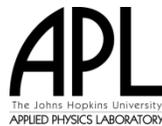


*Prepared for the:*  
Administration for Children and Families (ACF)

**National Human Services Interoperable Architecture**  
**As-Is Analysis Report**  
**DRAFT Version D0.1**  
**7 June 2011**

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The Johns Hopkins University  
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## Draft Issue

It is important to note that this is a draft document. The document is incomplete and may contain sections that have not been completely reviewed internally. The material presented herein will undergo several iterations of review and comment before a baseline version is published.

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# 1 Introduction

## 1.1 Background and Purpose

The National Human Services Interoperability Architecture (NHSIA) is being developed for the Administration for Children and Families (ACF) by the Johns Hopkins University (JHU) as a framework to support: common eligibility and information sharing across programs, agencies, and departments; improved efficiency and effectiveness in delivery of human services; improved detection and prevention of fraud; and better outcomes for children and families. The NHSIA project is leveraging relevant interoperability activities, including work done at the federal, state, and local levels as well as industry initiatives.

The purpose of this document is to catalog existing activities in the area of health and human services interoperability.

The primary audience for this document is the NHSIA project team. This report provides lessons learned and information about existing and planned activities that may support the To-Be architecture.

The secondary audience for this product will be early adopter states involved in the development and initial implementation of the To-Be architecture. An understanding of the strength and weaknesses of current efforts will provide a foundation for migration to the To-Be architecture.

The report can be used by ACF or others in the U.S. Department of Health and Human Services (HHS) as a quick-look resource on existing activities.

## 1.2 Document Content

This document contains brief overviews for relevant federal, state, industry, and standards activities. Each overview includes:

- A description of the activity and its products,
- Information sources,
- NHSIA viewpoint applicability, and
- Key features and lessons learned

This document also includes a description and references for a variety of organizations involved in human services, health, information technology, and associated policies.

The Analysis section provides a “quick look” summary of the activities and organizations. This summary provides a quick reference on the status of the existing achievements in human services interoperability, and a mapping to the architecture viewpoints being developed for NHSIA.

This is a “living document” and will be updated throughout the NHSIA project as additional references become available.

## 2 Federal Activities Summaries

### 2.1 Adoption and Foster Care Analysis and Reporting System (AFCARS)

AFCARS collects case level information on all children in foster care for who state child welfare agencies have responsibility for placement, care, or supervision and on children who are adopted under the auspices of a state’s public child welfare agency. AFCARS also includes information on foster and adoptive parents. States are required to submit AFCARS data semi-annually to ACF.

According to the AFCARS User’s Guide and Codebook:

“The purpose of AFCARS is twofold. First, AFCARS is designed to address policy development and program management issues at both the state and federal levels. Second, the data are useful for research aimed at analyzing such characteristics of the United States’ foster care and adoption programs as timing, trends, and populations.

Specific objectives of AFCARS include creation of the following:

- Reliable and consistent data through the use of uniform definitions, methodologies, and data standards.
- Statewide and national information on the number and characteristics of adoptive and foster care children and their parents (biological parents, adoptive parents, and foster care parents).
- Statewide and national information on the status of the foster care population (i.e., type of placement, length of placement, availability for adoption, and goals for ending or continuing care).
- Information on the extent and nature of assistance provided by federal, state, and local adoption and foster care programs.
- Information on the characteristics of the children to whom varying levels of assistance are provided.
- Information on the number and characteristics of children placed in foster care outside of the state that has responsibility.”

#### 2.1.1 Information Sources

ACF, *About AFCARS*, <http://www.acf.hhs.gov/programs/cb/systems/afcars/about.htm>.

National Data Archive on Child Abuse and Neglect, Cornell University, *Adoption and Foster Care Analysis and Reporting System (AFCARS) User’s Guide and Codebook for Fiscal Years 2000 to present*,

[http://www.ndacan.cornell.edu/NDACAN/Datasets/UserGuidePDFs/AFCARS\\_Guide\\_2000-Present.pdf](http://www.ndacan.cornell.edu/NDACAN/Datasets/UserGuidePDFs/AFCARS_Guide_2000-Present.pdf), October 2009.

## 2.1.2 NHSIA Viewpoint Applicability

- Information

## 2.1.3 Key Features and Lessons Learned

The data collected for AFCARS includes adoption-specific elements and foster care-specific elements.

Adoption-specific elements:

- Adoptive parents
- Birth parents
- Child's demographics
- Court actions
- Financial information
- Placement

Foster care-specific elements:

- Case plan goal
- Child's demographics
- Episode and removal circumstances
- Financial elements
- Foster family home
- Outcome information
- Placements
- Principal caretaker
- Termination of parental rights

## 2.2 CONNECT

CONNECT is a Federal Health Architecture multi-agency initiative that allows agency systems to exchange health information securely. CONNECT is open source software that is publicly available for download. CONNECT can be used to set up a health information exchange (HIE) within an organization and to tie an HIE into a regional network of HIEs using Nationwide Health Information Network standards. More than 20 federal agencies collaborated to build CONNECT. The development was managed by the Federal Health Architecture and executed under contract by Harris Corporation and their partners Agilex Technologies and ScenPro.

Successful demonstrations of CONNECT have occurred on multiple occasions. So far, seven federal agencies have demonstrated the feasibility of sharing data with each other and with private sector organizations using CONNECT. In addition, multiple states, private sector organizations and health information technology (IT) vendors have begun piloting the software. In February 2009, CONNECT was used for the first time in a live production environment

during which the Social Security Administration requested and received data from MedVirginia through Nationwide Health Information Network-enabled exchange.

### 2.2.1 Information Sources

CONNECT, *CONNECT Community Portal*, <http://www.connectopensource.org/>.

Sankaran, Vish, *Federal Health Architecture: Advancing Health Information Exchange*, [http://www.mmisconference.org/MMIS2009\\_Presentations\\_PDFs/Wednesday/MITA%20%20Fed%20Health%20Arch/Vish%20Sankaran%20MMIS%20conference%20aug%202009\\_MITA%20%20Fed%20Health%20Arch.pdf](http://www.mmisconference.org/MMIS2009_Presentations_PDFs/Wednesday/MITA%20%20Fed%20Health%20Arch/Vish%20Sankaran%20MMIS%20conference%20aug%202009_MITA%20%20Fed%20Health%20Arch.pdf), 19 August 2009.

Briefing about CONNECT delivered at the MMIS 2009 Conference.

### 2.2.2 NHSIA Viewpoint Applicability

- Systems
- Infrastructure

### 2.2.3 Key Features and Lessons Learned

The CONNECT Web site identified above describes the three primary elements of CONNECT:

“The **Core Services Gateway** provides the ability to locate patients at other organizations, request and receive documents associated with the patient, and record these transactions for subsequent auditing by patients and others. Other features include mechanisms for authenticating network participants, formulating and evaluating authorizations for the release of medical information, and honoring consumer preferences for sharing their information. The Nationwide Health Information Network Interface specifications are implemented within this component.

The **Enterprise Service Components** provide default implementations of many critical enterprise components required to support electronic health information exchange, including a Master Patient Index (MPI), Cross Enterprise Document Sharing (XDS.b) Document Registry and Repository, Authorization Policy Engine, Consumer Preferences Manager, HIPAA-compliant Audit Log and others. Implementers of CONNECT are free to adopt the components or use their own existing software for these purposes.

The **Universal Client Framework** contains a set of applications that can be adapted to quickly create an edge system, and be used as a reference system, and/or can be used as a test and demonstration system for the gateway solution. This makes it possible to innovate on top of the existing CONNECT platform.”

## 2.3 Federal Enterprise Architecture (FEA)

The Office of Management and Budget’s (OMB) Office of E-Government (E-Gov) and Information Technology (IT), with the support of the General Services Administration (GSA) and the Federal Chief Information Officers (CIO) Council, established the Federal Enterprise Architecture (FEA) Program which builds a comprehensive business-driven blueprint of the entire federal government. The FEA Program Management Office (PMO), located within OMB’s Office of E-Gov and IT, equips OMB and federal agencies with a common language and

framework to describe and analyze IT investments, enhance collaboration, and ultimately transform the federal government.

The FEA consists of a set of interrelated “reference models” designed to facilitate cross-agency analysis and the identification of duplicative investments, gaps and opportunities for collaboration within and across agencies. Collectively, the reference models comprise a framework for describing important elements of the FEA in a common and consistent way. Through the use of this common framework and vocabulary, IT portfolios can be better managed and leveraged across the federal government. This chapter introduces the purposes and structures of the five FEA reference models:

- Performance Reference Model (PRM)
- Business Reference Model (BRM)
- Service Component Reference Model (SRM)
- Technical Reference Model (TRM)
- Data Reference Model (DRM)

### 2.3.1 Information Sources

OMB, *Federal Enterprise Architecture (FEA)*, <http://www.whitehouse.gov/omb/e-gov/fea/>.

OMB, *Office of E-Government & Information Technology*, <http://www.whitehouse.gov/omb/e-gov/>.

### 2.3.2 NHSIA Viewpoint Applicability

- Capability (the Performance Reference Model)
- Infrastructure

### 2.3.3 Key Features and Lessons Learned

The FEA provides a methodology, a very high-level structure, and an assessment criterion. It has high-level descriptors for health services and for social services. The FEA Performance Reference Model (PRM) is being used as one input to the NHSIA Capability Viewpoint.

The FEA Business Reference Model includes health and human services, but is at such a high level that it does not provide much guidance to NHSIA. The Services Reference Model (SRM) and Technical Reference Model (TRM) provide a source for identifying services to be provided in the NHSIA Infrastructure Viewpoint. The NHSIA project is using the NIEM data model rather than the FEA DRM.

## 2.4 Health IT

The Office of the National Coordinator (ONC) for Health Information Technology (Health IT) focuses on using IT to enable health care providers to better manage patient care through secure use and sharing of health information. ONC coordinates “nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information.”

Health IT funded several HITECH (Health Information Technology for Economic and Clinical Health) Act programs including the Beacon Community Program, State Health Information Exchange Program, Health IT Extension Program, Strategic Health IT Advanced Research Projects, Community College Consortia to Educate Health IT Professionals, Curriculum Development Centers Program, Program of Assistance for University-Based Training, and Competency Examination Program. Under HITECH, eligible health care professionals and hospitals can qualify for Medicare and Medicaid incentive payments when they adopt certified Electronic Health Record (EHR) technology and use it to achieve specified objectives. The HITECH programs build the foundation for the EHR.

ONC issued a rule about standards, implementation specifications, and certification criteria for electronic health record technology. ONC also defined a process to ensure EHR technologies meet the standards, criteria, and technical requirements to achieve meaningful use of EHRs in systems.

ONC initiatives also include:

[State-Level Initiatives](#): Initiatives designed to ensure that states and regional efforts to achieve health information exchange (HIE) are aligned with the national agenda. These include State Health Policy Consortium, State Alliance for eHealth, Health Information Security and Privacy Collaboration (HISPC), and State-level Health Information Exchange Consensus Project.

[Nationwide Health Information Network](#) (NHIN): A collection of standards, protocols, legal agreements, specifications, and services to enable secure HIE. See Section 2.9 for more information about the NHIN. See Section 2.2 for more information about CONNECT, a gateway to the NHIN.

[Federal Health Architecture](#): An e-government line of business initiative to increase efficiency and effectiveness in all government operations.

[Adoption](#): An initiative supporting two national health IT adoption surveys: one for physician offices and one for hospitals.

[Clinical Decision Support \(CDS\) and the CDS Collaboratory](#): An initiative to enhance health and health care by providing knowledge and person-specific information – intelligently filtered or presented at appropriate times – to clinicians, staff, patients, or other individuals.

## 2.4.1 Information Sources

Health IT, *Health IT Home*, <http://healthit.hhs.gov>, 18 February 2011.

Health IT, *Health IT Adoption*, [http://healthit.hhs.gov/portal/server.pt?open=512&objID=1152&parentname=CommunityPage&parentid=28&mode=2&in\\_hi\\_userid=11113&cached=true](http://healthit.hhs.gov/portal/server.pt?open=512&objID=1152&parentname=CommunityPage&parentid=28&mode=2&in_hi_userid=11113&cached=true), 25 May 2010.

Health IT, *Certification Programs*,  
[http://healthit.hhs.gov/portal/server.pt?open=512&objID=2884&parentname=CommunityPage&parentid=357&mode=2&in\\_hi\\_userid=12059&cached=true](http://healthit.hhs.gov/portal/server.pt?open=512&objID=2884&parentname=CommunityPage&parentid=357&mode=2&in_hi_userid=12059&cached=true), 7 January 2011.

Health IT, *Clinical Decision Support*,  
[http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_cds/1218](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_cds/1218), 8 October 2010.

Health IT, *Federal Health Architecture (FHA)*,  
[http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_federal\\_health\\_architecture/1181](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_federal_health_architecture/1181), 16 July 2010.

Health IT, *Nationwide Health Information Network*,  
[http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_nationwide\\_health\\_information\\_network/1142](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_nationwide_health_information_network/1142), 17 December 2010.

Health IT, *Standards and Certification Criteria Final Rule*,  
[http://healthit.hhs.gov/portal/server.pt?open=512&objID=1195&parentname=CommunityPage&parentid=97&mode=2&in\\_hi\\_userid=11673&cached=true](http://healthit.hhs.gov/portal/server.pt?open=512&objID=1195&parentname=CommunityPage&parentid=97&mode=2&in_hi_userid=11673&cached=true), 31 March 2011.

Health IT, *State Level Initiatives*,  
[http://healthit.hhs.gov/portal/server.pt?open=512&objID=1154&parentname=CommunityPage&parentid=20&mode=2&in\\_hi\\_userid=11113&cached=true](http://healthit.hhs.gov/portal/server.pt?open=512&objID=1154&parentname=CommunityPage&parentid=20&mode=2&in_hi_userid=11113&cached=true), 13 August 2010.

President’s Council of Advisors on Science and Technology (PCAST), *Realizing the Full Potential of Health Information Technology to Improve Healthcare for Americans: The Path Forward*, <http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-health-it-report.pdf>, December 2010.

## 2.4.2 NHSIA Viewpoint Applicability

- Overview
- Information
- Infrastructure
- Projects
- Systems

## 2.4.3 Key Features and Lessons Learned

The PCAST report reaches these conclusions:

1. “HHS’s vigorous efforts have laid a foundation for progress in the adoption of electronic health records, including through projects launched by ONC, and through the issuance of the 2011 “meaningful use” rules under HITECH.
2. In analyzing the path forward, we conclude that achievement of the President’s goals requires significantly accelerated progress toward the robust exchange of health information.
3. National decisions can and should be made soon to establish a “universal exchange language” that enables health IT data to be shared across institutions; and also to create the infrastructure that allows physicians and patients to assemble a patient’s data across

institutional boundaries, subject to strong, persistent, privacy safeguards and consistent with applicable patient privacy preferences. Federal leadership is needed to create this infrastructure.

4. Creating the required capabilities is technically feasible, as demonstrated by technology frameworks with demonstrated success in other sectors of the economy.
5. ONC should move rapidly to ensure the development of these capabilities; and ONC and CMS should focus meaningful use guidelines for 2013 and 2015 on the more comprehensive ability to exchange health care information.
6. Finally, as CMS leadership already understands, CMS will require major modernization and restructuring of its IT platforms and staff expertise to be able to engage in sophisticated exchange of health information and to drive major progress in health IT.

The approach that we describe requires that there be a common infrastructure for locating and assembling individual elements of a patient’s records, via secure “data element access services” (DEAS). Importantly, this approach does not require any national database of health care records; the records themselves can remain in their original locations. Distinct DEAS could be operated by care delivery networks, by states or voluntary grouping of states, with possibly a national DEAS for use by Medicare providers. All DEAS will be interoperable and intercommunicating, so that a single authorized query can locate a patient’s records, across multiple DEAS.”

## 2.5 Information Sharing Environment (ISE)

The federal Information Sharing Environment is designed to facilitate the sharing of terrorism and homeland security information among all relevant entities through the combination of information sharing policies, procedures, and technologies. The ISE was created in response to Section 1016 of the *Intelligence Reform and Terrorism Prevention Act of 2004*.<sup>1</sup> The ISE helps to combat terrorism and protect information privacy in the course of increased information access and collaboration across and among ISE participants. The President’s program manager for the ISE issued the ISE guidelines to ensure that the information privacy and other legal rights of Americans are protected in the development and use of the ISE, which require relevant entities to have a written privacy protection policy that is at least as comprehensive as these guidelines.

The ISE Enterprise Architecture Framework (EAF) Description document provides a description of the ISE EAF<sup>2</sup>. It was developed to meet three objectives:

- To provide a comprehensive, high-level description of the ISE EAF
- To establish the architectural framework for implementation of ISE capabilities
- To identify key architectural decisions, which have been made or must be made.

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<sup>1</sup> *Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA)*

<sup>2</sup> The Office of Management and Budget (OMB) has suggested the term “enterprise architecture framework” for the ISE rather than “enterprise architecture” to highlight the fact that the ISE is a cross-agency construct to be used as guidance for agencies developing the information sharing aspects of their enterprise architectures. The term “enterprise architecture” is used in the OMB context to refer to an architecture prepared by a Chief Information Officer (CIO) to manage the IT resources of a specific department or agency.

### 2.5.1 Information Sources

U.S. Government, *Information Sharing Environment*, <http://www.ise.gov/>.

McNamara, Thomas E., Information Sharing Environment Program Manager, *Information Sharing Environment Enterprise Architecture Framework*, Version 2.0, [http://www.ise.gov/sites/default/files/ISE-EAF\\_v2.0\\_20081021\\_0.pdf](http://www.ise.gov/sites/default/files/ISE-EAF_v2.0_20081021_0.pdf), September 2008.

*Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA)*, Public Law 108–458, <http://intelligence.senate.gov/laws/pl108-458.pdf>, 17 December 2004.

### 2.5.2 NHSIA Viewpoint Applicability

- Overview
- Systems
- Infrastructure

### 2.5.3 Key Features and Lessons Learned

While the ISE was developed for the Department of Homeland Security (DHS), it provides a strong example of an architecture that leverages and adds detail to the Federal Architecture Framework. The ISE also leverages NIEM, with the support of the Common Terrorism Information Sharing Standards (CTISS) Working Group, chartered under the Information Sharing Council (ISC), which is the primary authorized body for defining ISE data standards.

Policy, governance, and requirements are keys to the success of the ISE.

