Concerning Medicaid Home and Community-Services Waiver Bridges to Health (B2H).* This MOU designates the New York State Department of Health as the single state agency for administering New York's Medicaid State Plan.

State of Colorado: Office of Information Technology. *Guidelines for Information Sharing.* This report sets out guidelines that have been developed in Colorado to standardize the approach for information sharing initiatives and to incorporate best practices with these efforts.

State of South Carolina. *Models for Change Information Sharing Tool Kit.* This document provides samples of formal agreements between and among agencies for the purposes of sharing information.

State of Illinois. (2012). *Interagency Agreement among the Department of Human Services, the Department on Aging, the Department of Children and Family Services, the Department of Commerce and Economic Opportunity, the Department of Public Health, the Department of Healthcare and Family Services, and the Office of the Governor Regarding the Illinois Healthcare and Human Services Framework Project.* This interagency agreement connects the Framework partners to facilitate the achievement of accessible, efficient, and integrated delivery of healthcare and human services.

City of New York, Office of the Mayor. (2008). *Inter-Agency Data Exchange Agreement.* This agreement establishes HHS-Connect, New York City's interoperability system, to facilitate data integration and exchange between existing agency-based information management systems.

These agreements and other docs can serve as examples for your interoperability governance projects.

New York City Office of the CIO for Health and Human Services. (2008). *HHS-Connect Executive Steering Committee Charter.* This charter details the guiding principles for New York City's interoperability initiative, HHS-Connect. Included within the charter are descriptions for decision-making processes, member roles and responsibilities, and operational guidelines.

Alameda County. (2010). *Master Agreement between the Oakland Unified School District and the County of Alameda Related to School-Based Support Services.* This agreement establishes the responsibilities of parties in support of school-based health and wellness services, formalizing and enhancing existing service provision to students in the Oakland Unified School District.

San Diego County. (2009). *Foster Youth Student Information System (FY-SIS)/Juvenile Web (J-WEB) Memorandum of Agreement.* The purpose of this agreement is to maintain and operate both the FY-SIS and J-Web databases, as well as improve outcomes for dependents and wards of the Juvenile Court by having up-to-date information and an efficient information exchange process.

Alameda County. (2011). *Memorandum of Understanding.* This MOU between the Alameda Health Care Service Agency (HCSA) and the Alameda County Social Services Agency (SSA) establishes an information exchange system in which the SSA will maintain associated components to sufficiently support the needs of the initiatives.

State of Colorado. (2010). *CCYIS Initiating Agency MOUs.* This appendix contains several MOUs from the State of Colorado.

State of Colorado. (2010). *Colorado Department of Human Services Memorandum of Understanding Between Division of Child Welfare Office of Children, Youth and Family Services and Division of Developmental Disabilities Office of Veterans and Disability Services.* The purpose of this MOU is to establish a system of referral for children, from birth to age two, who are victims of substantiated abuse or neglect, to the local early intervention system for screening and evaluation.

State of Idaho. (2007). *Memorandum of Understanding between the Division of Behavioral Health and the Division of Family and Community Services Regarding Infant and Early Childhood Mental Health Services.* The purpose of this MOU is to enhance the delivery of health and human services regarding the mental health services for children, from birth to age three, whose parents or others are concerned about their behavioral or social-emotional development.

State of Indiana. *Memorandum of Understanding between the Indiana Department of Health and Indiana Family and Social Services Administration.* The purpose of this MOU is to establish a mutual understanding of the roles and responsibilities of the involved parties with all current and future data exchanges.

State of Iowa. (2012). *Data Sharing Memorandum of Understanding between Sioux City Community Schools, and Iowa Department of Human Services Western Service Area, and Iowa Third Judicial District Juvenile Court Services.* This MOU requires the involved parties to facilitate the sharing of data and define the terms and conditions of governing the exchange and disclosure of confidential data between agencies.

Jefferson County, Colorado. *Memorandum of Understanding Pursuant to House Bill 04-1451.* This MOU discusses a collaborative approach to the delivery of services to children and families.

Oregon Department of Human Services. (2005). *Memorandum of Understanding between the Oregon Department of Education and the Office of Mental Health and Addiction Services.* The purpose of this MOU is to develop and enhance the collaborative relationship between the involved parties by agreeing to and investing in a statewide system initiative.

These agreements and other docs can serve as examples for your interoperability governance projects.

Oregon Department of Human Services & Oregon Health Authority. (2011). ***Joint Operations Steering Committee Charter.*** This Charter details the purpose, background, and role of the Joint Operations Steering Committee (JOSC), which is an internal leadership and governance body of the Oregon Department of Human Services and Oregon Health Authority.

Oregon Department of Human Services & Oregon Health Authority. (2011). ***Joint Policy Steering Committee Charter.*** This Charter outlines the purpose, background, and role of the Joint Policy Steering Committee (JPSC), which is to provide policy and strategy direction to the Joint Operations Steering Committee (JOSC).

Sacramento County, California. ***Amended Memorandum of Understanding between the County of Sacramento Department of Health and Human Services (DHHS) and Sacramento Housing and Redevelopment Agency (SHRA) to Fund Supportive Housing for Homeless People with Psychiatric Disabilities.*** This MOU establishes the Building Hope Fund, describes the responsibilities of the two agencies for creating low-income housing, and provides a mechanism for the transference of the Fund from DHHS to SHRA.

San Diego County, California. (2009) ***Memorandum of Understanding.*** This MOU defines the boundaries of information sharing between the Multi-Systems Workgroup.

San Diego County, California. (2011). ***Foster Youth Student Information System (FY-SIS) Memorandum of Agreement.*** The purpose of this MOA is to maintain the FY-SIS database and to gather and provide up-to-date demographic, education, and health information.

Solano County, California. (2010). ***First Amendment to Memorandum of Understanding Health and Social Services: Child Welfare Services and Public Health Divisions.*** This MOU, regarding integrated systems in preventive and public health services for children, was amended for extension and budgetary changes.

State of Texas. (2007). ***Memorandum of Understanding between the Texas Department of Criminal Justice, the Texas Health and Human Services Commission, Community Mental Health and Mental Retardation Centers, and Community Supervision and Corrections Departments.*** The purpose of this MOU is to document the parties' understanding regarding the establishment of a continuity of care system for offenders with mental illness or mental retardation.

State of Texas. ***Memorandum of Understanding Texas Partnership for Family Recovery.*** This Partnership MOU defines the mission of five agencies to build and sustain integrated and coordinated mental health and substance abuse policies, protocols, and tools for children and families who are involved with the judicial and Child Protective Services (CPS) systems.

State of Texas. (2006). ***Memorandum of Understanding for Coordinated Services to Persons Needing Services from More than One Agency.*** This MOU provides for the implementation of a statewide system of county-based, multi-agency community resource coordination groups to provide services for persons of all ages needing multi-agency services.

State of Utah. (2007). ***Memorandum of Understanding for Coordinated Services with the Department of Human Services, Department of Health, Office of Education, Administrative Office of the Courts and the Department of Workforce Services.*** This MOU was created to provide a foundation for agency personnel to deliver coordinated services to eligible families, and to promote consistent statewide delivery, reporting, and data sharing methods.

State of Utah. (2009). ***Memorandum of Understanding.*** This MOU defines the individual and joint obligations of the Administrative Office of the Courts (AOC) and the Utah Department of Human Services (DHS) to develop and implement an interface between each agency's information systems.

Commonwealth of Virginia. ***Virginia Memorandum of Understanding.*** The purpose of this MOU is to establish and commit the Department of Social Services, the Department of Mental Health, Mental Retardation, and Substance Abuse Services, the Office of the Executive Secretary, and the Supreme Court of Virginia to work to together to develop and improve the state and local infrastructure to support the collaborative works of local agencies and courts on behalf of children and families.

Commonwealth of Virginia. ***Virginia's Restricted Data Use Agreement.*** This agreement allows for the collection and analysis of personally identifiable information.

Commonwealth of Virginia. (2012). ***Commonwealth of Virginia eHHR Program: Program Charter.*** This Program Charter gives a detailed description of the scope, objective, and participants in the Virginia electronic Health and Human Resources (eHHR) Program. It provides a delineation of roles and responsibilities, outlines the project objective, identifies the main stakeholders, and identifies the authority of the program manager.

ILLINOIS FRAMEWORK

Share your challenges and successes with others.

Conclusion

Illinois is one of a handful of states in the forefront of a movement to create interoperable systems across Health and Human Services. Interoperability—born out of a tremendous need to improve the quality and efficiency of healthcare and human services—has gained momentum in the past several years, and it continues to move swiftly across the country because of visionary leadership, advancing technology, and the passage of the Patient Protection and Affordable Care Act of 2010.

It is easy for states and counties involved in the myriad tasks of interoperability to overlook governance. Illinois hopes that this handbook will help each jurisdiction prioritize governance and create a governance model that is tailored for its unique circumstances. As Illinois continues to move forward, the state will likely make mistakes, change course, and incorporate new strategies in an ongoing effort to create the best for governance for the Illinois Framework and the people it serves. Continue to watch Illinois closely and, as Illinois has done, share your own challenges and successes with others.

Good luck.

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The handbook is available both in print and interactive on-line versions. To order print copies, please send your request to DHS.HHSFramework@Illinois.gov. The online version can be found at www.illinoisframework.org.

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The Office of the National Coordinator for Health Information Technology

Connecting Health and Care for the Nation:

A 10-Year Vision to Achieve an Interoperable Health IT Infrastructure

Overview

The U.S. Department of Health and Human Services (HHS) has a critical responsibility to advance the connectivity of electronic health information and interoperability of health information technology (health IT). This is consistent with its mission to protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves. This work has become particularly urgent with the need to address the national priority of better and more affordable health care, leading to better population health. Achieving this goal will only be possible with a strong, flexible health IT ecosystem that can appropriately support transparency and decision-making, reduce redundancy, inform payment reform, and help to transform care into a model that enhances access and truly addresses health beyond the confines of the health care system. Such an infrastructure will support more efficient and effective systems, scientific advancement, and lead to a continuously improving health system that empowers individuals, customizes treatment, and accelerates cure of disease.

In the past decade, there has been dramatic progress in building the foundation of a health IT infrastructure across the country that is resilient and flexible to accommodate many types of change. Through deliberate policy and programmatic action, the majority of meaningful use[1] eligible hospitals and professionals have adopted and are meaningfully using health IT. This progress has laid a strong base upon which we can build. However, there is much work to do to see that every individual and their care providers can get the health information they need in an electronic format when and how they need it to make care convenient and well-coordinated and allow for improvements in overall health. There is no better time than now to renew our focus on a nationwide, interoperable health IT infrastructure – one in which all individuals, their families, and their health care providers have appropriate access to health information that facilitates informed decision-making, supports

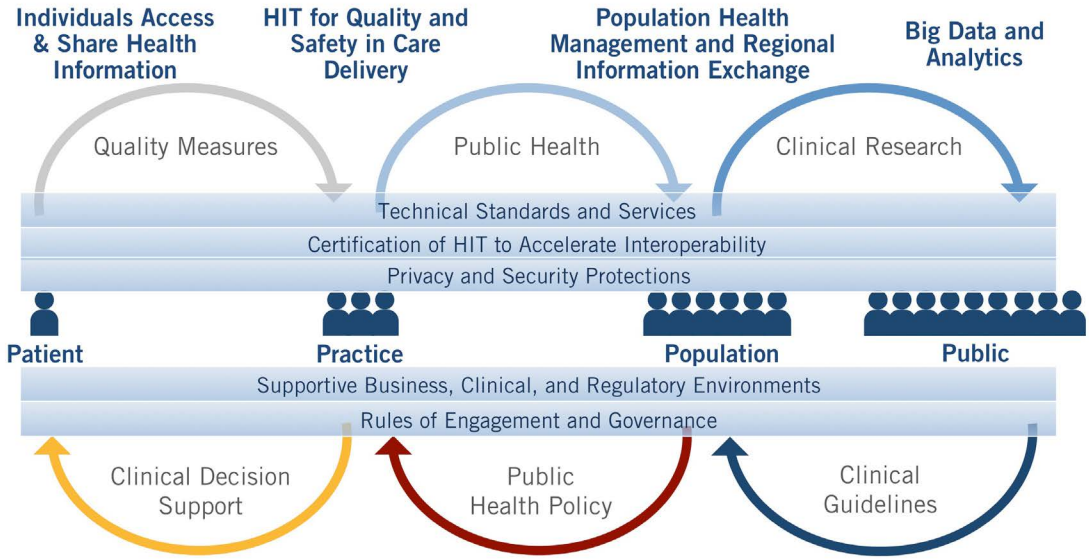
[1] Formally referred to as the Medicare and Medicaid EHR Incentive Programs

coordinated health management, allows patients to be active partners in their health and care, and improves the overall health of our population. This is not just a technology challenge.

Broad adoption of health IT will require that health information can be easily and appropriately shared to support multiple uses. For instance, the national priority of cost-effective care requires information about quality and use of services to be available to consumers, providers, payers, and employers. Further, physicians expect health IT to enable and support patient care. And finally, there is mounting interest by consumers and innovators in creating meaningful opportunities for individuals to partner in their own health care.