## 2.6 Medicaid Information Technology Architecture (MITA)

The Medicaid Information Technology Architecture (MITA) is an initiative of the Center for Medicaid & State Operations (CMSO). “MITA’s mission is to establish a national framework of enabling technologies and processes that support improved program administration for the Medicaid enterprise and stakeholders dedicated to improving health care outcomes and administrative procedures for Medicaid beneficiaries.” (“Overview of the MITA Initiative”) The MITA initiative includes “an architecture framework, processes and planning guidelines for enabling state Medicaid enterprises to meet common objectives within the framework while supporting unique local needs.” (“MITA Information Series: What is MITA? Overview”, CMSO document)



**Figure 2–1 Key MITA Artifacts**

The MITA business architecture artifacts include:

- **Concept of Operations (COO):** The COO provides a framework for capturing the As-Is environment and the To-Be future state. A COO is a structure that helps organizations document their current state of operations, envision future desired transformations, and describe the improvements they seek in interactions with stakeholders, the quality and content of data exchanges, and their business capabilities.
- **MITA Maturity Model (MMM):** The MMM provides guidelines for the transformation of the Medicaid Enterprise from its As-Is level of maturity to progressively higher levels of performance. The MMM provides guidelines for creating up to five levels of business capabilities for each Medicaid business process that span as-is to to-be (8-10+ years).
- **Business Process Model (BPM):** The MITA BPM is a model representing the operations of the Medicaid enterprise as they exist in most states. It describes the Medicaid business processes found in a typical state and organizes them into various categories of common interest or focus (e.g., Provider Management, Member Management, and Operations Management). The role of the MITA BPM is to provide a common reference point for state Medicaid agencies. Agencies and their vendors can then map their processes to the BPM, which lets them describe their business processes in a standard way using a common vocabulary.
- **Business Capability Matrices (BCMs):** A business capability describes a business process at a specific level of maturity. The MMM defines five levels of maturity that show how the State Medicaid enterprise can and may evolve over the next 10+ years. The business capabilities result from applying the MMM's definitions of the five levels of maturity to each business process to derive specific capabilities for each process.
- **State Self-Assessment (SSA)** is used by a state to determine the level of maturity of its current operations and specify targets for improvement at higher levels of maturity.

The MITA Technical Architecture artifacts include:

- MITA principles, goals, and objectives
- Introduction to the concept of SOA
- Conceptual Technical Architecture Model (presented later in this chapter)
- Business Services
- Technical Capability Matrix
- Technical Services
- Application Architecture
- Technology Standards
- Solution Sets

The MITA Information Architecture artifacts include:

- Data Management Strategy (DMS)
- Conceptual Data Model
- Logical Data Model
- Data Standards Table (DST)

### 2.6.1 Information Sources

Centers for Medicare & Medicaid Services (CMS), *MITA Architecture: Medicaid IT Architecture (MITA) Framework 2.0*, [http://www.cms.hhs.gov/MedicaidInfoTechArch/04\\_MITAFramework.asp](http://www.cms.hhs.gov/MedicaidInfoTechArch/04_MITAFramework.asp), March 2006.

### 2.6.2 NHSIA Viewpoint Applicability

- Overview
- Capability
- Business
- Information
- Infrastructure

### 2.6.3 Key Features and Lessons Learned

The MITA initiative is perhaps the most significant contributor to NHSIA. The NHSIA reference model business processes are largely derived from the MITA business architecture. Though MITA 2.0 primarily focuses on Medicaid (MITA 3.0 may have a broader perspective, more directly applicable to human services), it nevertheless provides insight into the likely evolution of interoperable operations. Further, its maturity model is critical to MITA's SSA strategy and serves as a good exemplar for NHSIA. As a general rule, a state's migration towards MITA starts with an SSA.

A MITA 3.0 framework is under development; the framework is being extended to support the Affordable Care Act.

## 2.7 National Education Data Model (NEDM)

Funded by U.S. Department of Education and officially released in March of 2010, the National Education Data Model (NEDM) is a P-20 Engagement data resource that provides a common framework and language for collecting, comparing, and using data to improve schools and answer important research and policy questions.

- P-20 refers to education and training at all levels from pre-school through graduate studies in schools, community colleges, workplaces, and other community settings.
- Engagement means mutually beneficial relationships between the university and partners in communities across the region. Engaged partners learn from each other, discover new knowledge, and enjoy benefits that include meeting community needs, increased economic vitality, and improved quality of life across the region.

The Center for P-20 Engagement acts as a connector of resources, expertise, research, and services providing better education and training opportunities to the citizens.

NEDM represents a community of interest that is in the early stages of developing common definitions and data sets intended to create common standards to improve the accuracy of reporting.

### **2.7.1 Information Sources**

NEDM, *National Education Data Model*, <http://nces.sifinfo.org/datamodel/>.

### **2.7.2 NHSIA Viewpoint Applicability**

- Information

### **2.7.3 Key Features and Lessons Learned**

The next step for NEDM would be for more educators, officials, and other stakeholders to become aware of the NEDM and to discover how it enhances the work they are already doing in the education field.

## **2.8 National Child Abuse and Neglect Data System (NCANDS)**

Each state has its own definitions of child abuse and neglect that are based on standards set by federal law. Federal legislation provides a foundation for states by identifying a set of acts or behaviors that define child abuse and neglect. The National Child Abuse and Neglect Data System (NCANDS) is a voluntary national data collection and analysis system created in response to the requirements of the Child Abuse Prevention and Treatment Act (Public Law 93-247) as amended. The Children's Bureau in ACF collects and analyzes the data. States extract case-level data from their child welfare information systems for submission to NCANDS. All reports reaching a disposition date in a given year are mapped to the NCANDS data elements and included in the submission.

### **2.8.1 Information Sources**

U.S. DHHS, Administration for Children & Families (ACF), *Federal & State Reporting Systems*, <http://www.acf.hhs.gov/programs/cb/systems/index.htm#ncands>.

Cornell University, *National Data Archive on Child Abuse and Neglect (NDACAN): Datasets*, [http://www.ndacan.cornell.edu/Ndacan/Datasets\\_List.html](http://www.ndacan.cornell.edu/Ndacan/Datasets_List.html), © 1996-2011.

## 2.8.2 NHSIA Viewpoint Applicability

- Information

## 2.8.3 Key Features and Lessons Learned

Fields submitted are grouped into these categories:

- Report data on abuse and neglect (screened-in referrals)
- Child data
- Child maltreatment data
- Child risk factors
- Caretaker risk factors
- Services provided
- Staff data
- Perpetrators data

## 2.9 Nationwide Health Information Network (NHIN)

The NHIN is a set of standards, services, and policies that enable the secure exchange of health information over the Internet. It is not a physical network that runs on services at U.S. Department of Health and Human Services, nor is it a large network that stores patient records.

*“The NHIN is a set of conventions that provide the foundation for the secure exchange of health information that supports meaningful use. The foundation includes technical, policy, data use and service level agreements and other requirements that enable data exchange, whether between two different organizations across the street or across the country.*

*Participants in the NHIN agree to support a common set of web services and data content (NHIN Core Services) that enables private, secure and interoperable communication of health information among NHIN participants across the public Internet.”* [[What is the NHIN?](#)]

Three initiatives are intended to help expand secure health information exchange efforts using NHIN standards:

[Nationwide Health Information Network Exchange](#). A group of federal agencies and private organizations have come together to securely exchange electronic health information. These organizations are helping to develop Nationwide Health Information Network standards, services, and policies and are also currently demonstrating live health information exchange.

[The Direct Project](#). The Direct Project, launched in March 2010, is developing standards and services required to enable secure, directed health information exchange at a more local and less complex level among trusted providers in support of stage 1 Meaningful Use incentive requirements (e.g., a primary care provider sending a referral or care

summary to a local specialist electronically, or a physician requesting lab tests electronically).

**CONNECT.** CONNECT is a free, open source software solution that supports health information exchange both locally and at the national level. CONNECT uses Nationwide Health Information Network standards, services, and policies to make sure that health information exchanges are compatible with other exchanges being set up throughout the country. CONNECT is the result of a unique collaboration among federal agencies that is coordinated through the Federal Health Architecture program under ONC.

### 2.9.1 Information Sources

U.S. DHHS, The Office of the National Coordinator for Health Information Technology (ONC), *Nationwide Health Information Network: Overview*, [http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_nationwide\\_health\\_information\\_network/1142](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_nationwide_health_information_network/1142), 17 December 2010.

U.S. DHHS ONC, *What is the NHIN?*, [http://healthit.hhs.gov/portal/server.pt?open=18&objID=877368&parentname=CommunityPage&parentid=144&mode=2&in\\_hi\\_userid=11113&cached=true](http://healthit.hhs.gov/portal/server.pt?open=18&objID=877368&parentname=CommunityPage&parentid=144&mode=2&in_hi_userid=11113&cached=true).

U.S. DHHS ONC, *Nationwide Health Information Network Exchange*, [http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_nhin\\_exchange/1407](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_nhin_exchange/1407), 9 May 2011.

The Direct Project, *Who's Fueling Direct?*, <http://www.directproject.org/>.

U.S. DHHS ONC, *CONNECT Community Portal*, <http://connectopensource.org/>.

### 2.9.2 NHSIA Viewpoint Applicability

- Overview
- Systems
- Infrastructure

### 2.9.3 Key Features and Lessons Learned

Adoption of NHIN standards, services, and policies should facilitate interoperability and information sharing. Ongoing work to pilot the standards, services, and policies is producing valuable lessons, example services, and standards. The NHIN Technical Committee has provisionally approved several product specifications:

- Access Consent Policies Production Specification
- Authorization Framework Production Specification
- Query for Documents Production Specification
- Retrieve Documents Production Specification
- Health Information Event Messaging Production Specification
- Messaging Platform Production Specification
- Patient Discovery Production Specification

- Web Services Registry Production Specification

Final approval is subject to the validation of the NHIN reference implementation, currently underway in several pilot projects.

## **2.10 National Plan & Provider Enumeration System (NPES) – To Be Supplied**

### **2.11 National Youth in Transition Database (NYTD)**

The National Youth in Transition Database (NYTD) collects case-level information on youth in care including the services paid for or provided by the State agencies that administer the Chafee Foster Care Independence Program (CFCIP), as well as the outcome information on youth who are in or who have aged out of foster care. States begin collecting data for NYTD on October 1, 2010, and will report data to ACF semiannually. The first submission of data to ACF is due no later than May 15, 2011.

States are to report information on NYTD services in these categories:

- Independent living needs assessment
- Academic support
- Post-secondary educational support
- Career preparation
- Employment programs or vocational training
- Budget and financial management
- Housing education and home management training
- Health education and risk prevention
- Family support and healthy marriage education
- Mentoring
- Supervised independent living

States are also to report financial assistance they provide, including assistance for education, room and board, and other aid.

States are to survey youth and report information on these outcomes:

- Financial self-sufficiency
- Experience with homelessness
- Educational attainment
- Positive connections with adults
- High-risk behavior
- Access to health insurance

#### **2.11.1 Information Sources**

U.S. DHHS ACF, *Federal & State Reporting Systems: National Youth in Transition Database (NYTD)*, <http://www.acf.hhs.gov/programs/cb/systems/index.htm#nytd>.

U.S. DHHS ACF, *About NYTD*,  
[http://www.acf.hhs.gov/programs/cb/systems/nytd/about\\_nytd.htm](http://www.acf.hhs.gov/programs/cb/systems/nytd/about_nytd.htm).

U.S. DHHS ACF, *Federal Guidance*,  
[http://www.acf.hhs.gov/programs/cb/systems/nytd/federal\\_guidance.htm](http://www.acf.hhs.gov/programs/cb/systems/nytd/federal_guidance.htm).

U.S. DHHS ACF, *Practical Strategies for Tracking and Locating Youth*,  
[http://www.acf.hhs.gov/programs/cb/laws\\_policies/practical/index.htm](http://www.acf.hhs.gov/programs/cb/laws_policies/practical/index.htm).

### **2.11.2 NHSIA Viewpoint Applicability**

- Information

### **2.11.3 Key Features and Lessons Learned**

A major challenge to reporting the NYTD information is tracking someone who is no longer involved with the child welfare system. ACF suggests multiple tasks to track and locate those youth. Strategies include using mail and telephone contacts, searching official records, searching phone books, reviewing local inmate listings, obtaining more detailed records from individuals or institutions, reviewing files from custody facilities, and submitting credit report searches. ACF advises agencies to develop a tracking case file to help with a systematic approach that documents current information, correspondence, records of contact attempts and failures, and requests to other agencies for information.

## **2.12 Substance Abuse and Mental Health Services Administration (SAMHSA)**

The Substance Abuse and Mental Health Services Administration (SAMHSA) has funded studies that examined differences between Medicaid objectives, operations, and processes and those that characterize Behavioral Health (BH). BH-MITA explores adapting the structure and methodologies of MITA to the BH business model and processes.

SAMHSA acts as the principal federal oversight agency for state substance abuse (SA) treatment and mental health (MH) services and as the principal funder for state BH agencies. MH and SA treatment and prevention block grants are provided to states for support of ongoing programs and services. SAMHSA also funds a variety of grants to states each year for targeted purposes such as suicide prevention, infrastructure, co-occurring disorders, and supportive housing. In return for SA treatment and prevention block grant funding support (far larger than the MH block grant), SAMHSA requires submission of SA treatment data from states to track program effectiveness and funding accountability.

### **2.12.1 Information Sources**

Reports prepared for SAMHSA and/or CMS:

Verdier, James, Allison Barrett, and Sarah Davis for U.S. DHHS, *Administration of Mental Health Services by Medicaid Agencies*,

<http://www.samhsa.gov/Financing/post/Administration-of-Mental-Health-Services-by-Medicaid-Agencies.aspx>, 2007.

MITA CMS, *SAMHSA Behavioral Health MITA Landscape Document*, Version 1.1, August 8, 2008.

Note: This document is housed on the APL NHSIA DMZ site, References library, SAMSHA folder. Access to this site and this document requires an APL account.

Lutterman, Theodore C., Bernadette. E. Phelan, Azeb Berhane, Robert Shaw, and Verda Rana for U.S. DHHS, *Characteristics of Mental Health Agency Data Systems*, DHHS Publication No. (SMA) 08-4361, <http://store.samhsa.gov/shin/content/SMA08-4361/SMA08-4361.pdf>, 2008.

Virginia Department of Medical Assistance Services, *MITA: BH – Behavioral Health*, [http://dmasva.dmas.virginia.gov/Content\\_pgs/mita-bh.aspx](http://dmasva.dmas.virginia.gov/Content_pgs/mita-bh.aspx), © 2009.

### 2.12.2 NHSIA Viewpoint Applicability

- Overview
- Capability
- Business
- Information
- Infrastructure

### 2.12.3 Key Features and Lessons Learned

- Mental health is largely addressed through states via either state or local/ community mental health agencies. State Medicaid agencies are playing an increasing role in funding, managing, and monitoring public mental health services in states, reflecting the steady growth over the last three decades in the share of public mental health services funded by Medicaid.<sup>3</sup> In some states, significant authority is delegated to state mental health agencies; states differ with respect to whether the state Medicaid or the state mental health agency exercises authority over setting rates and certifying providers.
- Differences between the Medicaid and BH business models are captured in BH-MITA, primarily in the Care Management business area. Also, SAMHSA has specified an extensive Accountability business area that includes the Program Integrity processes defined by MITA.
- Virginia is one state that appears to have adopted the BH-MITA architecture framework. It is not clear to what degree the BH-MITA is being adopted by other states.
- BH services need to be strongly integrated with other HS services: To reach and create successful outcomes for those with mental and substance abuse disorders, state BH agencies fund treatment along with a variety of other community-based support services,

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<sup>3</sup> *Administration of Mental Health Services by Medicaid Agencies*

such as housing, employment services, transportation, child care, health care, and other services.

- BH agencies have a strong case/care management focus: “BH agencies operate from a case/care management focus to help clients achieve and maintain recovery and are moving towards more integrated service delivery models. BH agencies at the State level have historically been key sources of service funding through capacity grants to providers, and they in return receive data to meet State and Federal reporting requirements. Both SA and MH agencies generally perform similar business functions, although there are some business process differences between the two.”<sup>4</sup>
- BH services differ significantly across states: “Behavioral health services have been funded in all States to a large extent through Federal block grants, especially for SA services. These block grants give wide latitude to the State in defining the recipients and the treatment services, with the goal of encouraging State innovation in the delivery and provision of services. This has resulted in a great deal of program diversity across the country as States and their providers developed and evolved various approaches to meet the varying client needs.”<sup>5</sup>
- Historically, state BH agencies operate with greater flexibility while Medicaid agencies strive for uniformity. But these agencies are becoming more aligned: “Recent trends in health care are also pushing the two different health care models towards a common middle ground. BH agencies want more client-level cost and outcomes data in order to demonstrate effectiveness. This has led numerous agencies to develop and deploy web-based EHR capable systems. Medicaid programs, with a long tradition of using claims-based data systems, are now realizing that cost savings are possible with more reporting and management of the clinical process which requires having a comprehensive understanding not only of each person’s overall health, but also other factors that have an influence on health.”<sup>6</sup>

BH-MITA started by SAMHSA has evolved into a complete catalogue of process descriptions for all processes relevant to BH though these descriptions do not include all the elements provided in MITA descriptions. The latest SAMSHA documented was dated September 2008.

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<sup>4</sup> SAMHSA Behavioral Health MITA Landscape Document, Version 1.1

<sup>5</sup> SAMHSA Behavioral Health MITA Landscape Document, Version 1.1

<sup>6</sup> SAMHSA Behavioral Health MITA Landscape Document, Version 1.1

### 3 State and County Activities Summaries

#### 3.1 Alabama’s Camellia Project

In 2007, the state of Alabama commissioned a study by Microsoft and Systems Engineering, Inc., to suggest a solution to improve the efficiency of Alabama’s Health and Human Services agencies. Alabama wanted a solution that did not involve a major financial investment, a discontinuation of IT projects already under way, or drastic changes in its various agencies’ business processes. The resulting recommendation, “The Camellia Project—A Connected Health and Human Services Network,” was authorized by Gov. Bob Riley in late 2007. The Governor’s two primary expectations—and Camellia’s ultimate goals—were to:

- Establish a “no wrong door” approach to improve service access; and
- Establish a “lead case manager” function to improve case coordination.