New technology and market changes have opened the door to creating a more integrated and flexible environment that will not only serve us better in the present day, but will allow for ongoing innovation in the future. This paper is an invitation to health IT stakeholders – clinicians, hospitals, public health, technology developers, payers, researchers, policymakers, individuals, and many others – to join ONC in figuring out how we can collectively achieve interoperability across the health IT ecosystem (Figure 1).

Figure 1. Health IT Ecosystem



Vision for the Future

An interoperable health IT ecosystem makes the right data available to the right people at the right time across products and organizations in a way that can be relied upon and meaningfully used by recipients. By 2024, individuals, care providers, communities, and researchers should have an array of interoperable

health IT products and services that allow the health care system to continuously learn and advance the goal of improved health care. This "learning health system" should also enable lower health care costs, improved population health, truly empower consumers, and drive innovation. For example, all individuals, their families, and care providers should be able to send, receive, find, and use health information in a manner that is appropriate, secure, timely, and reliable.[2]

Individuals should be able to securely share electronic health information with care providers and make use of the information to support their own health and wellness through informed shared decision-making. An interoperable health IT ecosystem should support critical public health functions such as real-time disease surveillance and disaster response, and data aggregation for research and value-based payment that rewards higher *quality* care, not necessarily a higher *quantity* of care.

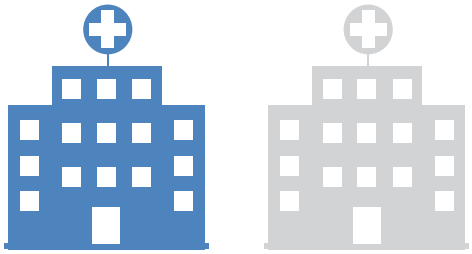
CONTEXT

The nation has made dramatic advancements in digitizing the care delivery system during the past decade:

- Over one-half of office-based professionals and more than 8 in 10 hospitals are meaningfully using electronic health records (EHRs), which will require them to electronically exchange standardized patient information to support safe care transitions (Figure 2).[3]
- One-half of hospitals are able to electronically search for patient information from sources beyond their organization or health system (Figure 3).[4]
- All 50 states have some form of health information exchange services available to support care.[5]

Figure 2.
Hospitals and Professionals That Have Demonstrated Meaningful Use of Certified EHR Technology 2014

Figure 3.
U.S. Hospitals' Capability to Electronically Query Patient Health Information from Outside Their Organization or System 2013



[2] The term "care providers" is broadly inclusive of the care continuum, reflecting primary care providers, specialists, nurses, pharmacists, physical therapists and other allied care providers, hospitals, mental health and substance abuse services, long- term and post-acute care facilities, home and community-based services, other support service providers, care managers, and other authorized individuals and institutions.

[3] http://www.healthit.gov/facas/sites/faca/files/HITPC_Data_Analytics_Update_2014-04-08.pdf

[4] Office of the National Coordinator for Health Information Technology. 'U.S. Hospitals' Capability to Electronically Query Patient Health Information from Outside Their Organization and System,' Health IT Quick-Stat, no. 25. April 2014

[5] http://healthit.gov/policy-researchers-implementers/state-hie-implementation-status

- Through the Blue Button Initiative, more than half of individual consumers and patients are able to access at least some of their own health information electronically via the combined contributions of providers, health plans, pharmacies, and labs.[6] Technological innovations such as wearable devices, remote sensing devices, and telehealth support at-home and virtual care models and new roles for patients.

This significant progress has created a growing demand for interoperability that not only supports the care continuum, but supports health generally. Electronic health information needs to be available for appropriate use in solving major challenges such as providing more effective care and informing and accelerating scientific research. Despite significant progress in establishing standards and services to support health information exchange and interoperability, it is not the norm that electronic health information is shared beyond groups of health care providers who subscribe to specific services or organizations. This frequently means that patients' electronic health information is not shared across organizational, vendor and geographic boundaries. Electronic health information is also not sufficiently standardized to allow seamless interoperability, as it is still inconsistently expressed with vocabulary, structure, and format, thereby limiting the potential uses of the information to improve health and care. We must learn from the important lessons and local successes[7] of previous and current health information exchange infrastructure to improve interoperability in support of nationwide exchange and use of health information across the public and private sector.

Guiding Principles

As we work toward this vision for the future interoperable health IT ecosystem, we will plan and execute our work to align with a set of guiding principles:

- **Build upon the existing health IT infrastructure.** Significant investments have been made in health IT across the care delivery system and in other relevant sectors that need to exchange information with individuals and care providers. To the extent possible, we will encourage stakeholders to build from existing health IT infrastructure, increasing interoperability and functionality as needed.
- **One size does not fit all.** Interoperability requires technical and policy conformance among networks, technical systems and their components. It also requires behavior and culture change on the part of users. We will strive for baseline interoperability across health IT infrastructure,

6 See http://bluebuttonconnector.healthit.gov/ to learn which data holders are offering electronic access to personal health data by consumers.

7 See http://www.healthit.gov/policy-researchers-implementers/hie-bright-spots for examples of lessons and successes from recent health information exchange efforts.

while allowing innovators and technologists to vary the user experience (the feel and function of tools) in order to best meet the user's needs based on the scenario at hand, technology available, workflow design, personal preferences, and other factors.

- **Empower individuals.** Members of the public are rapidly adopting technology to manage numerous aspects of their lives, including health and wellness. However, many of these tools do not yet integrate information from the health care delivery system. Health information from the care delivery system should be easily accessible to individuals and empower them to become more active partners in their health just as other kinds of data are empowering them in other aspects of their lives.

- **Leverage the market.** Demand for interoperability from health IT users is a powerful driver to advance our vision. As payment and care delivery reform increase demand for interoperability, we will work with and support these efforts.

- **Simplify.** Where possible, simpler solutions should be implemented first, with allowance for more complex methods in the future.

- **Maintain modularity.** Complex systems are more resilient to change when they are divided into independent components that can be connected together. Because medicine and technology will change over time, we must preserve systems' abilities to evolve and take advantage of the best of technology and health care delivery. Modularity creates flexibility that allows innovation and adoption of new, more efficient approaches over time without overhauling entire systems.

- **Consider the current environment and support multiple levels of advancement.** Not every clinical practice will incorporate health information technology into their work in the next 3-10 years, and not every practice will adopt health IT at the same level of sophistication. We must therefore account for a range of capabilities among information sources and information users, including EHR and non-EHR users, as we advance interoperability. Individuals and caregivers have an ongoing need to find, send, receive, and use their own health information both within and outside the care delivery system and interoperable infrastructure should enable this.

- **Focus on value.** We will strive to make sure our interoperability efforts yield the greatest value to individuals and care providers; improved health, health care, and lower costs should be measurable over time and at a minimum, offset the resource investment.

- **Protect privacy and security in all aspects of interoperability.** It is essential to maintain public trust that health information is safe and secure. To better establish and maintain that trust, we will strive to ensure that appropriate, strong, and effective safeguards for health information are in place as interoperability increases across the industry. We will also support greater transparency for individuals regarding the business practices of entities that use their data, particularly those that are not covered by the HIPAA Privacy and Security Rules.

Three-Year Agenda:
Send, Receive, Find, and Use Health Information to Improve Health Care Quality

We will develop an interoperability roadmap as articulated in HHS Principles and Strategy for Accelerating Health Information Exchange. Working with all stakeholders, we will fine-tune and use the health IT infrastructure enabled through implementation of the Health Information Technology for Economic and Clinical Health (HITECH) Act to support transformation of health care to a more patient-centered, less wasteful, and higher quality system. This near-term priority involves improving the interoperability of existing health information networks, and scaling existing approaches for fluidly exchanging health information across vendor platforms to support a broad array of transitions of care and public health. Ensuring that individuals and care providers send, receive, find, and use a basic set of essential health information[8] across the health care continuum will enhance care coordination and enable health system reform to improve care quality. This means focusing on query-based health information exchange, or the ability to appropriately search for and retrieve health information, in addition to point-to-point information sharing.

Through ONC's standards and certification processes, we will work to further standardize the vocabulary and structure of essential information. We will also address critical issues such as data provenance, data quality and reliability, and patient matching to improve the quality of interoperability, and therefore facilitate an increased quantity of information movement. Working with stakeholders, we will operationalize a common framework to enhance trust by addressing key privacy, security, and business policy and practice challenges to advance secure, authorized health information exchange across existing networks. Finally, we will work with federal and state entities to advance payment, policy, and programmatic levers that encourage use of this information in a manner that supports care delivery reform, improves quality, and lowers costs.

Figure 4:
Example three-year agenda use cases:*

Individuals look up their electronic immunization histories when needed.

Primary care providers share a basic set of patient information with specialists during referrals; specialists "close the information loop" by sending updated basic information back to the primary care provider.

Hospitals automatically send an electronic notification and care summary to primary care providers when their patients are discharged.

**These examples are meant as illustrations and are not meant to provide a comprehensive list.*

8 The basic set of essential health information builds from the common meaningful use (MU) data set incorporated into ONC's health IT certification program as part of the 2014 Edition EHR Certification Criteria and currently used to support three MU objectives included in the Medicare and Medicaid EHR Incentive Programs.

Six-Year Agenda:
Use Information to Improve Health Care Quality and Lower Cost

Over the next six years, the care delivery system will realize enhanced interoperability. Health IT will continue to enable individuals to be active participants in managing their care as an important contributor of information to the health record (e.g., patient experience, self-rated health, and self-generated data). Individuals, care providers, and public health departments will send, receive, find and use an expanded set of health information across the care continuum to support team-based care. Care providers, such as those in schools, ambulances, and prisons will be able to appropriately exchange and use relevant health information. Remote monitoring will be enabled through better interoperability between medical devices, home-monitoring tools, and health information technology, including EHRs. Multi-payer claims databases, clinical data registries, and other data aggregators will incrementally become more integrated as part of an interoperable technology ecosystem.

Health care providers will also be able to aggregate and trend information within and across groups of patients based on information from multiple data sources to monitor health disparities and quality improvement opportunities (population health management). As value-based payment gains traction across Medicare, Medicaid, and commercial payers and purchasers, there will be new methods of measuring clinical quality that represent the most important aspects of care delivery and health outcomes. We will work with stakeholders to refine standards, policies, and services to automate the continuous quality improvement process and deliver targeted clinical decision support that fits into a clinician's workflow to close care gaps and improve the quality and efficiency of care.

Figure 5:
Example six-year agenda use cases:*

Individuals regularly contribute information to their electronic health records for use by members of their care team.

Individuals integrate data from their health records into apps and tools that enable them to better set and meet their own health goals.

Primary care providers and authorized researchers are able to understand how well controlled diabetic patient population's glucose levels (i.e., A1C values) are and how often those patients have been hospitalized based on standardized information from multiple sources.

Clinical settings and public health are connected through bi-directional interfaces that enable seamless reporting to public health departments and seamless feedback and decision support from public health to clinical providers.

**These examples are meant as illustrations and are not meant to provide a comprehensive list.*

10-Year Agenda:
The Learning Health System

By year 10, the nation's health IT infrastructure will support better health for all through a more connected health care system and active individual health management. Information sharing will be improved at all levels of public health, and research will better generate evidence that is delivered to the point of care. Advanced, more functional technical tools will enable innovation and broader uses of health information to further support health research and public health.

The evolution of standards, policies, and data infrastructure over the next 10 years will enable more standardized data collection, sharing, and aggregation for patient-centered outcomes research. Continuous learning and improvement will be feasible through analysis of aggregated data from a variety of sources. Health IT systems will enable both analysis of aggregated data and use of local data at the point of care through targeted clinical decision support (CDS). CDS will improve care by taking into account information such as an individual's genetic profile, local trends in disease prevalence, antibiotic resistance, occupational hazards, and other factors.

The process of clinical trial recruitment, data collection, and analysis will be accelerated and automated. Retrospective analyses will allow for rapid inquiry around many aspects of public health, health care quality, outcomes, and efficiency. Public health surveillance will be dramatically improved through better outbreak detection and disease incidence and prevalence monitoring. Interoperable health IT will also help contain outbreaks and manage public health threats and disasters.

The nation's health IT infrastructure will facilitate health improvement through active individual health management, improved information sharing with public health, and the ability for research to generate evidence that is delivered to the point of care.

Figure 6:
Example 10-year agenda use cases:*

Individuals manage information from their own electronic devices and share that information seamlessly across multiple electronic platforms as appropriate (health care providers, social service providers, consumer-facing apps and tools, etc).

Primary care providers can select effective medications for patients with certain conditions based on their genetic profiles and results of comparative effectiveness research.

Individuals, care providers, public health and researchers contribute information and learn from information shared across the health IT ecosystem, with rapid advancement in methods for deriving meaning from data without sharing PHI.

**These examples are meant as illustrations and are not meant to provide a comprehensive list.*

How will we get there?

It will take a strategic and focused effort by the federal government, in collaboration with state, tribal, and local governments and the private sector. We will aim to develop a shared agenda that focuses on five critical building blocks for a nationwide interoperable health information infrastructure:

1. Core technical standards and functions
2. Certification to support adoption and optimization of health IT products and services
3. Privacy and security protections for health information
4. Supportive business, clinical, cultural, and regulatory environments
5. Rules of engagement and governance

These building blocks are interdependent and progress must be incremental across all of them over the next decade to realize this vision. We will develop a more comprehensive set of use cases and goals for three, six and ten-year timeframes that will guide work in each of the building blocks, including alignment and coordination of prioritized federal, state, tribal, local, and private sector actions.

BUILDING BLOCK #1: CORE TECHNICAL STANDARDS AND FUNCTIONS

Through our Standards & Interoperability (S&I) Framework, ONC will continue to work with industry stakeholders and federal and state governments to advance core technical standards for terminology and vocabulary, content and format, transport, and security. These standards will enable, at a minimum, the following essential services for interoperability:

1. Methods to accurately match individuals, providers and their information across data sources
2. Directories of the technical and human readable end points for data sources so they and the respective data are discoverable
3. Methods for authorizing users to access data from the data sources
4. Methods for authenticating users when they want to access data from data sources
5. Methods for securing the data when it is stored or maintained in the data sources and in transit, i.e., when it moves between source and user
6. Methods for representing data at a granular level to enable reuse
7. Methods for handling information from varied information sources in both structured and unstructured formats

ONC will also work toward flexible and dynamic technical tools to support interoperability for primary and secondary use of health information, such as the architecture described in the JASON report prepared for the Agency for Healthcare Research and Quality, A Robust Health Data Infrastructure.

BUILDING BLOCK #2: CERTIFICATION TO SUPPORT ADOPTION AND OPTIMIZATION OF HEALTH IT PRODUCTS AND SERVICES

ONC will leverage the ONC Health IT Certification Program to ensure that a broad spectrum of health IT conforms to the technical standards necessary for capturing and exchanging data to support care delivery. Certification will be used to test that health IT conforms to standards, and also to certify that the technology has the ability to interoperate with other data sources so that users can exchange and use information from other systems. To increase flexibility in our regulatory structure, ONC has proposed that content and transport functions of technology be tested for certification separately. ONC has also been responsive to a demand for expansion of the certification program's scope to include health IT used in a broader set of health care settings, such as long-term and post-acute care and behavioral health. Ensuring consistent adoption of standards and policies for health IT applications used across all settings of care will support interoperability and health information exchange.

BUILDING BLOCK #3: PRIVACY AND SECURITY PROTECTIONS FOR HEALTH INFORMATION

ONC will strive to ensure that privacy and security-related policies, practices, and technology keep pace with the expanded electronic exchange of information for health system reform. We will continue to assess evolving models of health information exchange to identify and, with stakeholder input, develop solutions to address weaknesses and gaps in privacy protections. We will encourage the development and use of policy and technology and workflow practices to advance patients' rights to access, amend, and make informed choices about the disclosure of their electronic health information. We recognize that there are certain state and federal laws under which some patients must give affirmative consent to the disclosure of their health information (often related to a "sensitive" health condition such as behavioral health or genetic information), a privacy protection that is more stringent than the HIPAA Privacy Rule. ONC will endeavor to ensure that these patients will not be left on the wrong side of the digital divide. We will work to improve standards, technology, and workflow that enable the electronic collection and management of consent as well as the electronic exchange of related information within existing legal requirements (including notice of redisclosure restrictions). We will also invest in methods and approaches that support distributed analytics and open evidence sharing without sharing PHI. Continued coordination across federal and state governments is needed to develop, implement, and evolve appropriate privacy and security policies for various types of health information exchange.

Expanding interoperability and exchange may also pose new security challenges. We will work with the National Institute of Standards and Technology (NIST) and other stakeholders to expand the options for ensuring, at an appropriate level of certainty, that those who access health information electronically are who they represent themselves to be. We will continue to assess and improve policies and standards that help ensure health information is only accessed by authorized people

and is used in reasonable and transparent ways. We will also work with the private sector to address emerging cyber threats.

Given our support for electronic access by individuals to their own health information, we will also be mindful of the privacy and security risks created when information exits the realm of HIPAA covered entities. We will support developers creating health tools for consumers to encourage responsible privacy and security practices and greater transparency about how they use personal health information. In addition, we will collaborate with the Office for Civil Rights and other agencies to encourage greater consumer education about the benefits of health information exchange and the steps they can take to safeguard their own data.

As we expand health information exchange, it is important that all stakeholders (the government, health care providers and plans, vendors, developers, patients and their caregivers) recognize their responsibility in protecting health information. We intend to continue our outreach and technical assistance to help everyone reach this goal.

BUILDING BLOCK #4: SUPPORTIVE BUSINESS, CLINICAL, CULTURAL, AND REGULATORY ENVIRONMENT

While the Medicare and Medicaid EHR Incentive Programs have been a primary motivator for the adoption and use of certified EHR technology, these programs alone are insufficient to overcome barriers to our vision of information sharing and interoperability as outlined above. Current policies and financial incentives often prevent such exchange, even when it is technically feasible. To ensure that individuals and care providers send, receive, find, and use a basic set of essential health information across the care continuum over the next three years, we need to migrate policy and funding levers to create the business and clinical imperative for interoperability and electronic health information exchange.

In collaboration with employers, federal agencies, and private payers, ONC will help define the role of health IT in new payment models that will remove the current disincentives to information exchange. Incremental steps to accelerate health information exchange will initially stem from Affordable Care Act (ACA) delivery reform programs and Medicare payment regulations. HHS will consider ways in which the adoption and use of ONC-certified health IT products can be aligned with and encouraged by Medicare and Medicaid payment policy, and other HHS programs funding health care delivery so that care delivery transformation and interoperability evolve in tandem.

With regard to individual access to health information and the engagement it enables, a significant barrier is a lack of knowledge among members of the public that access to health information is becoming increasingly available, and a cultural bias against taking advantage of it. Many patients are intimidated or embarrassed to ask for copies of their records or to ask health-related questions of their providers. To address these cultural barriers, we will encourage providers to proactively offer

access to health information for their own patients, and using consistent marketing and messaging via the Blue Button Initiative, encourage diverse stakeholders including data holders and consumer advocacy organizations to educate individuals about their rights and the benefits of access to and use of health information.

We will also work with states, employers, consumers, providers, technology developers, payers, and others to support efforts driving appropriate health information exchange for improvements in care and to see that any regulatory and business barriers preventing data flow are reduced and/or removed.

BUILDING BLOCK #5: RULES OF ENGAGEMENT AND GOVERNANCE OF HEALTH INFORMATION EXCHANGE

The HITECH Act charged ONC with establishing a governance mechanism for the nationwide health information network.

We view the nationwide health information network as a continually expanding ecosystem of electronic exchange activities and network service providers across the nation that rely on a set of standards, policies, and services to meet electronic exchange needs including the privacy, security, and appropriate use of the information exchanged.

This market includes many forms of electronic exchange and network service providers, ranging from simple forms (such as direct electronic exchange of health information between two known providers) to more sophisticated forms (such as query and response techniques). Governance will facilitate trust and interoperability across all the diverse entities and networks that provide exchange services so that health information follows individuals regardless of where and when they access care.

Looking forward

In 2014, ONC will build on our existing governance framework and principles to ensure individual access, privacy, transparency, responsible financial and business practices, and use of federal standards to support health information exchange. As needed, ONC will identify the "rules of the road" necessary for information to flow efficiently across networks and will transition to a governance approach for health information exchange that will likely involve both policy and collaboration across industry, government, and consumer representatives.

Experience has demonstrated that while trust can be established among specific, known groups of health information trading partners (providers, public health departments, payers, etc.) through local governance, data use agreements, and other contractual arrangements (constituting a trust community), scaling trust across communities requires assurance that each adheres to a minimum set of common security and business practices. Our governance approach must consider

a common framework for privacy, security, technology, data, and business practices, provide assurance to trust communities that each abides by that framework (including a process for dispute resolution and reconciliation), and maintain minimum technical tools where needed to make scaling trust easy.

We will seek input and collaboration with federal agencies to inform governance implementation and ensure broad participation across existing operating health information networks, including those focused at the vendor, enterprise, regional, and state levels. We seek to promote competition among network service providers in a way that avoids providers or individuals being "locked in" to one mechanism to exchange health information, limiting their ability to share health information and coordinate care efficiently.

It will take time to build a fully interoperable infrastructure of coordinated care and communication across health care providers, patients, and public health entities that improves health care quality, lowers health care costs, and improves population health. HHS is fully committed to ensuring ubiquitous, standards-based interoperability of health information across all care settings through a multi-year approach that is consistent, incremental, yet comprehensive. No one person, organization, or government agency alone can realize this vision of an interconnected health system. But together, we can achieve the promise and potential of health information technology to improve the health of all.

American Public Human Services Association
TODAY'S EXPERTISE FOR TOMORROW'S SOLUTIONS

Analytic Capability Roadmap 1.0 for Human Service Agencies

A White Paper by the APHSA National Workgroup on Integration Analytics Committee

Executive Summary

Analytics is a subject of immense interest today as human service agencies strive to provide more effective services and achieve better outcomes with the help of improved techniques and tools for analyzing data from multiple sources. This guidance provides timely information on this topic in response to five key questions:

- What is meant by "Analytics," especially in the context of Human Services?
- What is the Human Services Capability Assessment Model and how can it be used?
- What should be kept in mind when dealing with analytics?
- What steps should an organization take now to prepare for using analytics?
- If additional assistance is desired, what are the basic tenets of a good analytics RFP?

Starting with a summary of the excellent work done by Thomas Davenport and Jeanne Harris in their book, *Competing on Analytics: The New Business of Winning,*[1] we describe two levels of analytics—Descriptive Reporting and Advanced Analytics. Ultimately, as the authors point out, better DECISIONS are the goal of analytics NOT more reports, more portals, more scorecards, or more drill-downs. While this may seem self-evident, the track record on this point in the field of human services, as with so many others, begs for a common-sense approach to preparing and implementing an analytics strategy.

To that end, we have provided a framework for thinking about analytics, the *Human Services Capability Assessment Model.* The framework consists of different parts of the analytics continuum arrayed in the form of a maturity model such that each of the framework's pieces can be viewed through one of three different stages of maturity. By using the *Capability Assessment Model* as a guide, agencies can identify not only where they are today along the analytics maturity pathway but also the characteristics of the next higher level of analytics sophistication, should they desire to pursue it.

But knowing where one *is*, and where one *wants to go*, is not the same thing as *actually getting there*.

For this reason we have included a section in this guidance called "Key Points Worth Remembering." In it, we emphasize the critical importance of using "clean" data; ensuring consistency in data definitions; and having free and open communication among the people who collect the data, the people who analyze it, and the people who use it. Finally, we cannot emphasize enough the critical role that effective data governance plays in both analytics and data-sharing programs. Governance and management structures should include both owners and users of data.

Next, we describe a strategy for moving forward on analytics starting with understanding just how much analytical horsepower your organization actually needs. The *Capability Assessment Model for Analytics* can be an indispensable tool for this strategy by matching where your agency is with where you want your agency to be. Developing a use case can be of great assistance as well as setting staff expectations relative to what can and cannot be achieved with the data available and the extent to which the data can be used effectively.

1. Davenport, Thomas H. and Harris, Jeanne G., *Competing on Analytics: The New Business of Winning,* Harvard Business School Publishing, 2007.