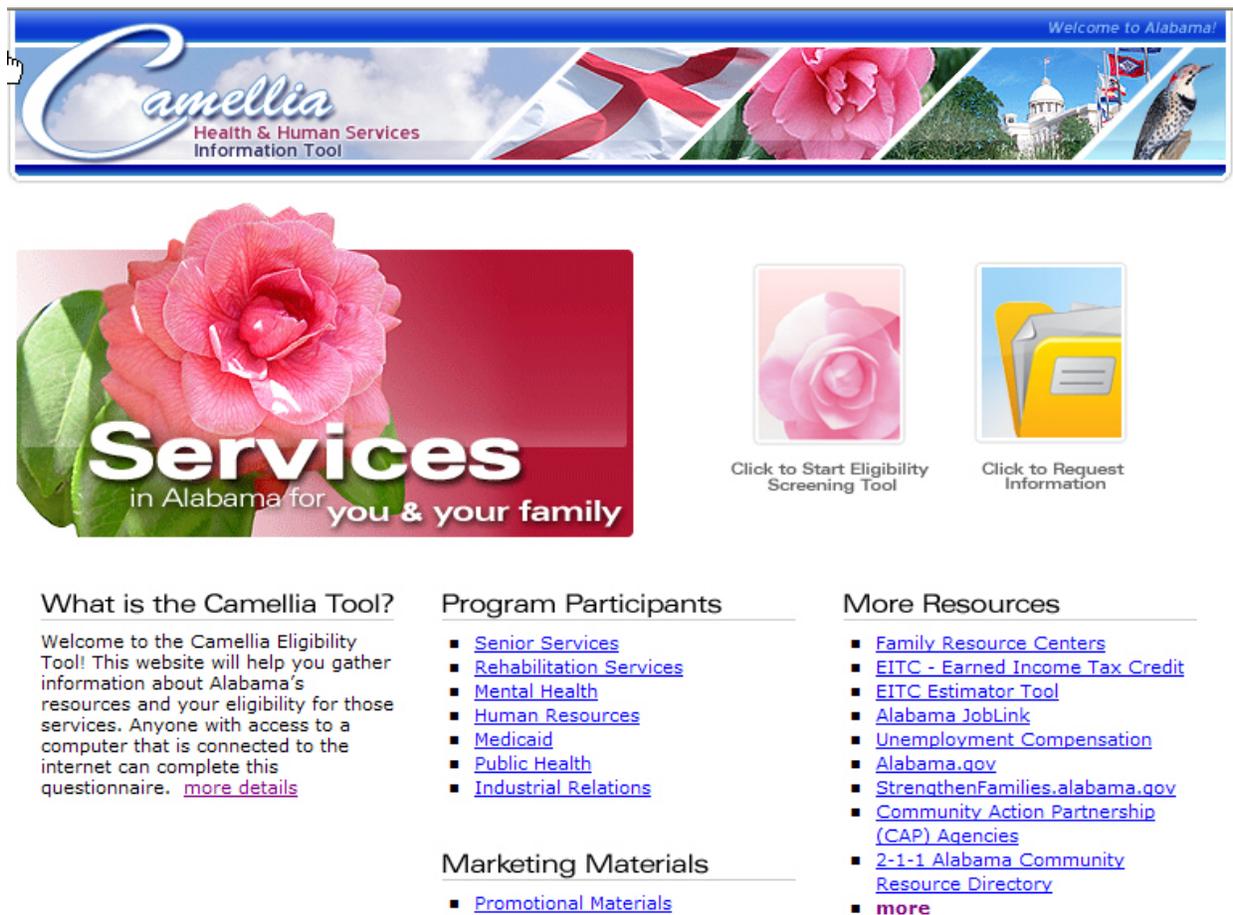


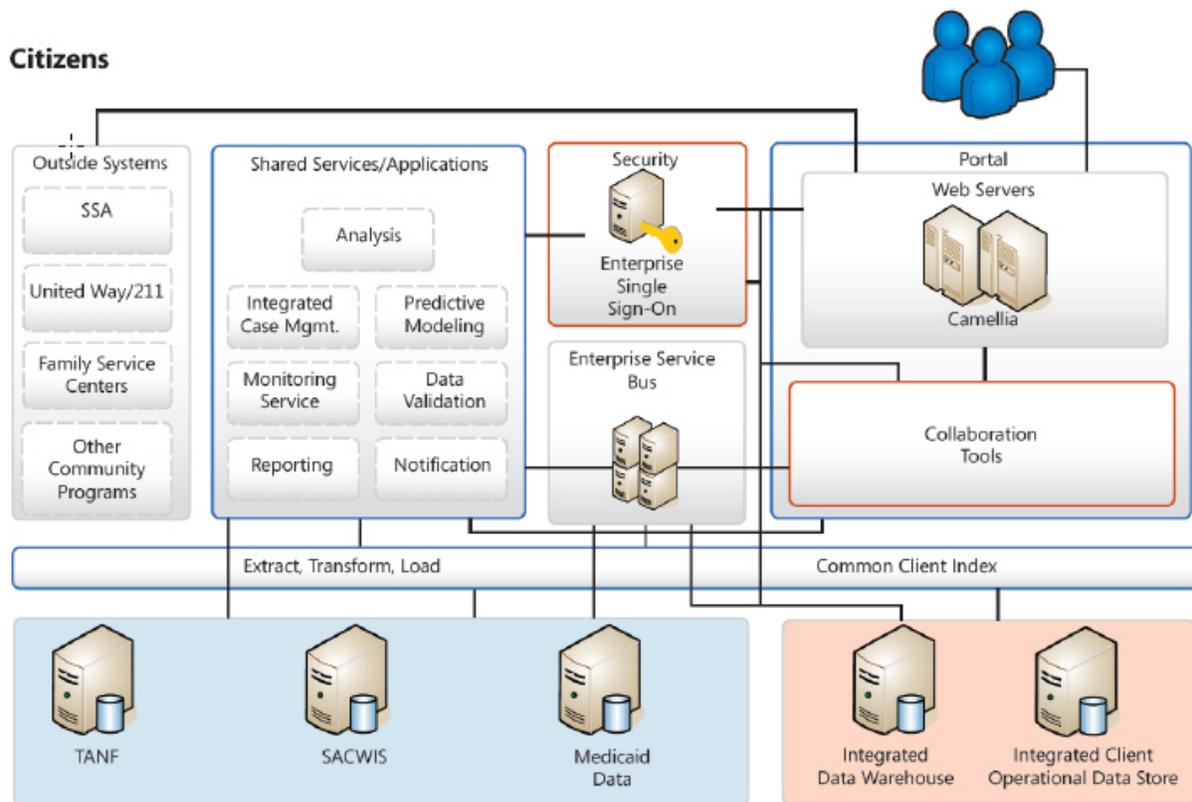
Figure 3–1 Project Camellia Portal

Described primarily as “an interoperability project,” the Camellia Project plans to connect five separate state agencies and six distinct programs, including Food Stamps, Temporary Assistance for Needy Families (TANF), Medicaid, public health insurance for children, mental health services, and rehabilitation services.

Camellia is designed to integrate with existing systems through the use of middleware technology and an enterprise service bus. Benefits of this approach will include:

- Automated Web-based outreach screening and referral function directly linking referrals with and across state agencies;
- Automated sharing of eligibility information across agencies;
- Automated initial client and worker scheduling function to reduce number of office visits;
- Ability for clients to access screening, referral and eligibility information from any site with Internet access;
- Ability for case managers to fully coordinate case activities for families.

Figure 3-2 presents a view of the systems and technology planned to provide services and information to citizens.



**Figure 3–2 Project Camellia Systems and Technology**

### 3.1.1 Information Sources

Alabama.gov, *Camellia Health & Human Services Information Tool*, <http://camellia.alabama.gov/default.aspx>.

Crabtree, Cathy R., Associate Commissioner, Alabama Department for Mental Health and Mental Retardation, *Camellia Project Update: Alabama's HHS Departments Knock Down Silos*, [http://www.stewardsofchange.com/LearningCenter/Documents/CASE\\_STUDIES/Camellia.PDF](http://www.stewardsofchange.com/LearningCenter/Documents/CASE_STUDIES/Camellia.PDF).

### 3.1.2 NHSIA Viewpoint Applicability

- Business
- Infrastructure

### 3.1.3 Key Features and Lessons Learned

Project Camellia is intended to achieve interoperability across multiple business processes to streamline eligibility determination and case management among individual legacy systems by using middleware technology. It also uses portal technology and shared services to facilitate access and reuse.

Due primarily to a lack of funding at the state level, Project Camellia has not been fully implemented. At this point, the project provides only an eligibility screening questionnaire that takes users through a series of questions and then presents a list of services for which they may be eligible. If and when the project is complete, it will provide an example of state-wide interoperability, including the following:

- Portal access for citizens, caseworkers, and providers
- Online eligibility determination
- Creation of a common client index via data federation
- Use of middleware technology to achieve legacy integration

## 3.2 Maryland – Montgomery County Department of Health and Human Services

The Montgomery County DHHS is a good example of a local government entity that is pursuing integrated human services. Uma Ahluwalia is its director; the department includes five major HHS domains (Aging and Disabilities; Behavioral Health and Crisis Services; Children, Youth and Family Services; Public Health Services; and Special Needs Housing) and spans 60 programs. The Department has coordinated with ACF and SAMHSA.

Montgomery County DHHS has defined its overarching objectives in terms of desired outcomes:

- Earlier comprehensive identification of individual/family needs
- Quicker delivery of comprehensive and integrated services – would reflect a public and private partnership effort
- Individuals/families achieving outcomes identified in their respective case plans
- Improved cooperation and collaboration among staff of the public and private partners
- Improved client functioning – place-based approach to care delivery where possible
- Improved client satisfaction
- Reduction in length of stay in services/treatment/care
- Reduction in recidivism

- Increased efficiencies – a Return on Investment/Social Return on Investment (ROI/SROI) metric

The model used for the organizational structure and operational decisions has the following features:

- One director
- Centralized administrative functions
- Moving towards single client record supported by an interoperable database
- Uniform intake form to identify all service needs
- Designated entire HHS entity as HIPAA covered – including social service and income support programs

The interoperability efforts of the Montgomery County DHHS are on-going, though funding poses considerable constraints. Ms. Ahluwalia indicated that they have not yet identified a system for integrated case management.

### 3.2.1 Information Sources

Montgomery County, MD, *Department of Health and Human Services*, <http://www.montgomerycountymd.gov/hhstmpl.asp?url=/content/hhs/index.asp>, 12 May 2011.

Note: The following documents are housed on the APL NHSIA DMZ site, References library, States folder. Access to this site and these documents requires an APL account.

Montgomery County, MD, *SAMHSA/DHHS Interoperability Meeting*, 6 July 2010.

Ntanyiingi, Mano and Harold Lehmann, *Estimating the Social Return on Investment of Information Exchange in Montgomery Country Department of Health and Human Services*, DHHS-JHU-SOM, December 2010.

### 3.2.2 NHSIA Viewpoint Applicability

- System
- Information
- Business

### 3.2.3 Key Features and Lessons Learned

- The briefing used for the SAMHSA meeting highlights the Montgomery County DHHS emphasis on assessing ROI and reporting the effectiveness of their programs.
- Montgomery County DHHS is implementing interoperability in its operations: family team meetings and Family Justice Center structures support coordination of services
- Their position is that policy must accommodate:
  - Integrated eligibility
  - Blending and braiding funds
  - Confidentiality
  - Evidenced-based practice

- Interoperability
- Mano Ntanyiingi and Harold Lehmann study findings:
  - Duplication in information systems costs to DHHS \$15K per program or an estimate of \$1M (with a total of 60 programs) every year.
  - Investing in an efficient system that reduces duplication can be beneficial to the DHHS and its partners.

### **3.3 New York City (NYC) Health and Social Services (HSS)-Connect**

NYC HSS-Connect is a program under the NYC Health and Human Services intended 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 clients”. The initiative’s guiding principles are to:

- Establish a client-centric approach
- Increase and manage accessibility of information
- Improve accountability
- Utilize modern and flexible technology

with the following objectives:

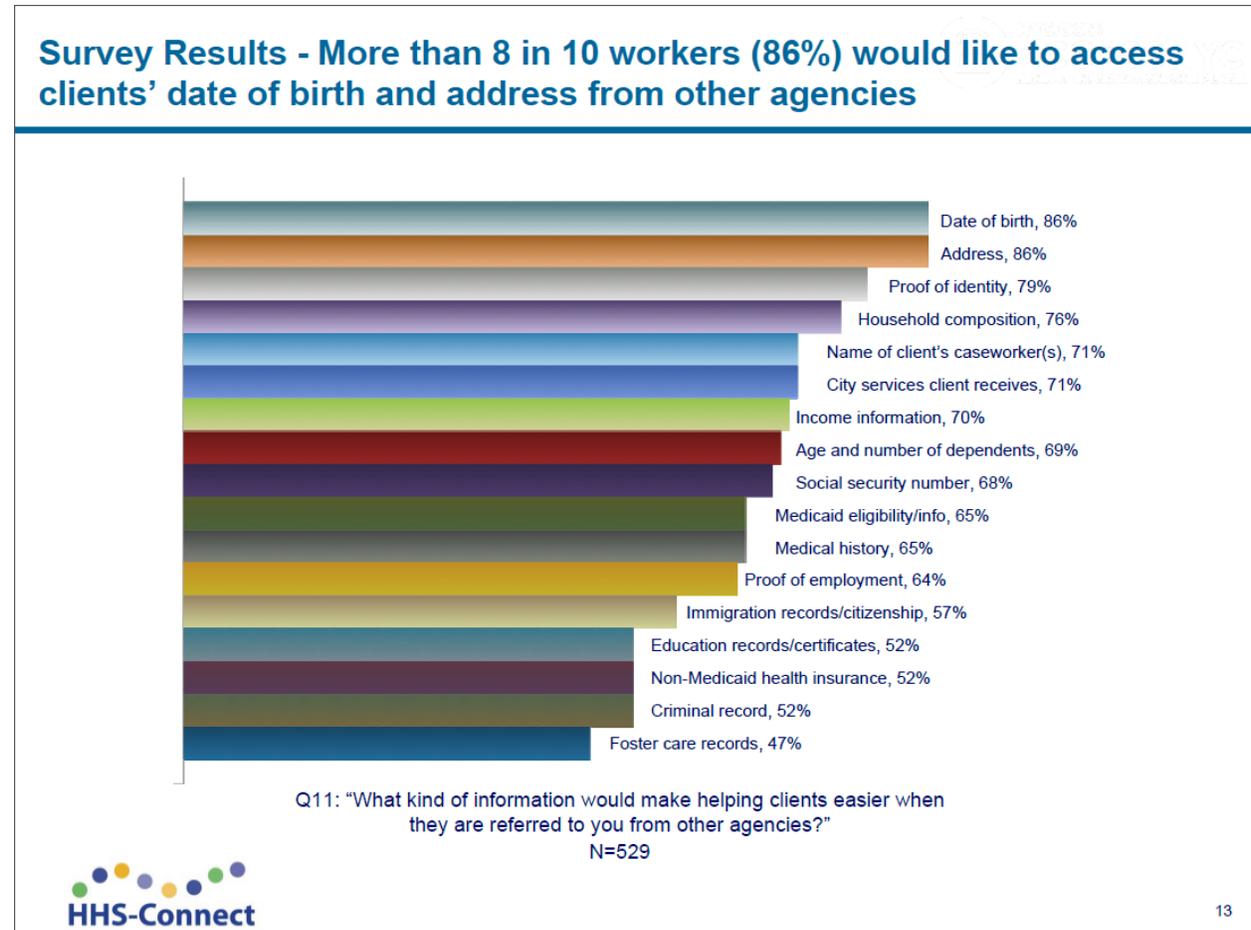
- Provide a 360-degree view of clients and the services they receive
- Facilitate information sharing and collaboration between NYC, state, and providers
- Allow clients to provide information once
- Have clients interact with NYC vs. multiple agency stovepipes

The key activities of the NYC HSS-Connect program have been coordination of stakeholders through workshops to identify objectives and data sharing opportunities, establishment of a conceptual architecture, and implementation of foundational components of the architecture starting with “quick win” components.

Stakeholder groups were used to establish use cases, which helped to identify key data sharing opportunities. They developed information sharing standards that could be incorporated into NIEM, which is being used in following initiatives:

- NYC Department of Information Technology and Telecommunications (DoITT): Data Share pilot – implemented NIEM for Justice Data Sharing
- NYC Business Express
- HSS-Connect Program
  - School meals online application
  - Medicaid renewal online application
  - Food Stamp online application
  - Work Connect Portal : supports caseworkers, provided integrated view of client information
  - Common Client Index
  - HHS New/ Replacement Case Management Systems

In 2008, the NYC HHS-Connect program conducted a survey of HHS workers to establish a baseline for improving the worker experience, with plans to repeat the survey annually to measure improvements. Workers surveyed indicated that jobs would be easier with better data-sharing capabilities. The key information needs are summarized in 3-3.



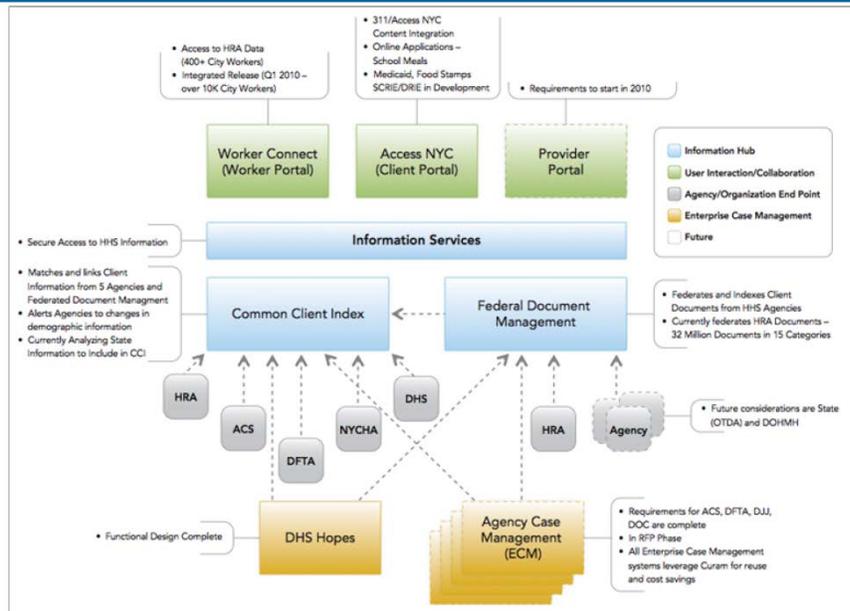
**Figure 3–3 NYC HHS-Connect Survey for Information Needs**

Additional data sharing needs identified through workgroups include:

- Information about related family members and other potential contacts
- Client status with other agencies (e.g., what services are they receiving)
- Common client index
- Access verification documentation (e.g., proof of citizenship, income)

The conceptual architecture and foundational components developed for NYC HHS-Connect are illustrated below in Figure 3-4 and Figure 3-5.

### Solution Overview - High Level Conceptual Architecture



HHS-Connect

Figure 3-4: NYC HSS-Connect Conceptual Architecture

### Solution Overview Foundational Components

Component	What is it?	Features / Implications
Worker Connect	Web portal for workers to search for clients and view an integrated set of information about the client from multiple systems. Dual interface modes aggregate standard information regardless of data source or provide source system data specific user interface. Platform: Oracle Portal.	<ul style="list-style-type: none"> <li>•Dynamic access to additional content occurs automatically as data sources are added to the CCI.</li> <li>•Externalized integration layer security reduces maintenance.</li> <li>•Possible applicability for non-HHS domain users.</li> </ul>
Common Client Index (CCI)	An enterprise registry of client identifier linkages about a client and the systems that contain the client's information. Platform: IBM MDM Server	<ul style="list-style-type: none"> <li>•ETL / Data standardization</li> <li>•Probabilistic / Deterministic Matching</li> <li>•Alerts of client data changes</li> </ul>
Data Share	A platform for secure, guaranteed delivery messaging providing enterprise service bus capabilities. Platform: IBM MQ Server.	<ul style="list-style-type: none"> <li>•Composite applications integrate CCI, EEM, agency system web service and federated document index access</li> </ul>
NIEM Based Information Exchange	Use of the National Information Exchange Model standards for XML schema description of information exchanges.	<ul style="list-style-type: none"> <li>•Information exchange and reuse across agencies, domains and with external organizations</li> </ul>
Enterprise Entitlement Management (EEM)	Role based data request and result XML data filtering capability applied at the integration layer to data requests and results through data share. Platform: CA EEM.	<ul style="list-style-type: none"> <li>•Integration layer data access controls could allow legacy or external systems to utilize client data services.</li> </ul>
Federated Document Index	A consolidated repository of meta data providing access to multiple repositories / platforms containing content for a client. Platform: IBM FileNet P8.	<ul style="list-style-type: none"> <li>•Enable cross platform document</li> <li>Possible applicability for non-HHS domain users</li> </ul>
UPM/AM	Simplified sign-on and user provisioning automation simplify access and authorization. Platform Novell / CA SiteMinder.	<ul style="list-style-type: none"> <li>•Integration with Enterprise LDAP</li> </ul>

Figure 3-5: NYC HSS-Connect Foundational Components

Based on the established architecture, several “quick win” capabilities have already been implemented:

- Client Portal
- Worker Connect Portal
- School Meals Application
- Common Client Index
- Federated Document Index

### 3.3.1 Information Sources

*HHS-Connect: New York City HHS-Connect Program Use of Standards Based Information Exchanges*, Briefing given to National Association of State Chief Information Officers (NASCIO) Innovations Forum, 24 August 2010.

*HHS-Connect: New York City HHS-Connect Program Use of Standards Based Information Exchanges*, Briefing given to Johns Hopkins University Applied Physics Laboratory (JHU/APL), Stewards if Change (SOC), 10 December 2010.

Tumin, Zachary, *New York’s HHS-Connect: IT Crosses Boundaries in a Shared-Mission World*, posted to Connecting America’s Leaders: Governing Blog, <http://www.governing.com/blogs/bfc/New-Yorks-HHS-Connect-IT.html>, 24 August 2009.

### 3.3.2 NHSIA Viewpoint Applicability

- Business
- Information
- System

### 3.3.3 Key Features and Lessons Learned

- Key stakeholders considered are: client/customer, external partners, city employee, and agency.
- In an interview, Linda Gibbs, the Deputy Mayor for Health and Human Services, noted that there was a 60 percent overlap of the clients and that, on average, five agencies were involved with a single family without any knowledge of the other agencies. (*New York’s HHS-Connect: IT Crosses Boundaries in a Shared-Mission World*)
- Worker Connect supports caseworkers; it can enable integrated case management (ICM) but is not an ICM tool per se.
- Per HHS Connect, “Efficient and effective Health and Humans services Delivery System” should: improve client outcomes, improve operational effectiveness, and improve worker experience.

## 3.4 Pennsylvania – Montgomery County

The Information Portability Project in Montgomery County, PA, involved reviewing business processes, technology, and mobility, focusing on the Montgomery County Human Services Administration Office of Children and Youth (OCY) and the Department of Behavioral Health/Developmental Disabilities (BH/DD). The team (county agency staff; Stewards of

Change; University of PA Field Center for Children’s Policy, Practice, and Research; Department of Public Welfare for the Commonwealth of PA) also reviewed and analyzed confidentiality and privacy laws. The project was launched in 2009; reports were delivered in early 2010.

The project developed a roadmap with supporting documentation and recommendations for improving services. Challenges include inefficient and paper-intensive policies and practices; compartmentalized operations; reservations about sharing information due to confidentiality concerns; data availability and use; limited sophistication in current technology policies, practices, and structures; and the effort required to foster collaborative relationships within the department.

### 3.4.1 Information Sources

Montgomery County, PA, Child Welfare, <https://partners.jhuapl.edu/sites/HSNIA/References>, 2010.

- Information Portability Project reports provided by Stewards of Change
- Process maps and narratives

Note: Documents are housed on the APL NHSIA DMZ site, References library, States folder. Access to this site and these documents requires an APL account.

### 3.4.2 NHSIA Viewpoint Applicability

- Business

### 3.4.3 Key Features and Lessons Learned

Lessons learned from the business process review include:

- Some case workers spend a significant amount of time on non-client facing tasks (e.g., data search and verification, tracking history of received services, data entry, photocopying).
- Clients must provide the same basic information repeatedly. Duplicate profiles of many existing clients exist in the BH/DD system. Caseworkers re-enter basic information using client-provided information from paper forms.
- Some staff members do not have access to all the information they need to support their clients. For example, OCY caseworkers cannot access the state welfare system to verify financial information.
- Process execution is inconsistent across offices. Some training manuals are out of date.
- Some staff/functions use paper copies instead of using electronic records. Majority of state-mandated and internal forms exist only in paper format.
- No scheduling tool is available to schedule clients for interviews or renewals for multiple programs during the initial contact with the client.
- Data access and sharing across agencies is challenging and is often restricted to a few individuals. There are concerns about confidentiality of the information; of special concern is information about drug and alcohol use/abuse.
- There are mixed reports about sharing information with organizations outside the Human Services Administration (HSA).

### 3.5 Rhode Island Global Waiver and Data Warehouse

As presented at the Medical Management Information Systems (MMIS) conference in August, 2010, Rhode Island sought to unify multiple siloed data sources (Figure 3-6) to help integrate data into a data warehouse (Figure 3-7). The goals for the project were to coordinate client service and provide management reports.

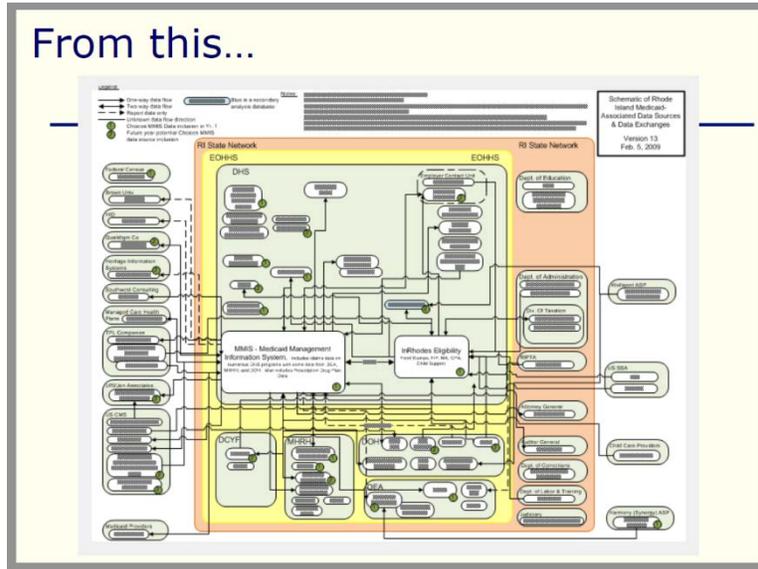


Figure 3-6 RI Before: Data Islands

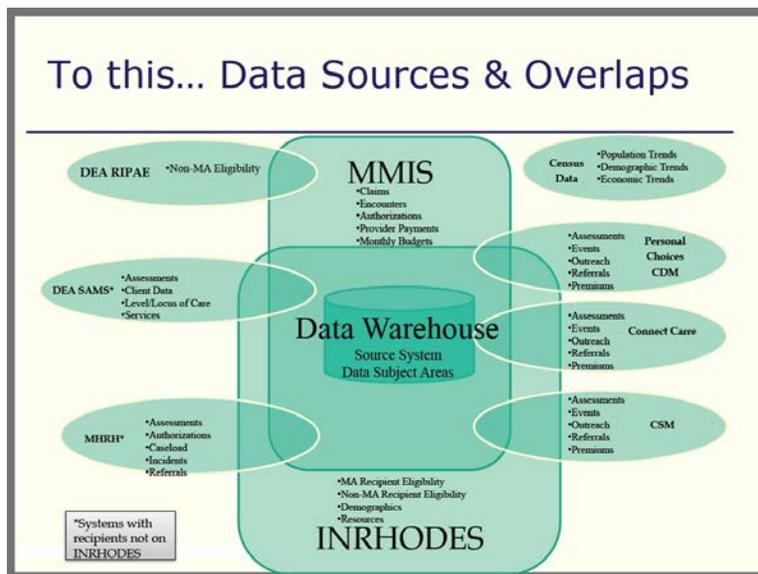


Figure 3-7 RI After: Data Warehouse

Primary data sources came from four agencies: RI Department of Human Services (DHS); Department of Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH); Department of Elderly Affairs (DEA); and U.S. Census data. Figure 3-8 illustrates that the ETL

Tool (software that extracts, transfers, and loads the data warehouse based on inputs from the data sources) forms the core of the system.

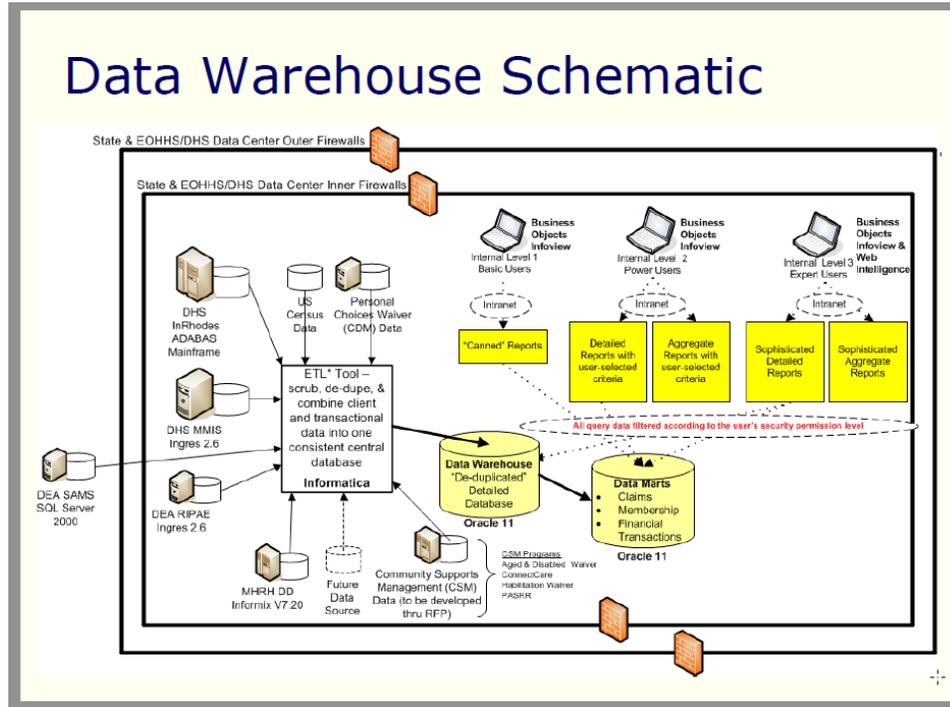


Figure 3-8 RI Data Warehouse

Rhode Island focused on security throughout the project, including a user approval process, legal oversight and memoranda of understanding, and documentation and training. To facilitate the user approval process, they created a clear and simple user authorization form, which is shown in Figure 3-9.

# Authorization Form & Buy-in

**Rhode Island Human Services Data Warehouse User ID Request**

Add New User  Change  Delete

Employee  or Contractor

**User Information:** (to be filled out by the user, please print)

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_ Middle Initial: \_\_\_\_\_

Email Address: \_\_\_\_\_

User's Team: \_\_\_\_\_ Supervisor Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Authorizer Name: \_\_\_\_\_

As a user of the Rhode Island Human Services Data Warehouse, I may have access to Protected Health Information (PHI). PHI includes but is not limited to any individually identifiable information related to the past, present or future physical or mental health or condition of an individual, or the past, present or future payment for health care, provided to an individual.

By signing below, I acknowledge the following:

DHS policies and procedures, Rhode Island law, and federal law prohibit the unauthorized use or disclosure of PHI. I will obtain PHI only when I am able to provide work to my members or any other individuals whose doing so is necessary to do my job and DHS policies or procedures permit the use or disclosure.

I will not attempt to access or look at PHI other than what is required to perform my job.

I will not remove PHI from the Human Services Data Warehouse or secure areas within my work premises unless doing so is necessary to perform my job.

I will abide by all DHS policies and procedures relating to PHI.

Upon leaving the premises of the state or Rhode Island or its business associates, I understand and acknowledge my access will be terminated. The business associate organization will notify the appropriate personnel of any access.

After I leave the workforce of the state of Rhode Island or its business associates, I will continue to observe DHS policies and procedures with regard to PHI that I had access to while a workforce Member.

I understand that if I violate DHS policies or procedures relating to PHI, I may be subject to employment or contractual discipline up to and including the termination of state employment or contract, and also may be subject to civil liability or criminal prosecution.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Customer must return to the address below, the form cannot be processed without all signatures – Please turn the form over for authorizer signatures and release details.

RI Human Services Data Warehouse  
601-877-7800  
201 Metro Center Blvd.  
Providence, RI 02908

Version 1.0 August 2010

Program Access	Confidential Information? <input type="checkbox"/>	Select Only One box per Row	
		Report View/Refresh	Report Create (can also view reports)
<b>To be filled out by the Authorizer only</b>	<small>How is consent given for confidential information and Protected Health Information?</small>		
Budget Reporting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Behavioral Health, Developmental Disabilities and Hospitals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child Care Assistance Program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community Support Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross Program Reports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Department of Children, Youth and Families	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Department of Education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Department of Health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General Public Assistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medical Assistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pharmaceutical Assistance for the Elderly, Supplemental Nutrition Assistance Program, Temporary Assistance to Needy Families	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to HIV Data is required <input type="checkbox"/>			
DORHHS Approval: _____			
Access to Substance Abuse Data is required <input type="checkbox"/>			
RHDHHS Approval: _____			
Authorizer Signature: _____ Date: _____			
Authorizer Printed Name: _____			
Data Warehouse Approval: _____ Date: _____			
Data Warehouse Approval Printed Name: _____			

Version 1.0 August 2010

**Figure 3–9 RI Authorization Form and Buy-in**

### 3.5.1 Information Sources

MMIS, *2010 MMIS Conference: Making Medicaid Information Sustainable*, [http://mmisconference.org/MMIS2010\\_Agenda/100815\\_Agenda.html](http://mmisconference.org/MMIS2010_Agenda/100815_Agenda.html), 2010.

Racca, Ralph, and Art Schnure, *The Rhode Island Global Waiver and the Data Warehouse*, presented at the 2010 MMIS Conference, Data Warehouse session, [http://www.mmisconference.org/MMIS2010\\_Agenda/Presentations/100818\\_1600\\_04/Wednesday\\_Data\\_Warehouse\\_Racca\\_Schnure.pdf](http://www.mmisconference.org/MMIS2010_Agenda/Presentations/100818_1600_04/Wednesday_Data_Warehouse_Racca_Schnure.pdf), 18 August 2010.

### 3.5.2 NHSIA Viewpoint Applicability

- System
- Infrastructure

### 3.5.3 Key Features and Lessons Learned

In the referenced Data Warehouse presentation, RI identified the following key features of their approach:

- Build in security features
- Data warehouse is an essential progression from siloed systems to reach data integration
- Challenging to work with older technical systems
- Ambitious integrations take planning and time

### 3.6 Wisconsin ACCESS/Client Assistance for Re-Employment and Economic Support (CARES)

Wisconsin provides a single self-service portal for clients to check for eligibility for several kinds of services, apply for benefits, and manage information about themselves. The portal also enables community partners, providers, and employers to access related sites. Figure 3-10 is a screen shot of the ACCESS home page.



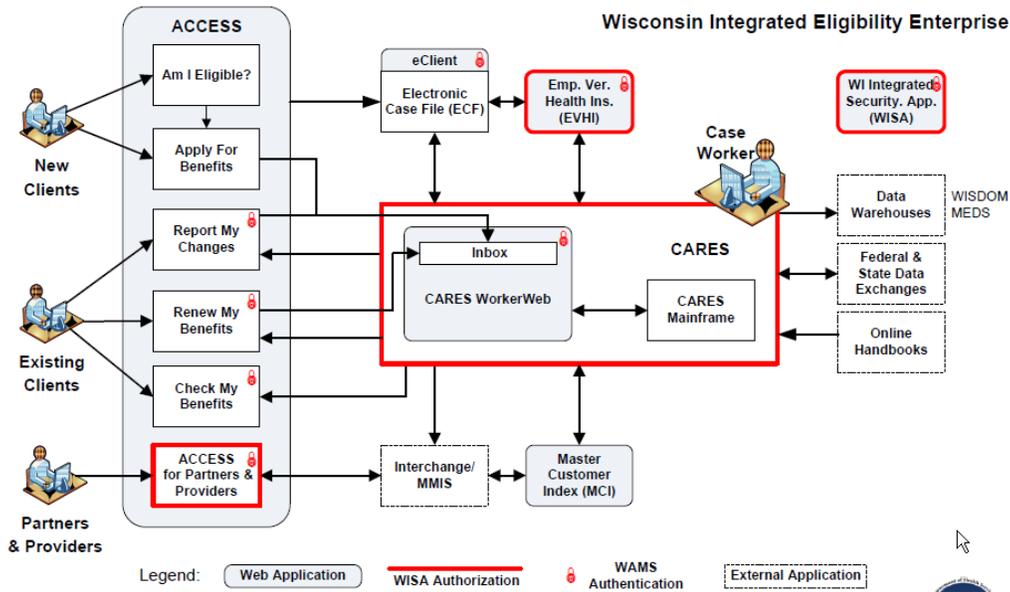
**Figure 3–10 Wisconsin ACCESS Portal**

The ACCESS portal is integrated with the state’s eligibility and case management system (CARES – Client Assistance for Re-Employment and Economic Support) and the state’s Medicaid Management Information System (interChange). ACCESS components allow:

- new clients to check for eligibility and apply for benefits,
- existing clients to check their benefits, report changes and renew benefits,
- and partners and providers to determine temporary eligibility.