Acknowledgments

This guidance is a product of the Analytics Subcommittee of APHSA's National Workgroup on Integration (NWI). The NWI is one of APHSA's strategic initiatives to implement its integrated, outcome-focused national policy and practice agenda, Pathways: the Opportunities Ahead for Human Services. *While we recognize that without everyone's assistance this paper would not have been able to achieve the clarity, timeliness, and relevancy we hope it provides, the observations, recommendations, and conclusions contained within remain the sole responsibility of the American Public Human Services Association.*

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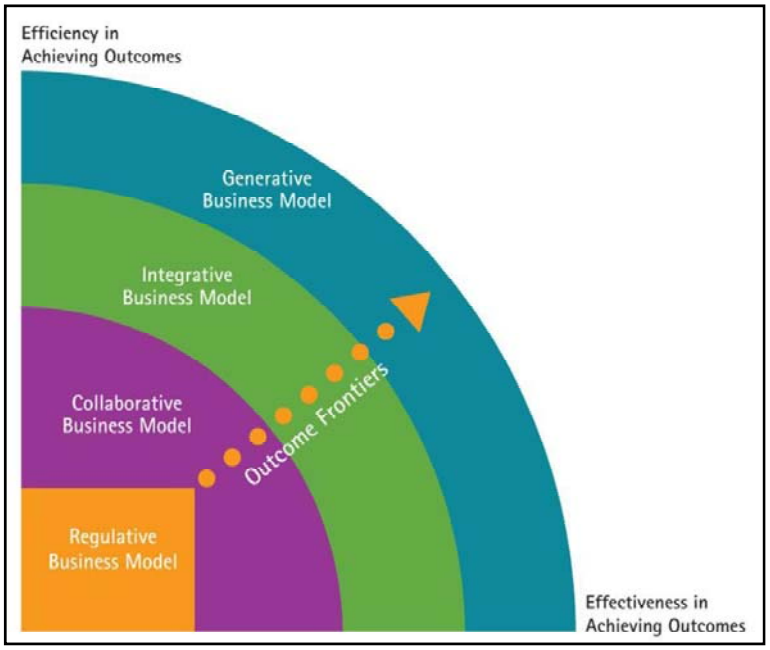
I. Introduction

State and local health and human service agencies continue to operate with fewer resources and diminished capacity while simultaneously beginning to plan, develop, and implement new ways of conducting business. A key component of this dramatic turn toward agency transformation is the ability to leverage advancements in technology and data analysis to support each organization's unique business objectives toward achieving shared outcomes and reducing costs through less duplication across programs. APHSA's conceptual platform for this transformation is rooted in *Pathways,*[2] the association's vision for the future of health and human services, and is further delineated through its Business Model[3] for health and human services in the 21st century and the recently released *A-87 Exception Toolkit for Human Service Agencies: Description of the Exception and Recommendation for Action.*[4]



In conjunction with APHSA's previous guidance,[5] states and localities may use this roadmap to prepare their organizations for the changes and opportunities analytics provides to achieve new organizational business objectives outlined in APHSA's business model. These include common process functions, roles of the consumer, technological and organizational infrastructure, and measures—all of which, when combined with enhanced analytic capability, can improve organizational efficiency and accountability and reduce health disparities. Advanced analytics, defined further in this guidance as data-driven capability supporting statistical analysis,

Figure 1: Upon the development of the 21st century business model, the NWI developed a Health and Human Services Integration Maturity Model (APHSA, 2013). The maturity model incorporates components of the business model and describes the maturation of them along the Human Services Value Curve (Oftelie, 2011). The model allows agencies to self-assess their current state of operations and where additional attention may be focused relative to moving toward the 21st century vision of transformation, or the generative state. One feature of the business model to which states/localities may assess themselves is on the degree of which they operate within an integrated infrastructure (including the use of data to inform operations).*

2. *Pathways* is centered around four main outcome areas: Achieving Gainful Employment and Independence; Stronger Families, Adults and Communities; Healthier Families, Adults and Communities; and the Sustained Well-being of Children and Youth. A fully integrated health and human services system operates a seamless, streamlined information exchange, shared business services, and coordinated care delivery system through a consumer-focused, modern marketplace designed to improve consumer outcomes, improve population health over time, and bend the health and human services cost curve; see http://www.aphsa.org/content/APHSA/en/pathways.html
3. DeSantis, Cari. *Business Model for Horizontal Integration of Health and Human Services.* APHSA, 2012.
4. http://www.aphsa.org/content/APHSA/en/pathways/NWI.html
5. Health and Human Services Integration Maturity Model. APHSA, 2013. http://www.aphsa.org/content/APHSA/en/pathways/NWI.html

* *Adapted from Human Services Value Curve. Harvard University's Leadership for a Networked World, 2011.*

forecasting, predictive analytics, and optimization, can help to establish a holistic view of the people being served as well as contribute toward achieve outcomes for those served by enabling:

- Development of effective strategies that maximize resource allocations and enhance customer service and satisfaction;
- Operational and programmatic decision-making that promotes efficiencies in accessing and providing care;
- Effective implementation of a performance measurement system and a continuous improvement process;
- Actionable insights to assist in the reduction of fraud, waste and abuse, including the identification of anomalies and other non-standard profiles as well as providing collectors and auditors with the ability to leverage integrated, case-based analytics tools;
- Utilization of comprehensive information in real-time; and
- Reducing health disparities among certain populations, and targeting services through forecasting service demand and designing services and delivery systems that most directly meet the needs of the given population through a culturally responsive and competent approach.

This analytic capability roadmap for human service agencies can be of greatest assistance to staff at each level of the organization (e.g., CEOs, CIOs, program directors, performance accountability directors, mid-level managers, supervisors, direct line workers) as they consider organizational and policy initiatives to transform current operations across the multiple lines of business and to ultimately enable achieving enterprise-wide outcomes. It can also be of value to federal administrators seeking guidance for policy reform and the effects of health care reform implementation relative to the horizontal integration of health and human services. This guidance also may assist academia when partnering with states, localities, the industry, and other stakeholders by putting analytics into practice, especially in evaluation and replication.

II. What Do We Mean by "Analytics"?

As Thomas H. Davenport and Jeanne G. Harris discuss in their book, *Competing on Analytics: The New Science of Winning*, analytics involves the collection, synthesis, and analysis of field-specific data that can lead to improved decision-making as a result of understanding underlying patterns and trends.

Harris and Davenport divide the subject of business analytics into two parts: Descriptive Reporting and Advanced Analytics. Under Descriptive Reporting, they identify four levels of increasing value to the user, relative to the types of questions that can be answered at each stage of maturity:

- Standard Reports—What just happened and why?
- Ad Hoc Reports—How many, how often, who, and where?
- Drill Down—Exact root cause; identify the problem.
- Alerts—What actions are needed?

Advanced Analytics goes beyond the collection and sorting of data to turn the information into data capable of providing future options and predictive capabilities. These capabilities can then forecast possible prospective results under different scenarios associated with each option through detailed pattern analysis:

- Statistical Analysis—Why is this happening?

- Forecasting Scenarios—*What if* trends?
- Predictive Analytics—What happens next?
- Optimization—Predict, prescribe the best that can happen.

Harris and Davenport's decision-making framework has two dimensions, public value and sophistication of data analysis, both of which increase as one moves up their "Analytics Capability Curve" from the lowest level (Standard Reports) through the mid-range stages of analytics (Alerts, Statistical Analysis, and Forecasting) to the highest levels (Predictive Modeling and Optimization).

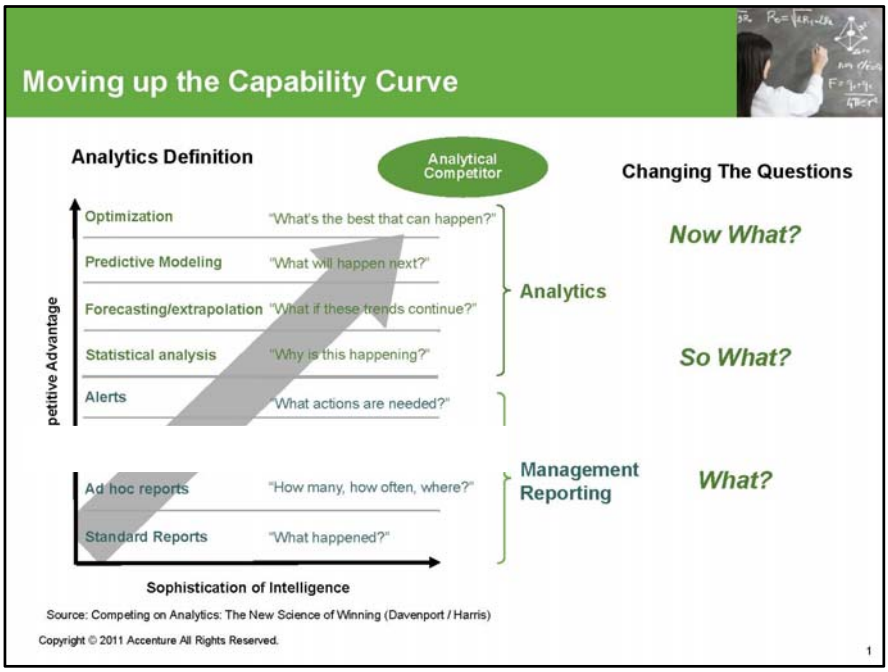


Figure 2: Accenture graphic adapted from original graphic published in Davenport & Harris's *Competing Analytics: the New Science of Winning* (2007).

Ultimately, as the authors point out in *Analytics at Work*, better DECISIONS are the goal of analytics, *not* more reports, more portals, more scorecards or more drill-downs.[6]

Within human services, the field of analytics is just taking off. While in the past data analysis was largely limited to looking for patterns of fraud and abuse by providers and clients, the predictive powers of analytics are increasingly being relied upon to understand not only why something is happening but what may happen next and what can be done to ensure the best possible long-range outcome. Analytics typically in use in human service programs, to the extent they are in use at all, are used to gain a better understanding of the people being served; increasingly today they are being used to understand their needs across multiple programs.

III. Human Services Capability Assessment Model for Analytics

One way of thinking about analytics in the context of human services is to envision different activities associated with the field; e.g., creating standard reports out of data, generating special one-time ad hoc reports, drilling down deeper into the data, triggering alerts when specified norms are exceeded, comparing expected results with outliers, and forecasting the future based on past trends. For each of these "domains," it is useful to describe three different levels of activity—basic, advanced and leading—based upon increasingly higher levels of sophistication. The result is a "capability assessment model" for analytics, as shown in the table below.In this case, eight domains have been identified and arrayed down the left-hand column; across the top are the three levels of "maturity" just described. Within each cell of the 8 x 4 matrix is a description of the activity at that particular level of maturity.

6. Davenport, Thomas H., Harris, Jeanne G., and Morison, Robert. *Analytics at Work,* Harvard Business School Publishing, 2010.

From left to right in the table along any particular row, the description takes on increasingly sophisticated and detailed activities. For example, in the first domain, standard reports at the Basic Level, the report formats simply respond to those necessary for federal reporting, and are submitted four times a year to management. Moving up the maturity scale to the Advanced Level, the reports not only do everything they did in the previous stage of maturity but, in addition, report on additional factors (Key Program Indicators) and are delivered faster (monthly, via the web) and to a broader range of people than the audience at the Basic Level (management and appropriate persons). By the time the domain reaches the highest level of maturity (Leading Level), everything described about the reports at the Advanced Level is maintained and additional characteristics are added to the list of descriptors (geographic segmentation and delivered at least weekly).

Two points are worth noting about the Capability Assessment Model.

- First, the narrative within the cells has at least two dimensions: descriptive characteristics and timeliness. Both must be met to consider the activity qualifying for the specified maturity level. For example, if the standard reports were formatted to meet the federal requirement and contained Key Program Indicators as well, but were not delivered to management and appropriate staff monthly, the activity should be classified at the lower (Basic Level, in this case) maturity level.
- Second, and in addition to helping agencies determine where their organization's analytics capabilities are today, the Capability Assessment Model points the way to higher levels of analytical sophistication by describing the characteristics of the next higher level or two so that agencies can establish goals relative to the organization's desired future state.

Figure 3: Adapted from graphic published in Davenport & Harris's *Competing on Analytics: the New Science of Winning* (2007).

Domain	Basic	Advanced	Leading
Standard Reporting	Program data in formats appropriate for federal reporting are delivered to management quarterly.	Program data in formats appropriate for federal reporting together with Key Program Indicators (KPI) are delivered to management and delivered to appropriate persons via the web at least monthly.	Program data in formats appropriate for federal reporting together with KPI and geographic segmentation are delivered to appropriate persons via the web at least weekly.
Random Reporting	Queries about the presence or non-presence of described conditions can be run and responses delivered within 30 days.	The agency deploys a data warehouse and has basic inquiry tools that facilitate answers to inquiries within one week.	The agency deploys a data warehouse with the current version of an inquiry tool that facilitates answers to inquiries within hours or minutes.
Focused Reporting	Centralized power users are licensed to analyze the component items comprising a published data element.	Key supervisory decision makers are licensed to analyze the component items comprising a published data element.	Staff members that administer a program are licensed to analyze the component items comprising a published data element in a program administered by the licensee.

Domain	Basic	Advanced	Leading
Automated Alerting	Case alerts are developed by applying rules or policies to batch runs and are distributed quarterly to staff for manual review and application.	Case alerts are developed by applying rules or policies to batch runs and are distributed to staff for automated review and application at least weekly.	Case alerts apply rules or policies in real time and are distributed to staff for automated review and application in real time.
Statistical Analysis	Structured data are analyzed comparatively between periods, regions, and where possible, compared nationally and measured using relevant percentages and other basic fractional assessments. Sources of all data are clearly identified, defined, and explained.	Multi-period structured data are used to describe trends; sources of data and the definitions used are clearly described; definitional differences between the reviewed data and national or comparative data are clearly explained; and basic regressions may be used to show correlations and conclusions. Results are reviewed with at least one person who has significant training in statistics.	Structured and unstructured data may be used to glean conclusions after a thorough description of the data involved and disclosing any bias that may have been present in the data due to collection methods. Aggregated data may be used by taking raw data and eliminating "noise" to satisfy distributional assumptions of data modeling. Advanced statistical methods are used and conclusions are reviewed and verified by a statistician or data scientist.
Forecasting and Extrapolation	Basic static linear extrapolation is used to forecast utilization based on the most recent available historic data.	Dynamic forecasting, which considers at least two interrelated variables and the most current trends available for those variables, is used to forecast accounting for seasonal and periodic variations.	Multi-variant models are developed, monitored, and modified as necessary using regression and extrapolation techniques, and the most current data available are used to forecast accounting for seasonal and periodic variations.
Predictive Modeling	Not used	Basic multi-variable models are developed, monitored, and modified as necessary using regression and extrapolation techniques, and the most current data available are used to operate the model.	A data scientist reviews the data available, internally and externally, structured and unstructured, then assesses what is meant by each piece of data. Data are enhanced using univariant and bivariant investigations with subject matter experts. Collectively, questions are developed, the precise answers to which are extremely important to the organization. Then, through a series of iterative regression analysis using many variables, an algorithm is developed and validated, and when applied, the best predictor of the question's answer is known. The algorithm is periodically reviewed, retested, and updated.