The system supports health care enrollment in BadgerCare Plus, Wisconsin’s health insurance program for children. Figure 3-11 shows the integration between ACCESS and the case worker’s CARES system. The systems share information.

## CARES Enterprise in 2010



**Figure 3–11 Wisconsin ACCESS/CARES**

Case workers use CARES to register clients, enter applications, record eligibility results, notify clients, issue benefits, and exchange information. CARES support functions include workload management, case maintenance, information management, and system support.

CARES and ACCESS share technology solutions in a service-oriented architecture. Figure 3-12 illustrates the technologies, services, and supporting software.

## CARES / ACCESS Technology Overview

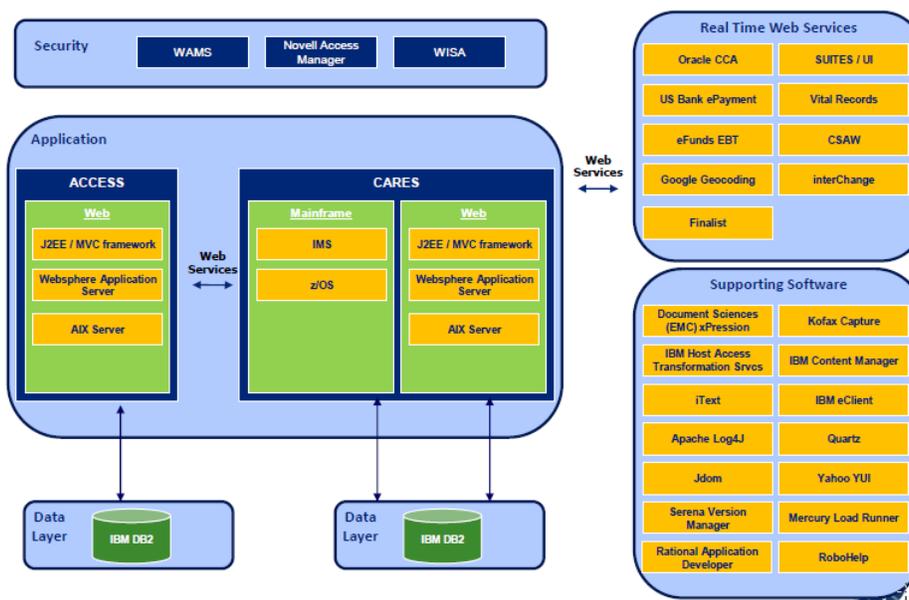


Figure 3–12 Wisconsin CARES/ACCESS Technology

### 3.6.1 Information Sources

Wisconsin.gov, *ACCESS: Your Connection to Programs for Health, Nutrition and Child Care*, <https://access.wisconsin.gov/>.

Wisconsin ACCESS Technical FAQs,

[https://partners.jhuapl.edu/sites/HSNIA/References/States/WI/ACCESS\\_Technical\\_FAQs.pdf](https://partners.jhuapl.edu/sites/HSNIA/References/States/WI/ACCESS_Technical_FAQs.pdf).

Note: This document is housed on the APL NHSIA DMZ site, References library, States folder. Access to this site and this document requires an APL account.

Wisconsin Department of Health Services, *Wisconsin CARES: An Overview*,

[http://www.shadac.org/files/shadac/publications/WICARESOVERVIEW\\_10.13.2010.pdf](http://www.shadac.org/files/shadac/publications/WICARESOVERVIEW_10.13.2010.pdf), 13

October 2010.

Note: This document is housed on the APL NHSIA DMZ site, References library, States folder. Access to this site and this document requires an APL account.

### 3.6.2 NHSIA Viewpoint Applicability

- Systems

### 3.6.3 Key Features and Lessons Learned

Wisconsin's systems include the following key features:

- Portal access for clients and providers
- Linkages between caseworkers' and clients' systems
- Linkage between CARES and state's MMIS (interChange)
- Shared Web services

The success of the ACCESS portal is emphasized by its transfer to New York, Georgia, Colorado, New Mexico, and Michigan.

### 3.7 Health Information Exchange (HIE)

Health Information Exchange (HIE) refers to the electronic movement of health-related information among organizations according to nationally recognized standards.<sup>7</sup> In early 2010, HHS provided \$400M Health Information Technology for Economic and Clinical Health (HITECH) awards under the American Recovery and Reinvestment Act (ARRA). These awards were part of the stimulus package to help state-designated entities build a statewide backbone for HIE to facilitate exchanging information across providers. This work is synergistic with the grants to help health care providers adopt electronic health record (EHR) technology to facilitate migration from paper to online access.

#### 3.7.1 Information Sources

U.S. DHHS ONC, *State Health Information Exchange Cooperative Agreement Program*, <http://healthit.hhs.gov/portal/server.pt?open=512&objID=1488&mode=2>, 16 March 2011.

Thompson Reuters, *Center for Health Information Exchange*, <http://healthcarescience.thomsonreuters.com/hie/>, © 2011.

Bates, Matthew, MPH, Thomson Reuters, and Vik Kheterpal, MD, CareEvolution, *White Paper - Statewide Health Information Exchange: Best Practice Insights from the Field*, [http://img.en25.com/Web/ThomsonReuters/TR%20HIE%20WhitePaper\\_Rev\\_5\\_13\\_10\\_2855.pdf](http://img.en25.com/Web/ThomsonReuters/TR%20HIE%20WhitePaper_Rev_5_13_10_2855.pdf), updated May 2010.

U.S. DHHS ONC, *Defining Key Health Information Technology Terms*, [http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS\\_0\\_10731\\_848133\\_0\\_0\\_18/10\\_2\\_hit\\_tems.pdf](http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_10731_848133_0_0_18/10_2_hit_tems.pdf), 28 April 2008.

#### 3.7.2 NHSIA Viewpoint Applicability

- Business
- Projects

#### 3.7.3 Key Features and Lessons Learned

The referenced White Paper identifies best practices for statewide HIEs.

- “Obsess about tactics, not strategy.” Focus on doing, not strategizing about how to do.
- “Plan for mistakes – ensure they are small and cheap.” Start with a small pilot. Learn from it and expand on it.

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<sup>7</sup> *Defining Key Health Information Technology Terms*

- “Avoid the conference room design trap.” Engage clinicians and physicians from the start. Don’t spend half your money on design and run out of money before you’ve built something. Think about legal agreements, technical architecture, and governance structure early.
- “Take baby steps – go live with something.” Pilot something and see how it works. Don’t wait for perfection.
- “Avoid the empty HIE syndrome.” Information sharing needs to be two-way. Make the HIE a means of bringing fragmented information from the health care system together for the good of the patient. Balance “broad and shallow” with “narrow and deep” data. Try to leverage state or regional historical claims data, representing a broad populace. Narrow and deep data will flow from current clinical contact with patients.
- “Focus on the clinical use case first.” HIE network should eventually encompass many functions (reporting, biosurveillance, eligibility checking, claims/administrative data transmissions, and consumer communications). But first and foremost, focus should be its clinical use: provide information that leads to better outcomes for patients.
- “Say no to an opt-in consent policy.” Instead, choose an opt-out model that considers patients in the exchange unless they expressly choose to opt-out. Administer opt-out through the provider’s office. Avoid letting patients restrict access to certain physicians or facilities or to restrict the sharing of certain diagnoses.
- “Caregivers can’t drink from a fire hose.” Filter and organize data so the physician can digest, understand, and use the information to treat patients. Embed analytic capabilities in the HIE to deliver intelligent presentation of information to support decision-making. Think about modeling presentation on Expedia’s approach for finding flights.
- “Build analytics into the system at start-up.” Should include decision support in the approach. HIE should be able to:
  - “Link clinical and administrative data
  - Apply data standardization that enables analytical readiness
  - Select specific clinical and administrative data fields for centralized decision support
  - Develop reliable measures for evaluating and demonstrating Meaningful Use, measuring quality outcomes, and validating cost savings.”
- “Don’t become the state EHR provider – focus on exchange.” Build the network first. Then build the on-ramps for providers.

### **3.8 Health Information Security and Privacy Collaboration (HISPC)**

The Health Information Security and Privacy Collaboration (HISPC) was established in 2006 by RTI International under contract with HHS and funded by the Agency for Healthcare Research and Quality (AHRQ). HISPC now includes 42 states and territories. HISPC’s goals are to identify best practices and develop solutions for interoperable electronic health information through multi-state collaboration.

Several reports were published by RTI International under contract with the Office of the National Coordinator for Health Information Technology (ONC) and AHRQ. During an 18-month period ending in 2007, 34 participating state teams successfully completed an assessment of the variation among business practices, policies, and laws to gain a better understanding of the privacy and security landscape within their states. This prepared the states to develop a comprehensive plan to protect health information that is stored and exchanged electronically. The state teams also identified practices, policies, and laws that create barriers to electronic health information exchange and have worked to develop possible solutions to these barriers that both preserve and protect privacy and security and promote interoperable electronic health information exchange.

While the majority of the reports focused on policy, law, and business practices, there was an interesting article on challenges and approaches to patient matching that could inform the systems viewpoint.

One of the RTI international reports was the “Assessment of Variation and Analysis of Solutions” (AVAS). The purpose of the AVAS is to illustrate, in a descriptive report, the variations among the organization-level business practices, policies, and laws related to privacy and security as identified by each state team. The AVAS report also describes the process for identifying and proposing potential solutions, including an explanation of how state teams evaluated and prioritized the solutions and their feasibility. The AVAS identifies issues in 11 areas with implications for private and secure nationwide electronic health information exchange:

- Variation in the interpretation and application of consent
- Misunderstandings and differing applications of HIPAA Privacy Rule requirements
- Misunderstandings and differing applications of the HIPAA Security Rule
- Security
  - Authentication and authorization
  - Inadequate application-level data access or screening controls
  - Audit programs
  - Secure transmission of personal health information
  - Lack of a sound security infrastructure
  - Variability in administrative and physical safeguards
- Trust in security
- State laws
- Networking issues
- Linking data from multiple sources to an individual
- Interstate issues
- Disclosure of personal health information
- Cultural and business issues

The report also summarized and analyzed proposed solutions from the state teams in five areas:

- Reducing variation: practice or policy solutions
- Legal or regulatory issues
- Technology and standards
  - Data security and transmission

- Patient identity management
- Segmenting data
- Standards that affect technology
- Education
- Implementation and governance of privacy and security solutions

### 3.8.1 Information Sources

U.S. DHHS ONC, *The Health Information Security and Privacy Collaboration (HISPC)*, <http://healthit.hhs.gov/portal/server.pt?open=512&objID=1240&parentname=CommunityPage&parentid=2&mode=2>, 9 April 2010.

Research Triangle Institute (RTI) International, *Health Information Security and Privacy Collaboration (HISPC)*, <http://www.rti.org/page.cfm?objectid=09E8D494-C491-42FC-BA13EAD1217245C0>, © 2011.

### 3.8.2 NHSIA Viewpoint Applicability

- Project
- Systems

### 3.8.3 Key Features and Lessons Learned

The key feature of this initiative was the approach to multi-state collaboration with a focus on harmonizing privacy and security practices.

## 3.9 Statewide Automated Child Welfare Information Systems - SACWIS

This material was taken from the ACF [About SACWIS](#) site:

Federal support for SACWIS originated from Title XIII, Section 13713., ENHANCED MATCH FOR AUTOMATED DATA SYSTEMS, of the Omnibus Budget Reconciliation Act (OBRA) of 1993 (Public Law 103-66), enacted on August 19, 1993. A SACWIS is expected to be a comprehensive automated case management tool that meets the needs of all staff (including social workers and their supervisors, whether employed by the State, county, or contracted private providers) involved in foster care and adoptions assistance case management. The SACWIS is to hold a State's "official case record" - a complete, current, accurate, and unified case management history on all children and families served by the Title IV-B/IV-E State agency. By law, a SACWIS is required to support the reporting of data to the Adoption and Foster Care Analysis Reporting System (AFCARS) and the National Child Abuse and Neglect Data System (NCANDS). Furthermore, a SACWIS is expected to have bi-directional interfaces with a State's Title IV-A (Temporary Assistance for Needy Families), Title XIX (Medicaid), and Title IV-D (Child Support) systems.

SACWIS systems must also collect and manage the information necessary to facilitate the delivery of child welfare support services, including family support and family

preservation. States are encouraged to add complementary functionality to their SACWIS, such as functionality that supports child protective services, thereby providing a unified automated tool to support all child welfare services. States may incorporate other programs into a SACWIS (such as TANF emergency assistance, juvenile justice, mental health, and adult protective services) or provide access for other human service professionals (such as family courts, schools, medical providers, and providers of services to stabilize families and ensure child well-being).

At least 37 states initially implemented SACWIS, and additional guidance has been provided through memoranda issues in 2007-2009. One of the memoranda ([ACYF-CB-IM-07-03](#)) provided information regarding the use of SOA for SACWIS.

### 3.9.1 Information Sources

U.S. DHHS ACF, *About SACWIS*,

<http://www.acf.hhs.gov/programs/cb/systems/sacwis/about.htm>.

U.S. DHHS ACF, *Children's Bureau – Federal Guidance*,

<http://www.acf.hhs.gov/programs/cb/systems/sacwis/federal.htm>.

U.S. DHHS ACF, *Service Oriented Architecture (SOA)*, Information Memorandum, ACYF-CB-IM-07-03, [http://www.acf.hhs.gov/programs/cb/laws\\_policies/policy/im/2007/im0703.htm](http://www.acf.hhs.gov/programs/cb/laws_policies/policy/im/2007/im0703.htm), 8 May 2007.

Children's Bureau of State Systems, *MITA Business Processes SACWIS Crosswalk*, PowerPoint briefing, <https://partners.jhuapl.edu/sites/HSNIA/References>.

Note: This document is housed on the APL NHSIA DMZ site, References library. Access to this site and this document requires an APL account.

### 3.9.2 NHSIA Viewpoint Applicability

- Business
- Systems

### 3.9.3 Key Features and Lessons Learned

The description of SACWIS implementation requirements and options includes the following:

- Interface requirements may be met at different levels of automation (on-line, batch, common data base, other automated electronic process)
- Automation of title IV-E eligibility determination
- Automatically accept and process referrals from state's title IV-E (Foster Care) agency
- Automatically accept and process case updates (e.g., from county attorney, caseworker, IV-A, IV-E, Medicaid) and provide information to other programs on a timely basis
- Incorporate National Youth in Transition Database (NYTD) data collection and reporting activities related to youth in foster care into SACWIS

The Children’s Bureau of State Systems developed an initial mapping of child welfare business processes and SACWIS functionality to the MITA 2.0 business model. This analysis represents an extension of the MITA framework to another, significantly different, human service domain and therefore is very relevant to the NHSIA effort.

### **3.10 Strategy to Apply Reusable Technology (START)**

START is a cooperative initiative of four states: Illinois, Minnesota, Oregon and Utah. Their proposal is to develop a common, multi-tenancy, core HHS provider management system to serve all four states. The application could subsequently be adopted and extended to meet other state needs. The START initiative applied to the Federal government for funding in 2010, but did not receive a grant. START continues to seek funding for the project.

Key to the START initiative is the governance and management approach, which is described as follows:

- A multi-state governance body would initially direct this effort with the support of the federal government.
- IT infrastructure is financed as a portfolio of interrelated services rather than as independent data systems with duplicated capabilities, low economies of scale, and redundant data.
- Governance model: A representative multi-state governance body would guide architecture development and implement a joint, cooperative provider-management module. The structure would foster transparency and accountability among project partners. A lead state would manage administrative and financial functions. The initial governance structure would evolve as additional business challenges are addressed and other states and programs participate. Federal partners [ONC, Federal Housing Administration (FHA), etc.] would be invited to participate in the governance.

The START concept is to:

- Build a core HHS provider management “cloud” application for the four state partners’ use, but design it to be functional in any and every U.S. state and across jurisdictions.
- Develop business architecture for state-level health, human services, and public health applications by extending the Federal Enterprise Architecture to deployable services.
- Create a representative multi-state governance body to guide architecture development and implement a joint, cooperative provider-management module.

The START initiative is envisioned to result in the following products and outcomes:

- An operating, multi-tenant provider management system (across multiple HHS services and programs) built on new and existing standards and protocols that is reusable and scalable both horizontally and vertically, and ready for multi-jurisdictional and multi-state partners.
- A scalable model, built for a fraction of the cost to replicate development in 50 states and untold local jurisdictions.
- A national business architecture for Health and Human Services and Public Health, including the creation of standards and protocols.

- Accelerated time-to-market development of more person- and client-centered services.
- A conservative federal return on investment in excess of \$5 to \$1 on design, development and implementation costs.

### 3.10.1 Information Sources

States of Illinois, Minnesota, Oregon, and Utah, *Strategy to Apply Reusable Technology (START)*, a White Paper for the Chief Technology Officer (CTO) Office of Science and Technology Policy, Executive Office of the President, submitted 25 January 2010, <https://partners.jhuapl.edu/sites/HSNIA/References>.

Note: This document is housed on the APL NHSIA DMZ site, References library, START folder. Access to this site and these documents requires an APL account.

Note: START does not currently have a Web site.

### 3.10.2 NHSIA Viewpoint Applicability

- Overview
- Systems
- Infrastructure
- Project

### 3.10.3 Key Features and Lessons Learned

A project concept of this complexity and vision would face decision points at which guiding values may be in conflict. The partnership agrees that the following value ranking should be used to help make key project decisions:

1. **Functionality:** START's primary goal is to prove multi-tenancy and realize applications that are usable by all states and across programs.
2. **Time to benefits:** START aims for the shortest elapsed time from concept to go-live. START's initial component would take the most time to develop; after that, development time would decrease dramatically.
3. **Quality:** START is seeking solutions that conform to industry best practice standards. Principles for operational discipline would guide planning, design, development, implementation, and administrative efforts.
4. **Cost:** Developing the infrastructure for this project may have higher upfront cost, but START's multi-tenancy and reusability would create long-term cost savings for programs. Project partners expect that high upfront costs would be mitigated by significant savings once the system is fully operational. It is anticipated that the initial investment would be repaid through future cost avoidance. START would leverage federal business-architecture investments for significant development-stage savings.

The START initiative has considered certain key infrastructure enablers, including:

- Shared services
- Virtualization
- Cloud computing

## 4 Industry Activities Summaries

### 4.1 Commercial Packages to Support Integrated Human Services

Many vendors offer products for human service agencies or community partners to help determine eligibility, organize case information, plan and track activities, and generate compliance reports. Several products for service providers add capabilities to manage clinical data, billing and payments, appointment scheduling, and include assessment and treatment planning tools. Several packages manage electronic health records or electronic medical records; these packages are frequently bundled with “practice management” capabilities as well. Other products focus on monitoring, analysis, and revenue recovery.

#### 4.1.1 Information Sources

Internet search engines reveal many vendors’ Web sites as well as sites that review various commercial software packages. The list below is a subset of findings.

- AccuMed™, <http://www.accumedic.com/>.
- Agency™ Systems, <http://www.agency-sys.com/>.
- AllegianceMD, <http://www.allegiancemd.com/index.html>.
- Allscripts™ EHR, <http://www.allscripts.com/en/solutions/ambulatory-solutions/ehr.html>.
- Aprima™ EHR, <http://www.aprima.com/>.
- BMCASE©, <http://www.bluewaterms.com/>.
- Casewatch Millenium®, [http://www.acmsinc.com/casewatch\\_millennium.html](http://www.acmsinc.com/casewatch_millennium.html).
- ChildOne, <http://www.dmss.us/>.
- ChildTrax, <http://www.childtrax.net/>.
- ClientTrack™, <http://www.clienttrack.com/>.
- Coheris CRM, <http://www.coheris.com/en/page/home.html>.
- Cx360, <http://www.coresolutionsinc.com/>.
- Echo travelEHR™, <http://www.echoman.com/software-services/travelehr>.
- eClinicalWorks, <http://www.eclinicalworks.com/>.
- Efforts To Outcomes (ETO™), <http://www.socialsolutions.com/human-services-software.aspx>.
- Lagan Enterprise Case Management (ECM), <http://www.lagan.com/enterprise-case-management.aspx>.
- eScan Data Systems, <http://escandatasystems.com/>.
- extendedReach, <http://www.extendedreach.com/extendedreach.nsf/index.html?OpenPage&transfer>.
- FAMCare, <http://www.famcare.net/>.
- Lagan Government Customer Relationship Management (CRM), <http://www.lagan.com/government-crm-overview.aspx>.
- Greenway PrimeSUITE®, <http://www.greenwaymedical.com/solutions/prime-suite/>.
- Harmony for Social Services™, <http://www.harmonyis.com/>.
- Health Plan Systems (HPS), <http://www.2hps.com/>.

- KaleidaCare, <http://www.kaleidacare.com/>.
- Microsoft Dynamics CRM, <http://crm.dynamics.com/en-us/>.
- Outcome Results System (ORS), <http://www.outcomeresults.com/>.
- Outcomes Plus+, [http://www.techinvestgroup.com/outcome\\_tracking.htm](http://www.techinvestgroup.com/outcome_tracking.htm).
- Penelope, [http://www.athenasoftware.net/extWebSite\\_2008/templates/index.html](http://www.athenasoftware.net/extWebSite_2008/templates/index.html).
- Provide® Enterprise, <http://www.grouptech.com/>.
- QScend QAlert, <http://www.qscend.com/content/109/121/default.aspx>.
- Qualifacts, <http://www.qualifacts.com/>.
- Sage EHR, <http://www.sagehealth.com/products/ehr/Pages/ElectronicHealthRecords.aspx>.
- SAP CRM, <http://www.sap.com/solutions/business-suite/crm/index.epx>.
- Siebel CRM, <http://www.oracle.com/us/products/applications/siebel/index.html>.
- Siemens Health Services, <http://www.usa.siemens.com/entry/en/?tab=healthcare>.
- SuiteMed™, <http://www.suitemed.com/>.
- Supportive Services Aid (SSAID), <http://www.ssaaid.com/public/index.php>.
- Synchronized Systems, Inc., <http://www.ssi-ny.com/index.html>.
- Verimio, <http://www.dmss.us/>.
- Visual HealthNet, <http://www.mitchellandmccormick.com/behavioral.html>.

#### 4.1.2 NHSIA Viewpoint Applicability

- System

#### 4.1.3 Key Features and Lessons Learned

- Commercial products bundle services to support particular stakeholder groups.
- Some vendors offer to help the purchaser tailor the application.
- Some products enable the purchaser to plug in their own modules.
- Some products are totally Web-based having no software on the user's system (beyond a browser for access).
- Some products are built on standard relational database systems.

## 4.2 Microsoft Connected Health Framework Architecture and Design Blueprint

Microsoft's *Connected Health Framework Architecture and Design Blueprint* is a collection of vendor-agnostic best practices and guidelines for building service- and standards-based, interoperable eHealth solutions. It is written from the premise that an efficient and effective IT infrastructure represents the cornerstone of seamless health and social care. The document presents itself as a model to be used to move health and social care towards a series of easily available, interconnected, reliable and efficient services. Microsoft envisions a world in which "systems interoperate with each other seamlessly to reduce duplication, errors, wait times and management overheads" (Part 1, pg 7).

The framework consists of two major parts. The first part presents a "business framework" for health and social care. In very generic terms, the business framework defines domain concepts,

such as care records and care pathways. The framework goes on to define the consumers of health and social Care systems as well as the information shared between them. Further, it defines the concept of a “seamless” user experience that requires a high degree of information and systems integration.

Lastly, the business framework defines “a business pattern for Health and Social Care.” “A business pattern,” according to Microsoft, “describes a reusable approach to the solution of a particular business problem” (Part 2, pg 77). The business framework then presents a series of business components and associated services that are a part of the business pattern. For example, the “Persons and Identities” component defines a number of services, including “Record New Person” and “Lookup Personal Demographics.”

The second major part of the Connected Health Framework is the “technical framework” or reference architecture. This document focuses on the technical and infrastructure-related aspects. This includes detailed discussions on common architectural challenges such as “identity and access” and “interoperability.” Finally, the reference architecture describes a typical set of infrastructure services that could form the foundation of a health and social care system at any level.

#### 4.2.1 Information Sources

Microsoft, *Health Information and Communication Technology (ICT) Resource Center*, <http://www.microsoft.com/industry/healthcare/technology/default.aspx>, © 2011.

Microsoft, *Connected Health Framework Architecture and Design Blueprint*, <http://www.microsoft.com/industry/healthcare/technology/Healthframework.aspx>, © 2011.

O’Leary, William D., and Dave Meyers, Microsoft U.S. Public Sector, *U.S. Public Sector Connected Health and Human Services*, White Paper, [http://download.microsoft.com/download/2/5/0/250e30bf-0d81-4141-bf8f-4e4ad222bfd/Microsoft\\_Connected\\_HHS\\_White\\_Paper.pdf](http://download.microsoft.com/download/2/5/0/250e30bf-0d81-4141-bf8f-4e4ad222bfd/Microsoft_Connected_HHS_White_Paper.pdf), June 2008.

#### 4.2.2 NHSIA Viewpoint Applicability

- Overview
- Business
- System
- Infrastructure

#### 4.2.3 Key Features and Lessons Learned

- The architecture and design blueprint is presented in a platform-agnostic way based on a service-oriented architecture (SOA). While it makes occasional reference to Microsoft products, the concepts presented could be implemented with any number of commercially available solutions. This is important because most existing health and human services systems use hardware and software platforms acquired from multiple vendors over a long period of time. Further, wholesale platform change is not an option for most organizations, hence interoperability and integration of these systems is vital to the improvement of patient and client care.

- The Business Framework defines “Ten Key Issues in Health and Social Care Systems.” These include such issues as how to manage a citizen’s health and social care record or how to manage business processes that span multiple systems, organizations, or domains. The framework then presents a conceptual model using an SOA approach that addresses the key issues.
- The Technical Framework addresses several common architecture challenges faced by Health and Human Services organizations. For example, a section on Identity and Access describes the challenges and possible approaches to supporting “a wide variety of usage scenarios, types of users, authentication methods, identity providers and technologies” (Part 3, pg. 25). Another architecture challenge described in detail is that of interoperability. The problem is decomposed into technical interoperability (the means of physically connecting participating nodes), syntactic interoperability (the rules and protocols that govern connections and messages), and semantic interoperability (the means for providing a common understanding of data and messages).
- Microsoft has also published a white paper called *U.S. Public Sector Connected Health and Human Services* (June, 2008). This document addresses issues similar to those addressed in the “Connected Health Framework Architecture and Design Blueprint,” but more specifically from the viewpoint of Health and Human Services organizations. The white paper takes the architecture concepts and applies them to a series of scenarios addressing issues such as provider management, case coordination, and the common client index. The paper concludes with a definition of the “Connected HHS Framework” and associated Microsoft solutions that could be used to implement the framework.
- Applicability to the Overview Viewpoint. The summary document within the “Connected Health Framework Architecture and Design Blueprint” provides guiding principles and aims and objectives applicable to the NHSIA architecture. In particular, the aims and objectives section sets out a series of high-level requirements related to application integration, and technical interoperability as well as a set of target capabilities that include identity and access control, collaboration, business process orchestration, and others.
- Applicability to the Business and System Viewpoints. A significant portion of the Business Framework is dedicated to describing what Microsoft calls “A Business Pattern for Health and Social Care.” This business pattern is decomposed into a series of “Business Components” such as the “Persons and Identities” component, which “stores, maintains and enables access to data regarding a Person, their Health enrollment (as Patient) and their Social Care enrollment (as Social Care Client)” (Part 2, pg 110). This component is then further decomposed into services, functions, and data entities to define the inner workings of the component.
- Applicability to the Infrastructure Viewpoint. The technical framework or reference architecture presents conceptual solutions to the architectural challenges to be addressed

by NHSIA. Because the document attempts to remain vendor-agnostic, the patterns presented will be useful in a variety of contexts.

Microsoft’s *Connected Health Framework Architecture and Design Blueprint* represents a wealth of information and guidance on how to approach some of the most significant technology challenges facing Health and Human Services organizations. In addition to the guidance presented, Microsoft has also prepared a methodology for how best to make use of the guidance. Finally, via its Health Information and Communication Technology (ICT) Resource Center, Microsoft provides a number of “solution accelerators” that can be used as a starting point for implementing systems using Microsoft products.

### 4.3 Patient Centered Medical Home (PCMH)

The patient centered medical home (PCMH) is a concept developed and advanced by the Patient Centered Primary Care Collaborative (PCPCC), a coalition of stakeholders across the health care spectrum. The PCPCC was created in late 2006 with the objective of reaching out to the American College of Physicians, the Academy of Family Physicians, and other primary care physician groups in order to (1) facilitate improvements in patient-physician relations, and (2) create a more effective and efficient model of health care delivery. The PCPCC is an ongoing activity whose membership includes a number of large national employers, most of the major primary care physician associations, health benefits companies, trade associations, profession/affinity groups, academic centers, and health care quality improvement associations.

Information technology can support the patient centered medical home concept and objectives, which are defined in Figure 4-1.

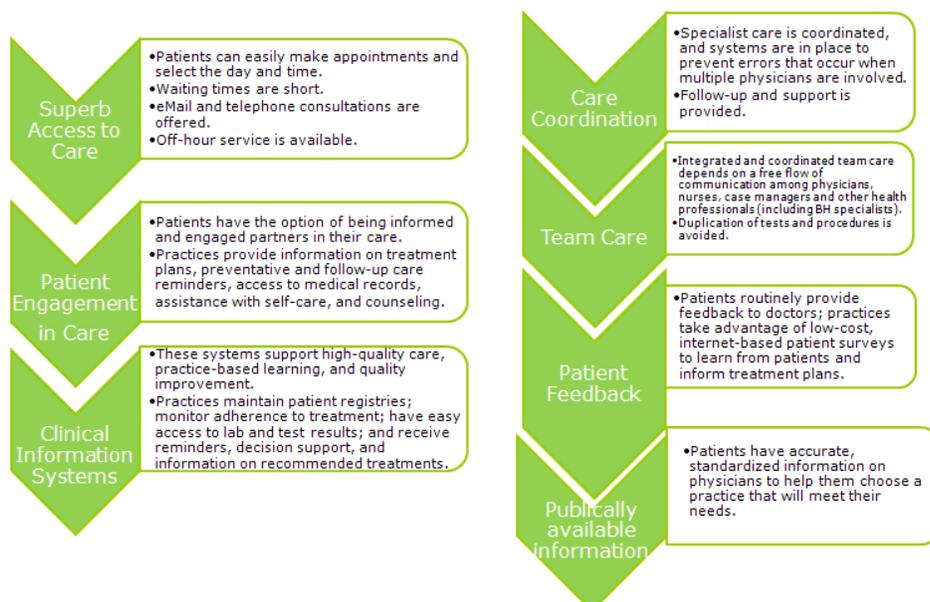


Figure 4–1 Defining the Medical Home

The PCPCC has a variety initiatives and projects structured under “centers.”

- [Center for Consumer Engagement](#): Engage the consumer in awareness activities through three ways: day-to-day operations, messaging and pilots. The center will continue the use of PCMH by focusing on how the concept and its components are communicated to the public and by partnering with large consumer groups to capitalize on their visibility and existing efforts.
- [Center for Employer Engagement](#): Create standards and buying criteria to serve as a guide and tool for large and small employers/purchasers in order to build the market demand for adoption of the medical home model.
- [Center for eHealth Information Adoption and Exchange](#): Evaluate use and application of information technology to support and enable the development and broad adoption of information technology in private practice and among community practitioners.
- [Center for Multi-Stakeholder Demonstration](#): Identify community-based sites to test and evaluate the PCMH concept; share information and best practices about pilots within a collaborative community; and serve as the connector to technical, quality improvement, and education resources to facilitate ongoing demonstrations.
- [Center to Promote Public Payer Implementation](#): Assist public payers as they implement and refine programs to embed the PCMH model by offering technical assistance, sharing best practices, and giving guidance on the development of successful funding models.

#### 4.3.1 Information Sources

Patient-Centered Primary Care Collaborative (PCPCC), *Patient-Centered Primary Care Collaborative*, <http://www.pcpcc.net>.

PCPCC Center for eHealth Information Adoption and Exchange (CeHIA), *Meaningful Connections: a resource guide for using health IT to support the patient centered medical home*, [http://www.pcpcc.net/files/CeHIA\\_Meaningful-Connections-Guide\\_2009\\_0.pdf](http://www.pcpcc.net/files/CeHIA_Meaningful-Connections-Guide_2009_0.pdf).

PCPCC, *Center for Consumer Engagement*, <http://www.pcpcc.net/center-consumer-engagement>.

PCPCC, *Center for Employer Engagement*, <https://www.pcpcc.net/center-employer-engagement>.

PCPCC, *Center for eHealth Information Adoption and Exchange*, <https://www.pcpcc.net/center-ehealth>.

PCPCC, *Center for Multi-Stakeholder Demonstration*, <http://www.pcpcc.net/center-multi-stakeholder-demonstrations>.

PCPCC, *Center to Promote Public Payer Implementation*, <http://www.pcpcc.net/center-promote-public-payer-implementation>.

#### 4.3.2 NHSIA Viewpoint Applicability

- Overview
- Business

### **4.3.3 Key Features and Lessons Learned**

To support the medical home concept, health information technology should provide:

- Ability to collect, store, manage, and exchange relevant personal health information
- Ability of providers, patients, and other members of a person’s health team to communicate among themselves in the process of care delivery
- Ability to collect, store, measure, and report on the processes and outcomes of individual and population performance and quality of care
- Ability of providers and their practices to engage in decision support for evidence-based treatments and tests
- Ability of consumers and patients to be informed and literate about their health and medical conditions and appropriately self-manage with monitoring and coaching from providers

## 5 Standards Activities

### 5.1 Global Justice XML Data Model (GJXDM)

In 2005, the Department of Justice (DOJ) and the Department of Homeland Security (DHS) created an eXtensible Markup Language (XML) data reference model for the exchange of information within the justice and public safety communities. There are three primary parts to the Global JXDM: the Data Dictionary (identifying content and meaning), the Data Model (defining structure and organization), and the Component Reuse Repository (a database). Although GJXDM is not being replaced by NIEM, it has been proved to work successfully with NIEM. As an example, HHS-Connect ACCESS in NYC has a successful program to enroll for school lunches. To satisfy the need for standards and consistency, the city decided to build on the success of the GJXDM in the criminal justice domain and adopt NIEM 2.0-conformant data exchanges for ACCESS NYC and the overall Health and Human Services domain.

#### 5.1.1 Information Sources

U.S. DOJ, Office of Justice Programs, *Information Technology Initiatives*, <http://it.ojp.gov/jxdm/>.

#### 5.1.2 NHSIA Viewpoint Applicability

- Information

#### 5.1.3 Key Features and Lessons Learned

Global Justice has evolved from the use of GJXDM to what is now NIEM. The experience and lessons learned have been folded into the NIEM product. Global Justice is looking beyond communication within its own organizational structure and outside to the other agencies that it interacts with in the public service domains.

### 5.2 Health Level 7 (HL7)

HL7, which began in 1988, provides definitions of electronic messages used to support nearly all aspects of hospital workflow. HL7 version 3.n is XML-based and provides more than 30 domain-specific standards for constructing clinical documents for electronic exchange. It addresses document content structure, and encoding this new messaging standard is expected to replace version 2.n. Current initiatives are related to EHRs, data standards, and public health informatics such as the Healthcare Information Technology Standards (HITSP). Clinical Document Architecture (CDA) is the most widely adopted. HL7 Version 3 uses Reference Information Model (RIM) as the basic building blocks, including attributes and data types which become tags in XML messages. HL7 uses Integrating the Healthcare Enterprise (IHE) Cross Enterprise Document Sharing (XDS) for document sharing by using the standardized document metadata to retrieve the document. These are specialized requirements for storage of radiology images (DICOM – Digital Imaging and Communications in Medicine) and other images such as electrocardiograms (EKGs), summary reports and structured laboratory reports.