Domain	Basic	Advanced	Leading
Optimization	Not used	Seeks to find the single best value or outcome to a program, service or series of services within a program taking into account multiple variables and after determining what decisions are to be made from the analysis.	Seeks to find the single best combination of services in a portfolio of services to achieve an organization's mission or objectives and is developed for the purpose of making decisions to allocate resources in a way that achieves the optimized outcome.The process may also be used in supply chain assessments where multiple products or processes compete for limited resources to achieve the single highest value for the organization.

IV. Key Points Worth Remembering

An organization's analytic capability rests on a variety of factors, including the quality of the data, how it is defined by contributors within and across the organization, and the processes by which it is accessed.

Additionally, established governance and management structures must be in place to facilitate these processes all the while engaging stakeholders from within and across the public and private sectors to help define the goals, objectives, and approaches to effectively share data across programs. According to a joint survey[7] conducted by the National Association of Chief Information Officers (NASCIO) and the Health Information and Management Systems Society (HIMSS) in 2013, approximately 80 percent of surveyed state CIOS reported that no data governance structures are currently in place to share citizen data.

1. Regardless of where or how data are used, the cleanliness of the data requires constant vigilance.

   "Error proofing" data entry software will avoid many structured data errors. Nevertheless, monitoring the data to identify "made-up entries" or "work-arounds" is necessary so that the data can be consistent and represent what is intended by the data. Getting feedback loops with the people who input the data can also help identify variants that need to be addressed to continue to improve the data quality. It should also be noted that as a data warehouse grows, the vigilance for data cleanliness must be increased because of the volumes of different data, the variability in quality of the collection techniques (e.g., automated, paper, or second-party entries, which may include biases in collection methodologies), and due to the variability in quality of the collection methods (automated self-declarations vs. verbal communications and interpretations followed by transcriptions).

2. Data definitions can vary, so ensuring data transparency is critically important.

   Sometimes data names may be identical, even with federal standards, but have different definitions based on state definitions or policies. For example, a "confirmation" or "finding" of child abuse or neglect in one state may have been determined using a different definition or a different burden of proof when compared to a "confirmation" or "finding" in another state.

7. NASCIO & HIMSS. *The Health IT Landscape in the States: Through the Lens of the State CIO.* (June, 2013): *http://www.nascio.org/publications/documents/The_Health_IT_Landscape_in_the_States_NASCIO_HIMSS.pdf*.

Differences in definitions and in the adequacy of evidence required should be disclosed to meet even basic transparency expectations. Further, differences in the processes should also be highlighted. In some cases, due process was afforded prior to the finding; in others, no due process was afforded and no appeal rights were given to reach conclusions.

3. Inconsistencies in data can be due to various factors and, to the extent possible, should be explained to the user of the data.

   Disclosure of "special events" (a fire; a recession; a change in a fiscal year; differences in state and federal year reporting periods; an employment strike; etc.) may be necessary to explain unusual patterns in data, inconsistencies in conclusions, and as explanations for anomalies. Clear and frequent communication linkages between those who collect the data, those who analyze it, and those who use it will go a long way to limiting any confusion.

V. Steps to Take When Seeking Outside Assistance

Analytics is a new language typically not understood in the same way by all users or decision-makers. It requires an understanding of statistics, business operations and rules, and technology at various levels. Organizations will want to develop capacity in staff positions that carry an optimum mix of these competencies. When this is not immediately possible, however, an organization may need to pull in additional assistance.

Here are some additional steps agencies can take to obtain the help it needs:

1. Decide upfront how much analytical power you really need. The Capability Assessment Model for Analytics is a great place to start. It lets you analyze where your agency or program stands today and where you want it to go.
2. Collaboration, cooperation, and standardization of requirements across departments are important to ensure that all participants know what data they have and what they need to get. If your agency plans to seek outside assistance through a Request for Proposals (RFP), make sure there are no overlaps, redundancies, or conflicts in your requirement specifications. Obtaining input from staff on this will enable the organization to write a clear and concise description of its needs.
3. Decide in advance what a vendor proposal should address: Is it only the analytic capabilities provided by a specific application, or a soup-to-nuts approach, including data preparation, training, installation, configuration, and maintenance? While a specific application can address particular functions, a solution can remove the burden to figure out what needs to be done to get your organization to an analytics-ready state.
4. Try to avoid describing in legacy thinking what your organization wants to achieve. If you use the lexicon of older systems and/or technology, vendors may be hesitant to offer a more current solution or, worse, not understand what is being asked for. One way to address this problem is to make use of the Capability Assessment Model described earlier. By putting your agency needs in the larger context of your overall objectives, the vendor will have a clearer understanding of not only your organization's immediate concerns, but where their solution should fit within the broader picture.
5. Include a use case in your RFP that makes sense to your community of stakeholders as an evidence-based example. By so doing, a prospective bidder is provided with a sense of the

current state and may be able to address it in very specific terms, perhaps as a demonstration pilot, thus ensuring that both sides clearly understand what is involved.

6. Describe your organization's data sources so as to provide bidders with a realistic frame of reference. Analytics consumers of all kinds have repeatedly said that getting data ready to process with analytics is the hardest part of the journey. Each program within and across the organization collects a variety of data—many times this means that the data elements are defined differently and are from a variety of places. Lack of standard data definitions, identification of such sources, and the processes by which they are collected can hamper enterprise-wide efforts to further its analytic capability. Setting realistic expectations with the user community is a critical first step. Being forthcoming about the quality and status of the available data will confirm to the anticipated user base that they will be able to trust the data as complete, accurate, and current once these issues have been addressed. Without such trust, the results of the most sophisticated analytical application will fall victim to the old adage, "Garbage in, garbage out."
7. While identifying possible data sources does not necessarily translate into the data being ready to use, prospective bidders may be able to suggest ways in their responses on how to turn them into a useable state.

VI. Summary

As human service agencies move further into the 21st century, it is no longer sufficient to just gather data. Agencies must be able to analyze, understand the trends in their data, and predict what their customers need as they modernize their system to serve people in an integrated way. The ultimate goal, of course, is to make decisions about serving people at the right time, with the right services for the right duration. An effective and efficient data analytics strategy will enable states and localities to do just that.

Glossary

Data Modeling—Analysis of data objects and their relationship to other data objects. Data modeling explores data-oriented structures and identifies entity types. It involves a progression from a high-level conceptual model to a logical model.[8]

Distributional Assumptions—Assumptions made on the distribution of the outcome variable. With linear regression, the outcome should have a normal distribution, or more specifically, the residuals should have a normal distribution. The logistic model makes the natural assumption that the outcome follows a binomial distribution.[9]

Fractional Assessments—Procedure whereby assessments are made at some uniform percentage of full or fair market value rather than at 100 percent thereof.[10]

Liscensee—Individual granted a license to copy, use, or re-sell a commodity, such as digital content. This user has access to otherwise circumvented or protected digital material.[11]

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8. Data Modeling. (n.d.). In *Dictionary Techopedia* online. Retrieved from *http://www.techopedia.com/definition/14/data-modeling;* and Data Modeling. (n.d.). In *Dictionary Webopedia*. Retrieved from *http://www.webopedia.com/TERM/D/data_modeling.html.*
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10. Fractional Assessments. (2013). In *Glossary of Assessment Terms Nassau County* online. Retrieved from *http://www.nassaucountyny.gov/agencies/assessor/generalinfo/terms.html.*

Power user—Individual with considerable experience with computers who utilizes the most advanced features of applications. He or she typically has a more advanced grasp of using and/or operating standard computers or software than regular users. For example; video-editing professionals, high-end graphic designers, audio producers, and those who conduct scientific research.[12] Power users and analysts (expect to) use data mining and statistical techniques for data analysis and query development.

Regressions—Data mining tool that predicts the value of a target as a function. Regressions have many applications in trend analysis, business planning, marketing, financial forecasting, and a time series prediction.[13]

Structured Data—Information that has a preset structure. It is easily defined, stored, and analyzed.[14]

Unstructured Data—Information that does not have a predefined data model and/or does not fit well into a relational database. These data are typically text heavy, but can also possess dates, numbers, and facts. Unstructured data are usually more difficult to analyze and take up a significant amount of storage space.[15]

Appendix A

A Quick Reference Guide to Writing an Analytics RFP

Public human service agencies are increasingly seeking to incorporate the use of analytics into their procedures at each level of their organization and for a variety of purposes outlined in the preceding report (e.g., demonstrating outcomes, improving organizational decision-making and resource allocations, reducing fraud/waste/abuse, and improving performance measurement). Using the capability model as a way to assess how your organization currently uses data and to envision your desired capability that will help reach your multi-dimensional goals is a great starting point.

Often agencies recognize the need to seek external assistance toward achieving their desired analytical capability (e.g., forecasting and extrapolation, predictive modeling and optimization) beyond descriptive reporting. From an industry perspective, this desire to move forward is hampered by a variety of factors, including, but not limited to staff capacity and knowledge of data analytics. Sometimes these circumstances require organizations to extend their net externally by releasing requests for proposals (RFPs) to their partners who may have the capacity, experience, and solutions to assist agencies in advancing their analytic capabilities.

To this end, several industry partners of APHSA's National Workgroup on Integration put together this brief reference guide for states and localities to consider when drafting an RFP.

DISCLAIMER: The views expressed in this Appendix are those of participating industry partners of APHSA's National Workgroup on Integration and may or may not represent the views of APHSA.

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15. Minelli, M., Chambers, M., & Dhiraj, A. (2012). *Big Data, Big Analytics: Emerging Business Intelligence and Analytics Trends.*

i. Expressing What Your Agency Needs in an Analytics RFP

As state agencies prepare to solicit assistance regarding analytics, their RFPs should strive to express the business need of their agency rather than the desired solution in order to allow the vendor community to demonstrate its creativity and flexibility. For example, use everyday language to describe who your anticipated user communities will be and what they think they expect from analytics solutions.

Here are some tips on considering and expressing what your agency may need in an RFP.

- Be sure to describe your organization's business intentions, plans, and strategies to help define the analytic capabilities you are seeking.
- Express the challenge in simplest terms. For example, "Our human services department would like the ability to determine what services and service availability might be required in parts of the state not currently served based on current data. We want to forecast demand."
- Be specific where you are more confident in your analytics operations.
- Set expectations by describing a practical future state. Use the analytical capability model to help self-assess how your agency currently uses data.
- Ensure data used for analytics represent a trusted resource encouraging broad use of analytic capabilities. This is a cautionary statement—data play a critical role in analytics success.
- Identification of performance and outcome measures are a critical part of preparation. Remember to include performance metrics and monitoring that new analytic capability will help to evaluate and improve the agency-wide day-to-day activities of users.
- Clearly state your assessment of your collective skills at the outset. Since the field is at the early stages of adoption of analytics capabilities, take into consideration the need for data analytics training and knowledge transfer for our user communities.

ii. Guidelines for Writing an Analytics RFP

Based on a review of RFPs that states have submitted for analytic services, consultants working with the National Workgroup on Integration believe that many states could benefit from defining their business needs and business environment when using analytics on the front end. The challenge is to ensure that the organization takes the broadest possible view to reflect that use of analytics may be shared among several departments, agencies, and divisions. Thus, it is important to reflect in the RFP the various levels of interest, urgency, skill and, if appropriate, budgets.

The following table identifies a number of relevant, high-level activities. The following items provide additional dimensions of your use of the RFP to achieve your organizational objectives.

Recommended Sequence	Action/ Opportunity	Details	Notes
A	**Allocate an early section describing business problem or challenge that it is believed that analytics will help address**	1. The statement of the problem or challenge should be clear and unmistakable. This will preempt wasted effort on both the agency and vendor sides in developing an answer to the problem. 2. Take time to clarify the statement of the problem by vetting it with all stakeholders.	Remember, expect analytics to address any number of interesting and challenging problems that require greater insight, prompter action, and rationale for making key changes in your organization's operations. Look at the largest problem space to determine how much you might be able to apply analytics.

B	**Create an evaluation scorecard that your agency will use to assess proposals**	1. Understand metrics (how your agency measures key variables) and relative value/impact to the organization. 2. Work toward clarity so that your organization gains consensus on what is and what is not a solution to the problem/challenge. 3. Understand and define what is, and is not, a value to the organization (separate "wishes/nice-to-haves" from real requirements).	Think about "must-haves," "nice-to-haves," and "interesting-but-does-not-apply." Plot these notions across time so that planning for utilization of features not needed now but will need later on.
C	**Assess the capacity**	1. Plan to allocate participating staff time (planning, drafting RFPs, evaluating RFPs, planning execution, deployment, operations/production) 2. Understand and update current systems capacity 3. Understand and update personnel capacity 4. Understand the impact of an "analytics solution" on the organization, including the development of future expectations.	The most challenging part of this journey is *getting the data right*. Analytics doesn't work very well without the right data, which can come from a variety of sources, some of which need more stewardship before participating in your analytics program.
D	**Understand all the parts of an analytics solution**	1. Data—sources, currency, ownership, management. This is the tough (time-consuming and potentially expensive) part. 2. Data knowledge. How well do you know your data (owners, currency, sources, apps that manage the data, etc.)? 3. Analytics—the basic capabilities and functions of statistical analysis 4. Tools (e.g., lower level knowledge workers need to know where the input is coming from) 5. Knowledge of analytics, statistics, etc. 6. Knowledgeable users, experts, etc. Can you understand the results delivered by analytics tools? What do you need to make that happen? 7. Actions— a. What do you expect analytics to deliver for the organization? Why? b. What are you doing now that works, doesn't work? c. What do you need in the early stages? d. How far do you think the organization is committed to go? 8. Costs components—areas where dollars will be committed to achieve a sound data platform, skilled users, and useable and practical analytics capabilities. a. Data cleansing b. Data transformation c. Data management d. Analytics tools	Because of all the moving parts, establishing an Analytics Program Office is highly recommended in order to track activities across these different domains. Be sure to allocate Project Management resources. It's important in the planning process to anticipate the costs across the entire program; some costs will hit early, others later.

		e. Analytics training f. Deploying analytics capabilities into the organization g. Impact on organization, on business processes 9. Statistical/Data Scientist a. If developing predictive algorithms, how experienced are the statistical scientists developing the predictive algorithms?	
E	**Options/ Opportunities**	1. Share analytics with another department a. Costs b. Personnel c. System capacity d. Knowledge/Expertise 2. Collaborate with other agencies to share expertise and insight 3. Build your analytics capabilities incrementally and experiment along the way. a. Start with your data platform b. Add analytics incrementally as skills, capacity, and needs grow. 4. Create benchmarks to monitor and measure your progress and the impact of analytics on the organization's operations.	

iii. Tips You May Find Helpful When Drafting an Analytics RFP

Based upon discussions with a number of vendors who respond to RFPs seeking help with analytics, we offer the following tips. We hope that by emphasizing these points that have come up repeatedly in real world RFPs, the responses you receive will be precisely what you are looking for:

- Be clear and concise. Choose extra text carefully.
- Choose words that help to describe business objectives, strategies, immediate challenges, new barriers to insights, and so on. Give the vendor the best chance to understand your requirements as well as to anticipate your needs going forward.
    - Example: The objectives going forward are to improve operations and performance, maximize resource allocations, and enhance customer service.
- Educate, train, and empower staff to embrace the use and vocabulary of data analytics. This gives them time, training, and incentives; doing so will help to engage new user communities and quicker adoption of your new solutions and applications.

Understand and describe the context in which analytics will be used in your particular situation. For example, your organization is likely to need to support strategic planning and organizational objectives through analytics that facilitate fact-based decision-making by measuring key performance indicators.

Stewardship ("chain of trust") is an important aspect of data analytics because the data you are likely to use are considered to be enterprise and system assets. Consequently, data stewardship will help to ensure that you:

- Develop reporting procedures and data queries that support agency initiatives and information requests.

- Conduct a readiness assessment that evaluates your organization's ability in using data to manage operations, including the adequacy of timely reporting, an array of metrics, hardware/software, and vision for the use of predictive practices.
- Support predictive analytics/modeling and reporting that facilitates the early identification of trends, risks, and opportunities.
- Develop your organization's ability to analyze the impact of new and existing policies and legislation by using analytical benchmarks to understand trends.
- Seek to obtain quick access to real-time performance and operational statistics, including clerical performance measures.

INTERAGENCY AGREEMENT
AMONG
THE DEPARTMENT OF HUMAN SERVICES,
THE DEPARTMENT ON AGING,
THE DEPARTMENT OF CHILDREN AND FAMILY SERVICES,
THE DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY,
THE DEPARTMENT OF PUBLIC HEALTH, THE DEPARTMENT OF HEALTHCARE AND FAMILY SERVICES
AND
THE OFFICE OF THE GOVERNOR
REGARDING
THE ILLINOIS HEALTHCARE AND HUMAN SERVICES FRAMEWORK PROJECT

The Illinois Department of Human Services (DHS), the Department on Aging (Aging), the Department of Children and Family Services (DCFS), the Department of Commerce and Economic Opportunity (DCEO), the Department of Public Health (DPH), the Department of Healthcare and Family Services (HFS) and, the Office of the Governor, (collectively, the Framework Partners or Partners), pursuant to the Intergovernmental Cooperation Act, 5 ILCS 220/5 *et seq.*, hereby enter into this Interagency Agreement (Agreement) in connection with all Requests for Proposals (RFPs) and other procurements, and all post-contract activities necessary for project completion, for the Illinois Healthcare and Human Services Framework Project (Framework or Framework Project). The Framework Partners are collectively referred to herein as "Parties" or individually as a "Party."

RECITALS

WHEREAS, the State of Illinois has a long-standing commitment to achieving accessible, integrated and efficient delivery of healthcare and human services beginning with the recommendations of the 1997 Governor's Task Force for Human Services Reform, reinforced by the findings of the Illinois Legislature's Access to Benefits Task Force Report of 2007 and, most recently, addressed in the goals of Governor Quinn's Human Services Commission; and

WHEREAS, the State of Illinois is committed to maintaining core human services for its most vulnerable residents and children; achieving integrated service delivery that provides "No Wrong Door" access through convenient locations and channels of entry, thereby enabling Illinois residents to achieve greater well-being, self-sufficiency and independence; and bringing a data-driven perspective to the evaluation of programs and prioritizing those programs that demonstrate the greatest long-term effectiveness; and

WHEREAS, most of the current information technology systems used by the Framework Partners are out-of-date, inefficient, incompatible with each other and incapable of being updated in a manner that would meet the needs of either the State, the Framework or the Framework Partners; and

WHEREAS, the Framework Project, a six-agency collaborative initiated in 2008, is focused upon addressing the challenges posed by the limitations of the current systems and developing a horizontally-integrated, customer-focused and customer-friendly system that will serve multiple programs by streamlining processes and employing advanced technology that facilitates collaboration and data sharing across programs and systems; and

WHEREAS, to serve the residents of Illinois in the most efficient, effective and fiscally responsible manner possible, the Framework Partners have worked collaboratively to procure the services of a vendor (Planning Vendor) which will be responsible for the design and planning phase (Planning Phase) of new system development; and

WHEREAS, the Framework Partners have engaged a Planning Vendor; and

WHEREAS, following completion of the Planning Phase, the Framework Partners will work jointly and collaboratively to procure the services of a vendor or vendors (Implementation Vendor(s)) who will be responsible for implementing the new system (Implementation Phase); and

WHEREAS, the Framework Partners will collaborate to prepare an RFP for said Implementation Vendor(s) (Implementation RFP); and

WHEREAS, the Framework Partners anticipate that they may have to prepare additional RFPs and complete other procurements for additional vendors in connection with the Framework Project as it is brought to completion; and

WHEREAS, the Framework Project will be receiving Federal matching funds (Federal Financial Participation or FFP) from the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture/Food and Nutrition Service (USDA/FNS) to support the planning activity for the Framework Project; and

WHEREAS, in connection with their financial participation in the Framework Project, HHS and the USDA/FNS (collectively, the Federal Framework Partners) are working in collaboration with the Framework Partners to contract with the Implementation Vendor(s) and any other vendors.

NOW, THEREFORE, the Framework Partners agree as follows:

ARTICLE I
Definitions

1.1. Definitions. Unless defined elsewhere in this document, capitalized words and phrases used in this Agreement have the following meanings:

"ACA" means the federal Affordable Care Act.

"CMS" means the Illinois Department of Central Management Services.

"Communication," whether in the singular or plural, and unless otherwise specified, means any contact of any nature including, but not limited to, in-person meetings, teleconferences, videoconferences, and correspondence via electronic mail, U.S. Mail or other carrier between or among

the Framework Partners and between or among the Framework Partners and the Federal Framework Partners.

"Effective Date" means the date on which all Parties have executed this Agreement.

"ESC" is synonymous with "Framework Executive Steering Committee," as defined below.

"Evaluation Committee," whether in the singular or plural, means any committee, comprised of designated employees of the Framework Partners, convened to review and evaluate responses to RFPs issued by the Framework Partners that operates in full conformity with the provisions of the Illinois Procurement Code.

"Federal Framework Partners" means the United States Department of Health and Human Services (HHS) and the United States Department of Agriculture Food and Nutrition Service (USDA/FNS).

"FFP" means federal financial participation.

"Framework Executive Steering Committee," or ESC, means the committee, chaired by the State Chief Information Officer, consisting of the Directors (or their designees) of the Framework Partners, representatives of the GOMB, CMS, and the major Medicaid/Healthcare initiatives (MMIS, HIE, and ACA), and other staff designated by the State CIO, which shall provide executive leadership and oversight of all matters of finance and policy in connection with the Framework Project.

"Framework Operational Committee" means the body, formerly known as the Framework Governance Board, assembled by the Framework Project Director and State CIO, comprised of policy, operations and information technology staff from each of the Framework Partners.

"Framework Partners," whether in the singular or plural, means the Parties to this Agreement. The terms "Framework Partner" and "Framework Partners" are synonymous with the terms "Partner Agency" and "Partner Agencies," respectively.

"Framework Project Director" means the head of the Framework Project Office who is responsible for achieving the goals and objectives of the Framework Project.

"Framework Project Office" means the office led by the Framework Project Director, which may be staffed, in whole or in part, by State personnel who will guide the achievement of the Project's goals and objectives and coordinate work with contracted vendors, subcontractors, and internal and external stakeholders.

"GOMB" means the Illinois Governor's Office of Management and Budget.

"HIE" means the Health Information Exchange being developed by the Illinois Office of Health Information Technology.

"IAPD," or "Implementation – Advanced Planning Document," is a written plan of action submitted to support a request for FFP in the costs of designing a given system. The IAPD is a comprehensive and thorough document which sets forth specific, detailed information and summarizes or provides key documents prepared during the Planning Phase.

"IES" means the Integrated Eligibility System being developed by HFS.

"Implementation RFP" means the RFP or multiple RFPs which will be issued, in conformity with the Procurement Code, by the Framework Partners, upon review and approval by the Federal Framework Partners, to identify a vendor or vendors to assist the Framework Partners in the Implementation Phase of the Framework Project.

"Implementation Vendor" means the vendor(s) selected to assist the Framework Partners during the Implementation Phase.

"Liaison" means an employee of a Framework Partner agency assigned to work with, and report to, the Framework Project Director in the Framework Project Office.

"MMIS" means the Medicaid Management Information System.

"Planning RFP" means the RFP that has been issued by the Framework Partners to identify a vendor or vendors to assist the Framework Partners in the Planning Phase of the Framework Project.

"Procurement Code" means the Illinois Procurement Code, 30 ILCS 500/1-1 *et seq.*

"Request for Proposals," as defined by Section 1-15.75 of the Procurement Code, means the process by which a purchasing agency requests information from offerors, including all documents, whether attached or incorporated by reference, used for soliciting proposals.

"RFP" means Request for Proposals, as defined in the Procurement Code.

"State" means the State of Illinois.

"State CIO" means the Chief Information Officer of the State of Illinois.

"Vendor" means any supplier of goods and services in connection with the Framework Project and includes, but is not limited to, the Planning Vendor and Implementation Vendor(s).

Article II
Framework Project Director, Office and Governance

2.1. Director Responsibilities and Powers. The Framework Project Director shall:

a) sit on the Framework Executive Steering Committee;
b) have the authority to convene the Framework Operational Committee;

c) serve as primary liaison to Federal Framework Partners, foundation funders, the Illinois General Assembly, external stakeholder groups, the Human Services Commission and similar entities on behalf of the Framework Project;
d) manage the Framework Project Office;
e) coordinate project management efforts with the leadership of the HIE, Medicaid MMIS, and ACA implementation;
f) manage the relationship with all contracted consultants and vendors;
g) make executive-level decisions regarding policy, procurement and personnel for the Framework Project Office; and
h) report to the State CIO in connection with all matters related to the Framework Project.

2.2. Project Office Role. The Framework Project Office is responsible for the coordination of the Framework Project and the oversight of all committees and initiatives. The Framework Project Office shall include a full- and part-time staff that may, in whole or in part, be chosen from the Partner agencies or via other means, and assigned duties by the Framework Director according to the needs and requirements of the Framework Project.

2.3. Communications Hub. The Framework Project Office shall serve as the point of contact for all Framework Project initiatives including, but not limited to, communications between and among the Framework Partners and the Federal Framework Partners, any procurements and procurement-related issues, and communications with Vendors.

2.4. Liaison Role. Each Framework Partner shall assign one or more Liaisons to assist the Framework Office and Vendors, chosen in collaboration with the Framework Director. The time commitment, duties and responsibilities of each Liaison shall be agreed upon by the Framework Director and appropriate Partner Agency director.