### 5.2.1 Information Sources

Benson, Tim, *Principles of Health Interoperability HL7 and SNOMED*, Springer, ISBN 978-1-84882-802-5, 2010.

*Health Level Seven (HL7) International*, <http://www.hl7.org>, © 2007-2011.

### 5.2.2 NHSIA Viewpoint Applicability

- Information

### 5.2.3 Key Features and Lessons Learned

Developers of HL7 have learned that information structure and terminology cannot be addressed separately. HL7 standards recognize this and are moving towards HL7 Version 3 to take advantage of XML message exchange and to formalize the lessons learned over the decades of health care message exchanges.

## 5.3 National Information Exchange Model (NIEM)

NIEM, the National Information Exchange Model, is a partnership of the U.S. Department of Justice, the U.S. Department of Homeland Security, and the U.S. Department of Health and Human Services. It is designed to develop, disseminate, and support enterprise-wide information exchange standards and processes that can enable jurisdictions to effectively share critical information in emergency situations, as well as to support the day-to-day operations of agencies throughout the nation.

NIEM enables information sharing, focusing on information exchanged among organizations as part of their current or intended business practices. The NIEM exchange development methodology results in a common semantic understanding among participating organizations and in data formatted in a semantically consistent manner. NIEM will standardize content (actual data exchange standards), provide tools, and manage processes.

NIEM builds on the demonstrated success of the GJXDM. Stakeholders from relevant communities work together to define critical exchanges, leveraging the successful work of the GJXDM.

### 5.3.1 Information Sources

NIEM, *National Information Exchange Model*, <http://www.niem.gov>, 4 May 2011.

NIEM, *National Information Exchange Model Tools*, <http://tools.niem.gov/niemtools/home.iepd>.

### 5.3.2 NHSIA Viewpoint Applicability

- Information

### 5.3.3 Key Features and Lessons Learned

Under NIEM, technology standards for interoperability are emerging. NIEM is gaining momentum in the industry as tools, training, experience, and usage increase. Each new

application, whether grant-sponsored or industry-based, is providing experience and leverages prior use. The IEPD that support information sharing continue to expand and promote the use in an evolving desire for interoperability and streamline of data exchanges.

## 5.4 Systematized Nomenclature of Medicine (SNOMED)

SNOMED is clinical terminology maintained and distributed by the IHTSDO (International Health Terminology Standards Development Organisation). SNOMED originated in 1955 with the College of American Pathologists to develop a nomenclature for anatomic pathology and was later expanded to a model centering around illness, starting with normal topography and function. The illness has some cause (etiology). Diseases (ICD – International Classification of Diseases), occupations, and organisms were added between 1975 and 1993. SNOMED is the most comprehensive, multilingual, clinical health care terminology with a concept-based approach applied to it. The use of coding and standard terminology has benefits. SNOMED Clinical Terms (CT) benefits are realized when it is built into software usage for data quality. SNOMED CT is not fully defined and is in a state of constant evolution. In addition, SNOMED is natural-language-based; every code ever released is present in the current version so that migration should cause no loss of historical information. SNOMED CT expressions are usually presented using a notation known as compositional grammar.

### 5.4.1 Information Sources

Hoyt, Robert E., *Medical Informatics Practical Guide for the Health Care Professional*, copyright ISBN 978-0-557-13323-9, 2009.

Benson, Tim, *Principles of Health Interoperability HL7 and SNOMED*, Springer, ISBN 978-1-84882-802-5, 2010.

International Health Terminology Standards Development Organisation (IHTSDO), *Welcome to IHTSDO*, <http://www.ihtsdo.org/>.

National Institutes of Health, U.S. National Library of Medicine (NLM), *Unified Medical Language System® (UMLS®): SNOMED Clinical Terms®*, [http://www.nlm.nih.gov/research/umls/Snomed/snomed\\_main.html](http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html), 28 March 2011.

### 5.4.2 NHSIA Viewpoint Applicability

- Information

### 5.4.3 Key Features and Lessons Learned

SNOMED is based on a natural language concept with relationships at the core of the reference terminology. It has a set of rules that govern the ways in which concepts are permitted to be modeled using relationships to other concepts. Developers of HL7 and SNOMED have learned that information structure and terminology cannot be addressed separately.

## 6 Organizations

This section contains brief overviews of organizations that have significant interest and roles in activities relevant to NHSIA. These include:

- Administration for Children and families (ACF)
- American Public Human Services Association (APHSA)
- American Public Human Services Association – IT Solutions Management (APHSA/ISM)
- Council for Affordable Quality Healthcare – Committee on Operating Rules for Information Exchange (CORE®)
- U.S. CIO and the CIO Council
- Public Sector Human Services IT Advisory Group (HSITAG)
- Health Services Advisory Group (HSAG)
- Health Information Technology Standards Panel (HITSP)
- National Association of County and City Health Officials (NACCHO)
- National Association for Public Health Statistics and Information Systems (NAPHSIS)
- National Association of State Chief Information Officers (NASCIO)
- National Conference of State Legislatures (NCSL)
- National Governors Association (NGA)
- Office of the National Coordinator for Health Information Technology (ONC)
- Health and Human Services IT Advisory Groups (for example, TechAmerica)

This list is far from comprehensive. There are dozens of public and private organizations relevant to some aspect of human services. One good list of links to many of these organizations can be found at the [APHSA/ISM site](#).

Almost all of the information below has been copied directly from the Web sites listed at the end of each subsection.

### 6.1 Administration for Children and Families (ACF)

The Administration for Children and Families (ACF) is a federal agency funding state, territory, local, and tribal organizations to provide family assistance (welfare), child support, child care, Head Start, child welfare, and other programs relating to children and families. Actual services are provided by state, county, city, and tribal governments, and public and private local agencies. ACF assists these organizations through funding, policy direction, and information services. ACF is the current sponsor for the NHSIA initiatives. Also, ACF is the lead for extending National Information Exchange Model (NIEM) to address the human services domain.

The NHSIA effort will initially focus on the following ACF programs: Temporary Assistance to Families, Adoption & Foster Care, Child Care, Child Support, and Child Abuse & Neglect. Initiatives for these programs include:

- Statewide Automated Child Welfare Information Systems: Automated case management tool that meets the needs of all staff (including social workers and their supervisors,

whether employed by the state, county, or contracted private providers) involved in foster care and adoptions assistance case management.

- National Foster Care and Adoption Directory: AdoptUsKids: Provides information about adoption and foster care resources by state. AdoptUsKids provides a photo listing of children awaiting adoption.
- ChildHelpUSA: Benefits span community resource referrals, after school care, before school care, crisis intervention, immunizations, counseling, health education, adult education, clothes/food/transportation/rent, and family camps.
- Office of Child Support and Enforcement: Federal/state/tribal/local partnership to help families by promoting family self-sufficiency and child well-being. Includes:
  - Federal Parent Locater Services: Federal Case Registry, Federal Offset Program, Passport Denial Program, Insurance Match Initiative, Multistate Financial Institution Data Match, National Directory of New Hires, Query Interstate Cases for Kids
  - CSFNet 2000: System which receives, validates, and transmits standardized child support case transactions among state Child Support Enforcement (CSE) systems.
  - Employer Services
- Family and Youth Services Bureau: Includes Positive Youth Development - National Runaway Switchboard; National Domestic Violence Hotline; National Online Resource Center on Violence Against Women; Family Violence & Prevention Services; Mentoring Children of Prisoners; Runaway and Homeless Youth Programs; InsureKidsNow.gov
- National Clearinghouse on Youth And Families: Provides information and funding opportunities: Positive Youth Development (PYD); teen pregnancy prevention and abstinence education; relationship violence and sexual exploitation; mentoring; children of prisoners; pregnant and parenting youth; runaway and homeless youth
- Find Youth Info: provides information for youth services, pointer to state resources
- Temporary Assistance for Needy Families (TANF): Block grant program to help move recipients into work and turn welfare into a program of temporary assistance. The Office of Family Assistance administers the TANF program. TANF provide grants to states with flexibility to develop and implement their own welfare programs.

The *ACF FY2012 Evaluation Performance Appendix Improvement* documents outcomes reported for ACF programs. These outcomes will be considered in the NHSIA performance evaluation.

ACF guidance for the NHSIA effort is reflected in the Overview Viewpoint. Outcomes specified for ACF programs will be incorporated into the NHSIA performance evaluation model, part of the Capability Viewpoint.

### 6.1.1 Information Sources

ACF, *ACF FY2012 Evaluation Performance Appendix*. This document is housed on the APL NHSIA DMZ site, References library, Performance Measurement folder. Access to this site and this document requires an APL account.

## 6.2 American Public Human Services Association (APHSA)

APHSA pursues excellence in health and human services by supporting state and local agencies, informing policymakers, and working with its partners to drive innovative, integrated, and efficient solutions in policy and practice.

APHSA is a bipartisan, nonprofit organization representing appointed state health and human service agency commissioners. APHSA was founded in 1930 as the American Public Welfare Association and changed its name to APHSA in 1997. APHSA is the only association of the nation's top government human service executives from all 50 states, the District of Columbia, and the territories—and their key state program managers, plus hundreds of county-level directors of human services throughout the nation—for the exchange of knowledge, data, best practices, policy review and development, networking, and advocacy. APHSA houses nine affiliate organizations, whose members are the administrators which operate human service agency divisions or departments in the states and for the most part report to a state commissioner. The affiliates cover a variety of program specializations such as child welfare and income assistance programs as well as support functions such as program evaluation and staff training.

APHSA is committed to carrying out its work through strong connections and partnerships among the many areas of government and the broader community that affect the well-being of our citizens.

APHSA's ten affiliate organizations are unincorporated entities, consisting of individuals engaged in or concerned with policy and practice associated with major fields of public human service endeavors. This may include specific assistance and service programs, e.g., the Supplemental Nutrition Assistance Program (SNAP) (formerly food stamps), child welfare, or general support functions for human services, e.g., information systems, training and development. The affiliate organizations are:

- American Association of Public Welfare Attorneys (AAPWA)
- American Association of SNAP Directors (AASD)
- Association of Administrators of the Interstate Compact on Adoption and Medical Assistance (AAICAMA)
- Association of Administrators of the Interstate Compact on the Placement of Children (AAICPC)
- IT Solutions Management for Human Services (ISM)
- National Association for Program Information and Performance Measurement (NAPIPM)
- National Association of Public Child Welfare Administrators (NAPCWA)
- National Association of State Child Care Administrators (NASCCA)
- Center for Workers with Disabilities (CWD)
- National Association of State TANF Administrators (NASTA)
- National Staff Development and Training Association (NSDTA)

### 6.2.1 Information Sources

APHSA, *American Public Human Services Association*, [http://www.aphsa.org/Home/home\\_news.asp](http://www.aphsa.org/Home/home_news.asp), © 2010.

APHSA, IT Solutions Management (ISM) for Human Services, *Valuable Links*, <http://www.aphsa-ism.org/Links/links.asp>, © 2007.

## 6.3 American Public Human Services Association – IT Solutions Management (APHSA/ISM)

ISM is an association of state, local and federal government information systems professionals working in the health and human services areas. The goal of the organization is to promote the development and operation of effective automated systems in health and human services.

Among other activities, ISM holds an annual conference. “For over 40 years, the ISM Conference has served as the nation’s best forum for addressing how technology can be utilized to streamline business processes and improve automated support of Health and Human Services programs. ISM brings together federal, state, local and private sector thought leaders to discuss lessons learned, emerging issues and key trends. ISM focuses on the major assistance programs and systems including child welfare, TANF, SNAP, child support, child care, and Medicaid. The conference presents important updates on IT trends and innovations. Speakers represent state and county governments, industry experts, federal program officials, and Congressional staff. Working collaboratively with the private sector, the ISM Board strives to develop a non-sales, information oriented agenda that addresses topical issues and challenges facing our membership.”

Who attends:

- CIOs, CTOs, CEOs and their deputies
- IT project directors, managers, and staff
- Program and policy directors, and staff
- Health and human services IT vendors
- Nonprofit community health and human services management and staff
- Federal officials

### 6.3.1 Information Sources

APHSA ISM, *Valuable Links*, <http://www.aphsa-ism.org/Links/links.asp>, © 2007.

## 6.4 Certification Commission for Healthcare Information Technology (CCHIT)

The Certification Commission for Health Information Technology (CCHIT) is an independent, 501(c)3 nonprofit organization with the public mission of accelerating the adoption of robust, interoperable health information technology. It was created by Healthcare Information and Management Systems Society (HIMSS), American Health Information Management Association (AHIMA), and The National Alliance for Health Information Technology (Alliance), and now

includes a host of health care and academic organizations. It has three goals: to reduce risk of health information technology (HIT) investment, to insure interoperability of HIT, and to enhance availability of HIT incentives and accelerate its adoption. The commission offers three different levels of EHR certification, basing certification levels on a series of health care measures and objectives.

As of March 2011, the current measures and objectives for certification were considered too aggressive to meet 2014 deadlines. All nine measures and objectives were enhancements to the Stage One objectives and measures, which included:

- Syndromic Surveillance
- Drug Formulary Checks
- Medication Reconciliation
- Patient Access to Health Information within four days
- Submission of Immunization Data
- Capability to Exchange Key Clinical information
- Clinical Decision Support
- Submission of Reportable Lab Data
- Drug Allergy/etc. Checks

Most cited infrastructure and information exchanges as the major reasons impacting investment costs.

#### **6.4.1 Information Sources**

CCHIT, *Certification Commission for Health Information Technology*, <http://www.cchit.org/>.

### **6.5 Council for Affordable Quality Healthcare (CAQH) – Committee on Operating Rules for Information Exchange (CORE®)**

CAQH is a nonprofit alliance of health plans, covering more than 100 million Americans, and trade associations. It serves as a catalyst for health care industry collaboration on initiatives that simplify and streamline health care administration for health plans and providers, resulting in a better care experience for patients and caregivers. CAQH solutions help: promote quality interactions among plans, providers, and other stakeholders; reduce costs and frustrations associated with health care administration; facilitate administrative health care information exchange; and encourage administrative and clinical data integration.

#### **Committee on Operating Rules for Information Exchange (CORE)**

CAQH launched the Committee on Operating Rules for Information Exchange (CORE) with the vision of giving providers, before or at the time of service, access to eligibility and benefits information using the electronic system of their choice for any patient or health plan.

CORE is more than 120 industry stakeholders – health plans, providers, vendors, CMS and other government agencies, associations, regional entities, standard-setting organizations, and other health care entities. CORE participants maintain eligibility and benefits data for more than 150 million commercially-insured lives plus Medicare and Medicaid beneficiaries. Working in collaboration they are building consensus on a set of operating rules that will:

1. Enhance interoperability between providers and payers
2. Streamline eligibility, benefits, and claim data transactions
3. Reduce the amount of time and resources providers spend on administrative functions – time better spent with patients.

CORE is tracking and has published metrics regarding rule impact to help quantify participant return on investment.

Operating rules build on existing standards to make electronic transactions more predictable and consistent, regardless of the technology. Rights and responsibilities of all parties, security, transmission standards and formats, response-time standards, liabilities, exception processing, error resolution, and more must be clearly defined in order to facilitate successful interoperability. Beyond reducing cost and administrative hassles, operating rules foster trust among all participants.

### 6.5.1 Information Sources

Council for Affordable Quality Healthcare (CAQH), *Universal Provider Datasource*, <https://upd.caqh.org/oas/Default.aspx>.

CAQH, *CORE Overview*, [http://www.caqh.org/CORE\\_overview.php](http://www.caqh.org/CORE_overview.php), © 2011.

## 6.6 Health Information Technology Standards Panel (HITSP)

Established in 2005 by HHS ONC, HITSP was to harmonize system architecture-neutral standards built around Use Cases. The panel worked to unify existing health care IT standards from 15 different standards development organizations, all of which were promoting interoperability. HITSP, in cooperation with the American National Standards Institute (ANSI), HIMSS, Advanced Technology Institute (ATI), and Booz Allen Hamilton, recommends standards to the Secretary of HHS, who accepts and officially recognizes them after a one-year period of review. **The HITSP contract concluded with HHS on 30 April 2010.** The standards developed include (among others):

- EHR Lab Results
- Biosurveillance
- Consumer Empowerment
- Emergency Responder EHR
- Quality
- Medication Management
- Personalized Healthcare
- Consultations and Transfers of Care
- Immunizations and Response Management
- Public Health Case Reporting
- Remote Monitoring
- Maternal and Child Health
- Newborn Screening
- Medical Home

- Clinical Research

Standards were developed to harmonize and support wide spread interoperability among health care software applications in a Nationwide Health Information network for the United States. Since April 2010 there has been no maintenance or work to improve or add to these Health Information Technology Standards.

### 6.6.1 Information Sources

HITSP, *Healthcare Information Technology Standards Panel*, <http://hitsp.org>.

## 6.7 Health Services Advisory Group (HSAG)

Health Services Advisory Group (HSAG), Inc., has functioned for over 30 years as a team of highly skilled professionals working to form one of the most successful health care quality improvement and quality review organizations in the nation. It is the mission of this team to be a positive force in health care by providing quality expertise to those who deliver care and helpful information to those who receive health care services.

Since its beginning in 1979 as a Medicare peer review organization mandated by federal law and acting in only a portion of Arizona, it has burgeoned to its present status and now serves over 20 percent of the Medicare population nationwide as a quality improvement organization (QIO). HSAG has also become involved with Medicaid programs in more than a dozen states, where it works to assure the quality, access, timeliness, and appropriateness of care for approximately 45 percent of the nation's Medicaid recipients.

### 6.7.1 Information Sources

Health Services Advisory Group (HSAG), *About Us*, <http://www.hsag.com/about.aspx>, © 2011.

## 6.8 Identity, Credential and Access Management (ICAM)

In September 2008, the Federal CIO Council established the Information Security & Identity Management Committee. The ISIMC, as it is commonly called, was charged with overseeing the government-wide activities related to cybersecurity and identity management. In turn, the ISIMC established four subcommittees. The Identity, Credential and Access Management Subcommittee, often referred to as ICAM, is co-chaired by GSA and the Department of Defense (DoD) and is tasked with aligning the identity management activities of government, while the remaining three deal with the cybersecurity taskings. There are six working groups associated with the ICAM.