2.5. Framework Director. All Framework Office personnel shall report to the Framework Director and act on behalf of the Office of the Governor when performing their duties as Framework Office staff. If the Framework Director position becomes vacant, the State CIO shall appoint a new Director to fill that position.

2.6. Operational Committee. The Framework Director shall convene a subcommittee of the Executive Steering Committee known as the Framework Operational Committee that will meet at the Framework Director's request, or bi-weekly, at a minimum, to guide the collaborative development of the Framework Project. In addition to those existing members of the body formerly known as the Framework Governance Board, the State CIO and the Framework Director shall, in consultation with the Directors of the Framework Agencies, identify new members of the Operational Committee and assign them duties and responsibilities. The Operational Committee will coordinate the planning activity between the three Medicaid/Healthcare projects (*i.e.*, MMIS, HIE and ACA) and the other Framework Programs to leverage functionality built by the Medicaid/Healthcare projects by including common user requirements from the smaller programs. It will provide week-to-week coordination and operational guidance for the Project; in particular, it will review and report on how the current business processes

work, how the current system is constructed, what are the required components of the new systems, how proposed elements of the new design will work and how implemented changes, if any, are working.

2.7. Executive Steering Committee. The State CIO will chair the ESC, and members will include the Directors of the Partner Agencies and representatives of GOMB, CMS and the major initiatives (MMIS, HIE, ACA). The ESC will leverage State investments in system development and will avoid duplication of effort. The ESC will make governance decisions for the Framework Project. In doing so, its members will collaboratively consider issues overlapping the auspices of the Partner Agencies and the IES, HIE and MMIS projects and coordinate action accordingly.

ARTICLE III
Framework Procurements

3.1. Implementation Phase RFP. Following completion of the Planning Phase, the Framework Partners will collaborate to draft an RFP for an Implementation Vendor or Vendors.

3.2. Additional RFPs. During and after the Implementation Phase, the Framework Project may require additional procurements. Any such procurement will be initiated by the Framework Partners and, unless otherwise required by law, will include the issuance of one or more RFPs drafted by the Framework Partners with review and input from the Federal Framework Partners and all State stakeholders, including the State CIO, GOMB, and the Chief Procurement Officer.

3.3. RFP Evaluation. The Evaluation Committees, which shall be comprised of designees of the Framework Partners, will review and evaluate all responses to any RFPs issued in connection with the Framework Project and, in conjunction with the Framework Executive Committee and the Federal Framework Partners, and according to the Procurement Code, shall select a winning vendor.

ARTICLE IV
Cost Allocations and Partner Cooperation

4.1. Framework Project Planning Phase Expenses. The total cost of the Framework Project Planning Phase is $12,114,620. Project expenses, including but not limited to Planning Vendor expenses, not funded with capital funds shall be borne by all Framework Partner agencies at the rates specified below:

- 8.78% by Aging;
- 11.82% by DCEO;
- 2.89% by DCFS;
- 43.13% by DHS;
- 2.02% by DPH; and
- 31.36% by HFS.

4.2. Lead Agency. DHS will serve as the lead agency and in that capacity will serve as fiscal agent and purchasing agent for the Framework Project.

4.3. Partner Agency Cooperation. It is the responsibility of each Partner Agency to participate in the Planning Phase by fully cooperating with the Framework Project Office. This includes, among other things, each Partner Agency making its subject matter experts available to participate in planning meetings.

4.4. Federal Match. The federal government will match 46.92% of Framework Project expenses. Each Partner Agency's cost share will be reduced by that 46.92% federal match.

ARTICLE V
Miscellaneous

5.1. Term and Expiration. This Agreement shall commence on the Effective Date and expire upon completion of the Planning Phase. The Planning Phase is complete when the federal IAPD is accepted by the Federal Framework Partners and at least one Implementation RFP, and all associated deliverables specified in the Planning Vendor contract, is completed.

5.2. Amendments. This Agreement may be modified or amended at any time by consent of all Parties, expressed in writing and signed by all Parties.

5.3. Applicable Law and Severability. This Agreement shall be governed in all respects by the laws of the State of Illinois. If any provision of this Agreement is held, deemed to be, or in fact is inoperative or unenforceable for any reason, such circumstance shall not have the effect of rendering any other provision or provisions contained herein invalid, inoperative or unenforceable to any extent whatsoever. The invalidity of any one or more phrases, sentences, clauses, or sections contained in this Agreement shall not affect the remaining portions of this Agreement or any part thereof. In the event that this Agreement is determined to be invalid by a court of competent jurisdiction, it shall be terminated immediately.

5.4. Acknowledgement of Planning and Implementation Contracts. The State of Illinois, acting through the Partner Agencies and the Office of the Governor, is or will be party to the contracts resulting from the Planning RFP. The Parties to this Agreement acknowledge that the Planning contract requires the Parties' cooperation, both in facilitating the performance of the Planning Vendor's obligations under the Planning contract, and the Parties' funding of the Framework Project as detailed in Article IV of this Agreement.

5.5. Notices. All notices given under this Agreement shall be in writing and shall be effective upon receipt. Whenever possible, notices shall be transmitted via electronic mail. Notices shall be served at the following addresses:

To DHS: Susan Locke
Framework Project Director

Illinois Department of Human Services
401 South Clinton Street
Chicago, Illinois 60607
312.793.2343
susan.locke@illinois.gov

To Aging:
Dr. John K. Holton
Director
Illinois Department on Aging
160 N. LaSalle Street
Suite 700
Chicago, Illinois 60601
312.814.4179
john.k.holton@illinois.gov

To DCFS:
Richard Calica
Director
Illinois Department of Children and Family Services
100 W. Randolph
Suite 6-200
Chicago, Illinois 60601
312.814.6800
richard.calica@illinois.gov

To HFS:
Julie Hamos
Director
Illinois Department of Healthcare and Family Services
401 S. Clinton
Chicago, Illinois 60607
312.793.4792
julie.hamos@illinois.gov

To DCEO:
David Vaught
Director
Illinois Department of Commerce and Economic Opportunity
100 W. Randolph
Chicago, Illinois 60601
312.814.7179
david.vaught@illinois.gov

To DPH:
Dr. LaMar Hasbrouck
Director
Illinois Department of Public Health
122 S. Michigan Avenue
Chicago, Illinois 60603

312.814.5278
lamar.hasbrouck@illinois.gov

To Office of the Governor:
Sean C. Vinck
Chief Information Officer, State of Illinois
Office of the Governor
100 W. Randolph St., 15th Floor
Chicago, IL 60601
312.814.1948
sean.vinck@illinois.gov

5.6. Entire Agreement; Modification. This Agreement, including any and all exhibits and referenced documents, if any, constitutes the entire agreement of the Parties with respect to the matters contained herein. No modification of, amendment or addendum to this Agreement shall be effective unless such modification, amendment or addendum is in writing and signed by all of the Parties. Specific tasks performed by the Parties necessary to carry out their respective duties and obligations in connection with the Framework Project may be modified by addendum or amendment to this Agreement and approved by the designated representatives of the Parties.

5.7. Assignment; Binding Effect. This Agreement, or any portion thereof, shall not be assigned by any of the Parties without the prior written consent of the other Parties. This Agreement shall inure to the benefit of and shall be binding upon the Parties and their respective successors and permitted assigns.

5.8. No Personal Liability. No member, official, director, employee or agent of the Office of the Governor, DHS, HFS, DCFS, DCEO, Aging, or DPH shall be individually or personally liable in connection with this Agreement.

5.9. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be considered to be one and the same agreement, binding on all Parties hereto, notwithstanding that all Parties are not signatories to the same counterpart. Further, duplicated signatures, signatures transmitted via facsimile, or signatures contained in a Portable Document Format (PDF) document shall be deemed original for all purposes.

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed by their authorized representatives.

OFFICE OF THE GOVERNOR

Jack Lavin
Chief of Staff

Date: 9/21/12

ILLINOIS DEPARTMENT ON AGING

John K. Holton, Ph. D.
Director

Date: _____

ILLINOIS DEPARTMENT OF CHILDREN AND FAMILY SERVICES

Richard Calica
Director

Date: _____

ILLINOIS DEPARTMENT OF HUMAN SERVICES

Michelle R.B. Sadler
Secretary

Date: _____

ILLINIOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

David Vaught
Director

Date: _____

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Dr. LaMar Hasbrouck
Director

Date: _____

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OFFICE OF THE GOVERNOR

Jack Lavin
Chief of Staff

Date: _____

ILLINOIS DEPARTMENT ON AGING

John K. Holton, Ph. D.
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Date: _____

ILLINIOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

David Vaught
Director

Date: _____

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Dr. LaMar Hasbrouck
Director

Date: 8-28-12

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed by their authorized representatives.

OFFICE OF THE GOVERNOR

_____
Jack Lavin
Chief of Staff

Date: _____

ILLINOIS DEPARTMENT ON AGING

_____
John K. Holton, Ph. D.
Director

Date: _____

ILLINOIS DEPARTMENT OF CHILDREN AND FAMILY SERVICES

_____
Richard Calica
Director

Date: 8/29/12

ILLINOIS DEPARTMENT OF HUMAN SERVICES

_____
Michelle R.B. Sadler
Secretary

Date: _____

ILLINIOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

_____
David Vaught
Director

Date: _____

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

_____
Dr. LaMar Hasbrouck
Director

Date: _____

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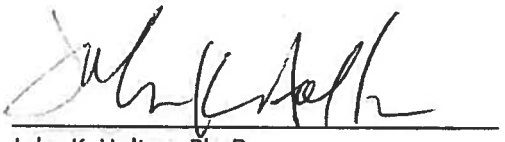
OFFICE OF THE GOVERNOR

_____
Jack Lavin
Chief of Staff

Date: _____

ILLINOIS DEPARTMENT ON AGING



John K. Holton, Ph. D.
Director

Date: 9/5/2012

ILLINOIS DEPARTMENT OF CHILDREN AND FAMILY SERVICES

_____
Richard Calica
Director

Date: _____

ILLINOIS DEPARTMENT OF HUMAN SERVICES

_____
Michelle R.B. Sadler
Secretary

Date: _____

ILLINIOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

_____
David Vaught
Director

Date: _____

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

_____
Dr. LaMar Hasbrouck
Director

Date: _____

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OFFICE OF THE GOVERNOR

_____
Jack Lavin
Chief of Staff

Date: _____

ILLINOIS DEPARTMENT ON AGING

_____
John K. Holton, Ph. D.
Director

Date: _____

ILLINOIS DEPARTMENT OF CHILDREN AND FAMILY SERVICES

_____
Richard Calica
Director

Date: _____

ILLINOIS DEPARTMENT OF HUMAN SERVICES

Michelle R.B. Sadler LS35
Michelle R.B. Sadler
Secretary

Date: 9/13/12

ILLINIOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

_____
David Vaught
Director

Date: _____

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

_____
Dr. LaMar Hasbrouck
Director

Date: _____

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed by their authorized representatives.

OFFICE OF THE GOVERNOR

Jack Lavin
Chief of Staff

Date: _____

ILLINOIS DEPARTMENT ON AGING

John K. Holton, Ph. D.
Director

Date: _____

ILLINOIS DEPARTMENT OF CHILDREN AND FAMILY SERVICES

Richard Calica
Director

Date: _____

ILLINOIS DEPARTMENT OF HUMAN SERVICES

Michelle R.B. Sadler
Secretary

Date: _____

ILLINIOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

David Vaught
Director

Date: 9-14-2012

ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Dr. LaMar Hasbrouck
Director

Date: _____

ILLINOIS DEPARTMENT OF HEALTHCARE AND FAMILY SERVICES

Julie Hamos

Julie Hamos
Director

Date: 9/14/12

State of Connecticut
Facilitation for HIT Governance

October 15, 2014

CSG Government Solutions

Your trusted adviser in government program modernization.

Facilitation for HIT Governance

- CSG Team Introductions
- Illinois Framework Overview
- Attributes of Good Governance
- Illinois Framework Governance Model
- Lessons Learned
- Planning for Connecticut HIT Governance

CSG Team Introductions

Deneen Omer

Client Executive

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HHS SME

Mcollisi@csgdelivers.com

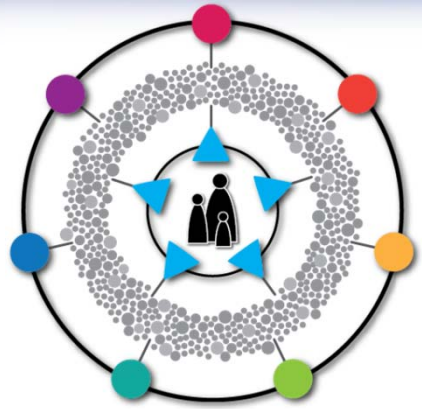
Dawn Boland

Business Analyst

Dboland@csgdelivers.com

Illinois Framework Overview

Building Bridges to Share Information
Creating Connections Across the HHS Enterprise



- **The Illinois Framework is:**
  - ✓ A multi-agency collaborative
  - ✓ A platform for governance and strategic planning
  - ✓ An enterprise view of Healthcare and Human Service (HHS) initiatives
  - ✓ A project management office for HHS infrastructure improvements

Mission:

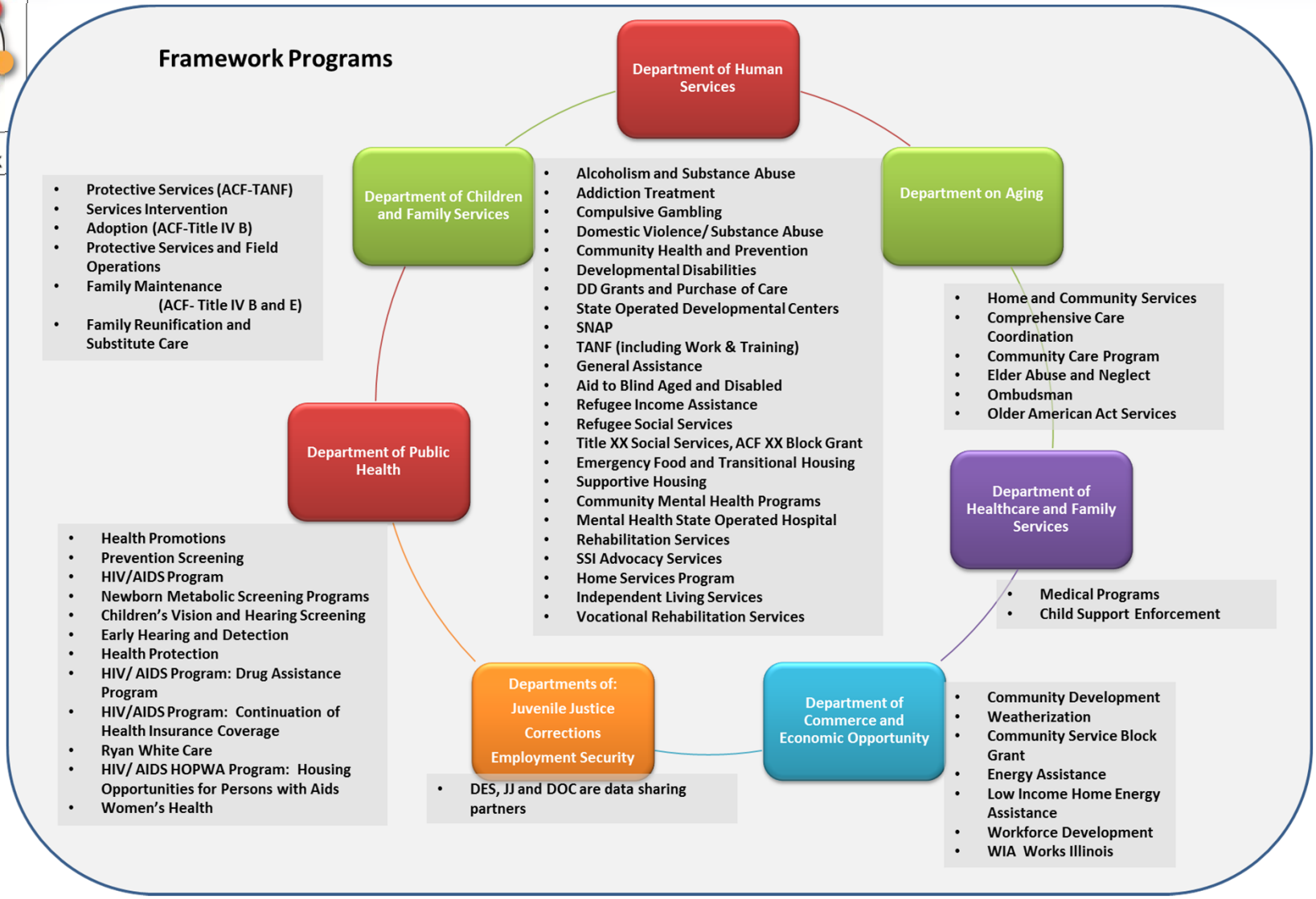
The Illinois Framework for Healthcare and Human Services, a multi-agency collaborative, coordinates the use of shared technology and business processes across Illinois' federally-funded healthcare transformation initiatives.

Illinois Framework Overview

- Framework Agencies
  - ✓ Human Services
  - ✓ Healthcare and Family Services
  - ✓ Aging
  - ✓ Children and Family Services
  - ✓ Public Health
  - ✓ Commerce and Economic Opportunity
  - ✓ Employment Security, Corrections, Juvenile Justice - data sharing
- State Chief Information Officer is the executive sponsor
  - ✓ Intergovernmental Agreement (IGA) signed by agency directors
  - ✓ Agencies working together on policy and fiscal decisions in an Executive Steering Committee

Illinois Framework Overview

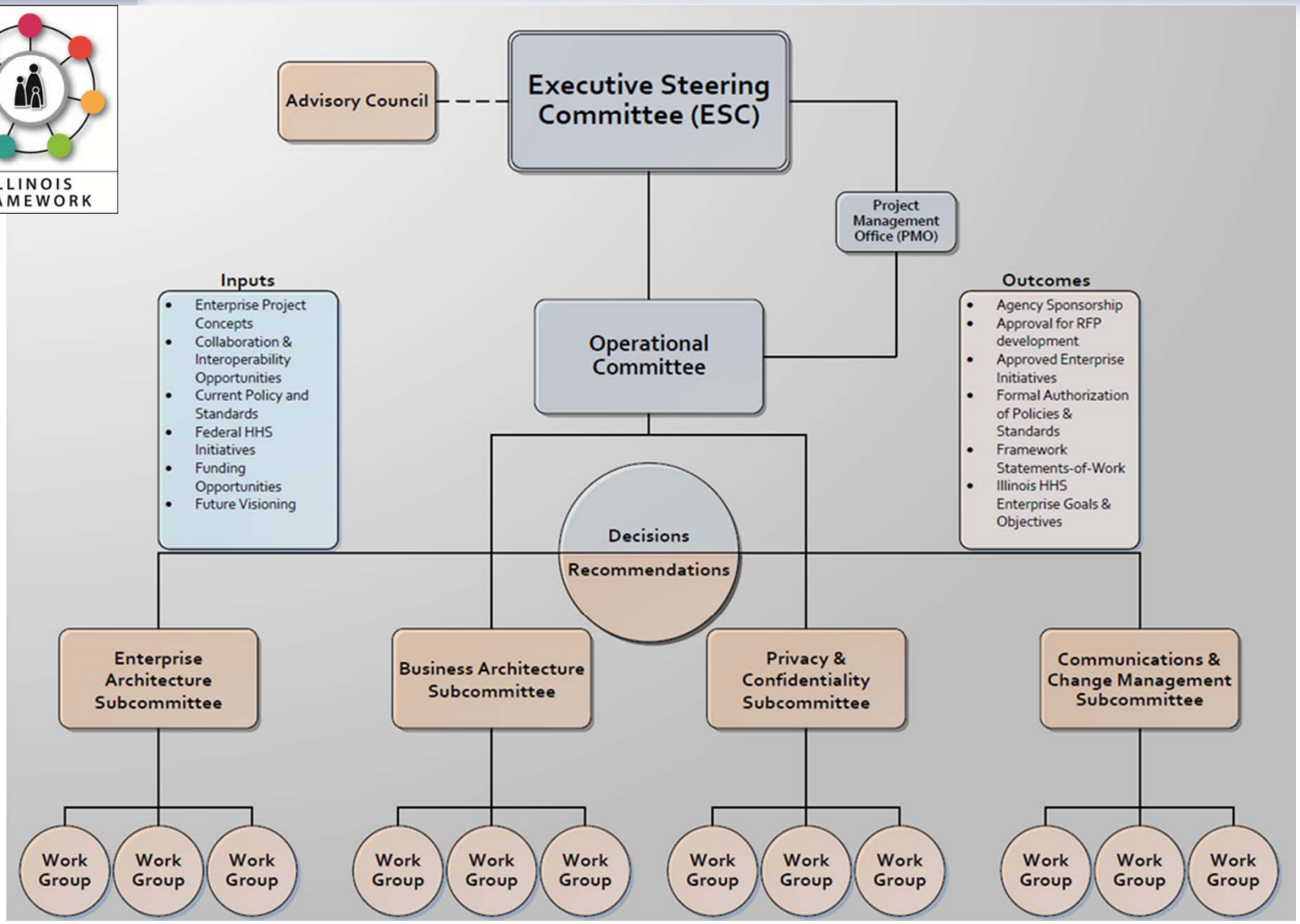
ILLINOIS FRAMEWORK



Attributes of Good Governance

- Attributes of Good Governance
  - ✓ Identify and assemble strong executive leadership
  - ✓ Create a shared vision
  - ✓ Formalize the structure
  - ✓ Establish a clear decision-making process
  - ✓ Evaluate and adapt as needed
  - ✓ Maintain transparent communications

Illinois Framework Governance Model



Lessons Learned

What Matters:

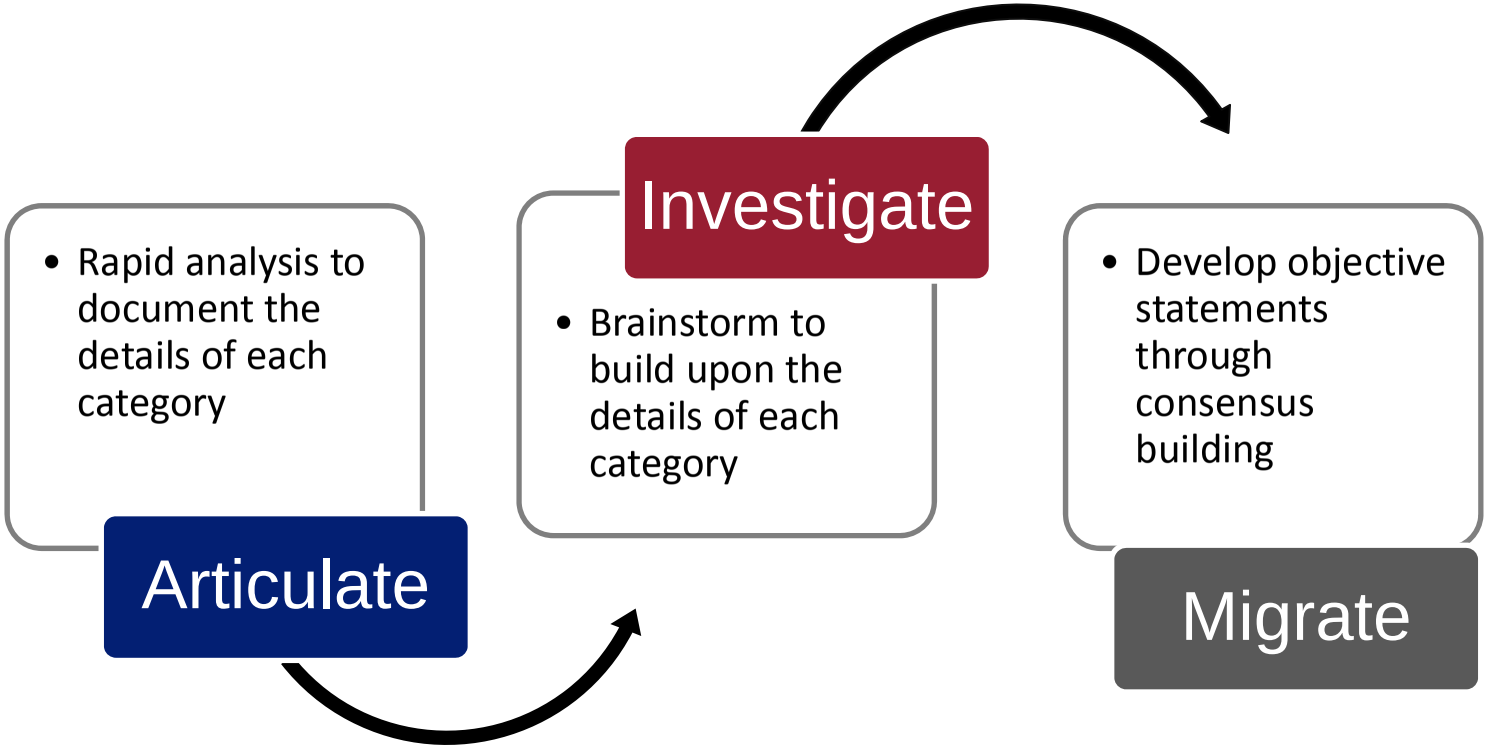
- Strong leadership
- Participation by agency heads
- Clearly articulated vision
- Formalization through charter, legal documents
- Privacy and confidentiality are key areas to address early on

Planning for CT HIT Governance

- Leverage the AIM Methodology
  - ✓ Articulate
  - ✓ Investigate
  - ✓ Migrate

- AIM Strategy for CT
  - ✓ Articulate priorities and objectives
  - ✓ Investigate attributes of good governance
  - ✓ Migrate to consensus for governance approach

AIM Methodology



Planning for CT HIT Governance

- Objective:

Effective governance model for Connecticut's Health Information Technology initiatives.

Questions

Questions?

Notes

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