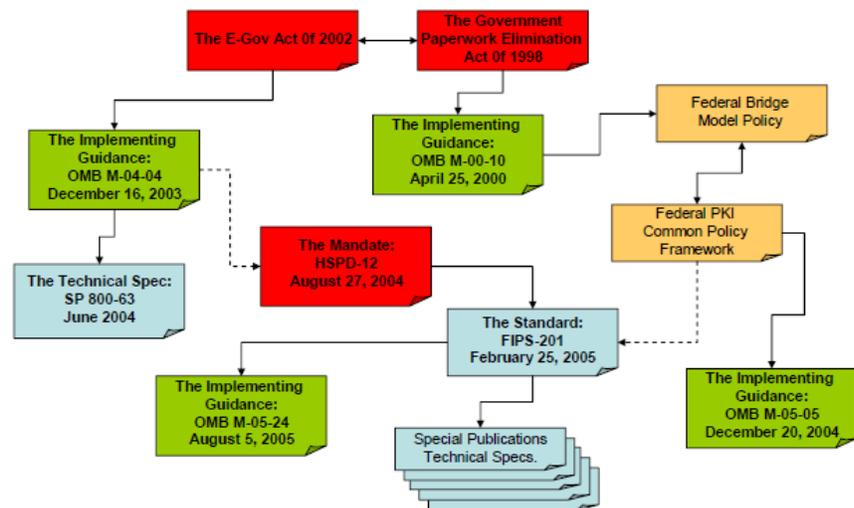
- Federal Public Key Infrastructure (PKI) Policy Authority – administer the policies of Federal PKI
- Roadmap Development Team – review team for the development and content of the ICAM Roadmap and Implementation Guidance
- Architecture Working Group – develop the new ICAM technical architecture

- Citizen Outreach Focus Group – make recommendations concerning solution sets for government-to-citizen interaction
- Federation Interoperability Working Group – determine business drivers and terms of engagement for inter-organizational trust
- Logical Access Working Group – developing guidance/best practices to assist agencies in implementing log on/authentication capabilities using Personal Identity Verification (PIV) cards

ICAM Mission: Fostering effective government-wide identity and access management, enabling trust in online transactions through common identity and access management policies and approaches, aligning federal agencies around common identity and access management practices, reducing the identity and access management burden for individual agencies by fostering common interoperable approaches, ensuring alignment across all identity and access management activities that cross individual agency boundaries, and collaborating with external identity management activities through inter-federation to enhance interoperability.

The federal ICAM segment architecture provides federal agencies with a consistent approach for managing the vetting and credentialing of individuals requiring access to federal information systems and facilities. The ICAM segment architecture will serve as an important tool for providing awareness to external mission partners and drive the development and implementation of interoperable solutions.

Figure 6–1, Enabling Policy and Guidance, represents a sampling of the policies, mandates, and standards work that has advanced the cause of good identity management for electronic transactions over the past ten years. M-04-04 "E-Authentication Guidance for Federal Agencies" provided the basis for trusted transactions across all four sectors of government while Homeland Security Presidential Directive



**Figure 6–1. Enabling Policy and Guidance**

(HSPD)-12 and Federal Information Processing Standards (FIPS) 201 provided a standard or common identity standard for the federal government. OMB Guidance M-04-04 establishes four authentication assurance levels. NIST Special Publication 800-63 "Electronic Authentication Guideline" supplements OMB Guidance M-04-04.

### 6.8.1 Information Sources

GSA, *Identity, Credential, and Access Management (ICAM)*, <http://www.idmanagement.gov/drilldown.cfm?action=icam>, 26 August 2009.

OMB, *E-Authentication Guidance for Federal Agencies*, M-04-04, <http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy04/m04-04.pdf>, 16 December 2003.

DHS, *Homeland Security Presidential Directive 12 (HSPD-12): Policy for a Common Identification Standard for Federal Employees and Contractors*, HSPD-12, [http://www.dhs.gov/xabout/laws/gc\\_1217616624097.shtm](http://www.dhs.gov/xabout/laws/gc_1217616624097.shtm), 27 August, 2004.

National Institute of Standards and Technology (NIST), *Personal Identity Verification (PIV) of Federal Employees and Contractors*, FIPS 201, <http://csrc.nist.gov/publications/fips/fips201-1/FIPS-201-1-chng1.pdf>, March 2006.

NIST, *Electronic Authentication Guideline*, NIST Special Publication 800-63, [http://csrc.nist.gov/publications/nistpubs/800-63/SP800-63V1\\_0\\_2.pdf](http://csrc.nist.gov/publications/nistpubs/800-63/SP800-63V1_0_2.pdf), April 2006.

## 6.9 National Association of County and City Health Officials (NACCHO)

The National Association of County and City Health Officials (NACCHO) is the national organization representing local health departments. NACCHO supports efforts that protect and improve the health of all people and all communities by promoting national policy, developing resources and programs, seeking health equity, and supporting effective local public health practice and systems.

NACCHO is governed by a 27-member Board of Directors, comprising health officials from around the country elected by their peers, and including ex officio members representing the National Association of Counties, of which NACCHO is an affiliate, and the U.S. Conference of Mayors.

### Program Areas

NACCHO has activities in a number of areas, including:

- Community health topics such as: chronic disease prevention, tobacco control, health and disability, infectious disease prevention and control, immunization, injury prevention, maternal and child health, adolescent health, and health equity.
- Environmental health topics such as: the public health effects of climate change, food safety, environmental health tracking and assessment, and environmental justice.
- Public health infrastructure and systems topics such as: accreditation and quality improvement, community health status indicators, public health informatics, performance standards, public health law, and regionalization of public health services.
- Public health preparedness topics such as: local readiness for pandemic influenza, Medical Reserve Corps, Project Public Health Ready, and Strategic National Stockpile.

### 6.9.1 Information Sources

NACCHO, *National Association of County & City Health Officials*, <http://www.naccho.org/>, © 2011.

## 6.10 National Association for Public Health Statistics and Information Systems (NAPHSIS)

The National Association for Public Health Statistics and Information Systems (NAPHSIS) is a national association of state vital records and public health statistics offices, which is based in the Washington, DC, area. The association was formed in 1933 to provide a forum for the study, discussion, and solution of problems related to these programs in the respective members' health departments. Two examples of NAPHSIS programs relevant to NHSIA are discussed below.

### Cooperative Agreement for State Vital Statistics Improvement

Expanding on the initiatives of the previous Re-engineering Cooperative Agreement, NAPHSIS and the National Center for Health Statistics (NCHS) began a five-year cooperative agreement in September 2007 called the State Vital Statistics Improvement (VSI) Program. The focus of the new initiative is to provide targeted technical assistance to jurisdictions with specific challenges, and to promote the implementation of NAPHSIS and NCHS standards and best practices throughout the National Vital Statistics System (NVSS).

#### Technical Assistance

Although great progress has been made in the adoption of electronic birth and death registration systems, not all jurisdictions can produce a standardized national statistical data set based on the 2003 revised certificates of birth, death, and fetal death. Therefore, NAPHSIS will continue to provide technical assistance to the jurisdictions for re-engineering vital records systems and implementing the 2003 revised certificates. NAPHSIS will also collaborate with NCHS to identify and work with jurisdictions challenged to meet timeliness and data quality requirements of the Vital Statistics Cooperative Program. The services of a specialized consultant will be provided to conduct an in-depth assessment of issues and make detailed recommendations for business process improvement in registration, customer service, and statistics operations.

#### Best Practices

Another important mission of the VSI Cooperative Agreement is the development and promotion of standards and best practices in vital records security and fraud prevention. Key concerns involve the security of vital records data, information systems, vital records offices, and paper used for issuance of certified copies. NAPHSIS committees are working to develop security and fraud prevention guidelines for dissemination nationally and to promote the assignment of a security coordinator in each jurisdiction to carry out the recommended practices. In addition, NAPHSIS has developed a set of performance metrics to be applied to each jurisdiction's data quality, timeliness, and completeness. An annual "report card" of performance measures will be provided to each jurisdiction, and may serve as the basis for delivering enhanced technical and business process support. NAPHSIS also will continue to promote an awareness of Public Health Information Network (PHIN) standards as they apply to vendor systems and to the exchange of vital records data between jurisdictions and with the NCHS.

### State and Territorial Exchange of Vital Events (STEVE)

NAPHSIS has developed a new, Web-based system for exchanging and reporting vital events to other jurisdictions using standard Inter-jurisdictional Exchange (IJE) file layouts. Developed around the Centers for Disease Control's (CDC's) PHIN Messaging System (PHINMS) messaging protocol, the STEVE System was completed and installed in five pilot states in early 2009: Kansas, Nebraska, Arkansas, North Dakota, and South Dakota. Additional jurisdictions are joining the STEVE trading partner community each month, and all jurisdictions are expected to be on STEVE by early 2011. STEVE has several important functions that are activated when a file is loaded into the system:

1. STEVE automates the point-to-point exchange of inter-jurisdictional natality, mortality, fetal death, and induced termination of pregnancy (ITOP) data in a standardized file format configured to meet the sending jurisdiction's data use and exchange rules;
2. it sends a short-form death notice to the jurisdiction of birth;
3. STEVE can send specially configured file layouts to other approved state programs, such as newborn hearing screening, immunization, voter registration, and National Violent Death Reporting System (NVDRS) via a system of "mailboxes" and data export tools created for these programs;
4. STEVE allows a jurisdiction to automatically send its own data to the program mailboxes it has set up, so generating multiple data extracts is no longer required;
5. it automatically strips off and sends reportable data to NCHS according to the Vital Statistics Cooperative Program (VSCP) contract requirements;
6. it creates a customized data file to be used for approved research; and
7. STEVE allows users to transmit a single file, specific data set, or imaged document to a designated jurisdiction (must be an active trading partner) on request.

It is anticipated that once the trading partner network is fully implemented, STEVE will be expanded to support additional federal partners and possibly other trading partner networks.

### **Electronic Verification of Vital Events (EVVE)**

Many federal and state agencies rely on birth certificates for proof of age, proof of citizenship, identification for employment purposes, to issue benefits or other documents (e.g. driver's licenses, Social Security cards, and passports), and to assist in determining eligibility for public programs or benefits.

NAPHSIS has developed and implemented an electronic system that allows immediate confirmation of the information on a birth certificate; the certificate can be presented by an applicant to a government office anywhere in the nation regardless of the place or date of issuance. Via a single interface, authorized federal and state agency users can generate an electronic query to any participating vital records jurisdiction throughout the country to verify the contents of a paper birth certificate or to request an electronic certification (in lieu of the paper birth certificate). An electronic response from the participating vital records jurisdiction either verifies or denies the match with official state or jurisdiction records. It will also flag positive responses if the person matched is now deceased. As designed, queries can be generated and matched against 250 million birth records in jurisdiction vital record databases nationwide.

The EVVE system is also capable of supporting the electronic verification and/or electronic certification of death records.

### **6.10.1 Information Sources**

NAPHSIS, *National Association for Public Health Statistics and Information Systems Website*, <http://www.naphsis.org/index.asp?sid=1>, © 2007.

NAPHSIS, *Electronic Verification of Vital Events (EVVE)*, <http://www.naphsis.org/index.asp?bid=979>, © 2007.

## **6.11 National Association of State Chief Information Officers (NASCIO)**

NASCIO's mission is to foster government excellence through quality business practices, information management, and technology policy.

Founded in 1969, NASCIO represents state chief information officers and information technology executives and managers from the states, territories, and the District of Columbia. The primary state members are senior officials from state government who have executive-level and statewide responsibility for information technology leadership. State officials who are involved in agency-level information technology management may participate as associate members. Representatives from federal, municipal, international government, and nonprofit organizations may also participate as members. Private-sector firms join as corporate members and participate in the Corporate Leadership Council.

NASCIO provides state CIOs and state members with products and services designed to support the challenging role of the state CIO, stimulate the exchange of information, and promote the adoption of IT best practices and innovations. From national conferences, peer networking, research and publications, briefings, and government affairs, NASCIO is the premier network and resource for state CIOs.

Each program year, NASCIO develops and supports issue committees which enable members to examine key issues in depth and deliver research briefs and other products. NASCIO also creates ad hoc working groups with clearly prescribed charters to focus on high-priority and time-sensitive issues for the states. Some of the current NASCIO efforts relevant to NHSIA are briefly highlighted below.

### **NASCIO Enterprise Architecture Program**

The NASCIO Enterprise Architecture Program was developed to support state and local governments. Government must continually reinvent itself to remain relevant by effectively and efficiently providing services to the citizens of this country. The path to this continual transformation must embrace leadership, management, coordination, communication, and technology throughout government. Enterprise architecture is a technical discipline to aid in planning for this transformation considering all of these factors.

## **NASCIO Security and Privacy Committee**

This committee's charge is to support NASCIO's strategic objective of protecting the information technology infrastructure of the 21<sup>st</sup> century. To preserve government's ability to serve citizens, state CIOs must help protect state IT systems and services, while preserving the privacy of personal and sensitive information within those systems. State governments meet this obligation in the context of the larger IT network that interconnects state, local, and federal systems and allows direct citizen interaction with government programs and services through the Internet. A major focus is integration and coordination of federal, state, local government, and private sector efforts that further national cyber security agenda.

The committee focuses on the intersection between security and privacy to help state CIOs formulate high-level security and data protection policies and technical controls to secure the states' information systems and protect the personal and sensitive information within them. The committee monitors new security and privacy threats created by emerging technologies, as well as federal privacy and security legislation for collateral impact on the states. The committee fulfills NASCIO's goals of strengthening state CIOs awareness of important IT issues and promoting the sharing of best practices, experiences, and expertise.

Potential topics and/or deliverables to be addressed in the program year include but are not limited to:

- Cloud Computing – security implications of cloud computing
- National Incident Response Plan
- Consensus audit guidelines
- Identity and access management
- Web 2.0 / Social media security
- Virtualization – protecting virtualized applications and data
- Wireless network security
- Promote general IT security awareness and a better understanding of security requirements among the current IT workforce, state employees, and contractors
- Other topics as needed
- All-state conference calls, webinars, or briefings by IT security experts

## **NASCIO Digital Identity Committee**

Federal, state, local, and tribal governments currently issue numerous credentials to constituents for access to facilities or services based on a variety of endorsements. Many of the endorsements provide citizens with access to federally funded programs, but the issuance of credentials remains program-specific and has become a redundant process for many agencies and departments. Issuing digital identities that have multi-platform credentialing options will result in improved efficiency and convenience for both users and issuers. To the extent such credential is honored by commercial entities, it will also improve efficiency and security of commercial transactions, including on-line transactions.

In an effort to lower the amount of data breaches and curtail identity theft, effective policies must enable trust across organizational, operational, physical, and network boundaries. The resulting framework will promote data security, privacy, and the high assurance authentication needed to secure information sharing and transparency in government. Guidance on the approach to identity

management will encourage a shift away from stove-piped applications to an enterprise view of identity that enables use without creating redundant sources that are difficult to protect and keep current.

The State Digital Identity Work Group will provide a consensus-based forum that enables state Chief Information Officers (CIOs), Chief Information Security Officers (CISOs), enterprise architects, and line-of-business stakeholders to collaborate on developing recommendations on federated identity management initiatives. This working group intends to provide a framework for the key guidelines for program management and collaboration. The charter seeks to develop solutions for a sustainable and supportable model for use in identity, credentialing, and access efforts.

### **Goals and Objectives:**

- Promote the use of an enterprise architecture governance structure
- Distinguish appropriate capabilities for identifying, authenticating, and authorizing individuals' appropriate access to resources
- Enable trust and interoperability
- Improve security and privacy
- Facilitate e-government use by facilitating secure access to services and transactions
- Increase efficiencies and reduce costs
- Facilitate efficiency and security of commercial transactions
- Seek to find ways to expand convenience of services while improving security and privacy
- Investigate the short-term and long-term sustainability of a state digital identity program

### **NASCIO Health Care Working Group**

The Health Care Working Group will seek to examine the ways in which health IT initiatives, particularly state-driven health IT efforts, are developing and evolving. The renewed focus on technology in health care presents opportunities for state CIOs to engage and support key state and national program objectives. The group will initially focus on tracking and analyzing current state health IT efforts, health care reforms, and the CIOs' involvement within them with an objective of preparing state CIOs to support changes to existing technology and prepare for new initiatives in health care technology.

#### **6.11.1 Information Sources**

NASCIO, *About NASCIO | Mission*, <http://www.nascio.org/aboutNASCIO/index.cfm>, © 2011.

NASCIO, *Resources | Enterprise Architecture Program Toolkit & Resources*, <http://www.nascio.org/resources/EResources.cfm>, © 2011.

NASCIO, *About NASCIO | State Profiles*, <http://www.nascio.org/aboutNASCIO/profiles/>, © 2011.

NASCIO, *Committees | Security & Privacy Committee*, <http://www.nascio.org/committees/security/>, © 2011.

NASCIO, *Committees | State Digital Identity Working Group*, <http://www.nascio.org/committees/digitalID/>, © 2011.

## 6.12 National Conference of State Legislatures (NCSL)

The National Conference of State Legislatures is a bipartisan organization that serves the legislators and staffs of the nation's states and territories. NCSL provides research, technical assistance, and opportunities for policymakers to exchange ideas on the most pressing state issues. NCSL is an effective and respected advocate for the interests of state governments before Congress and federal agencies. The leadership of NCSL is composed of legislators and staff from across the country. The NCSL Executive Committee provides overall direction on operations of the Conference.

NCSL provides research on many issues of interest to state legislatures including health and human services.

### 6.12.1 Information Sources

NCSL, *National Conference of State Legislatures*,  
<http://www.nascio.org/aboutNASCIO/index.cfm>, © 2011.

NCSL, *Human Services*,  
<http://www.ncsl.org/IssuesResearch/HumanServices/tabid/123/Default.aspx>, © 2011.

NCSL, *Health*, <http://www.ncsl.org/IssuesResearch/Health/tabid/160/Default.aspx>, © 2011.

## 6.13 National Governors Association (NGA)

The National Governors Association (NGA) — the bipartisan organization of the nation's governors — promotes visionary state leadership, shares best practices, and speaks with a collective voice on national policy.

Founded in 1908, the National Governors Association is the collective voice of the nation's governors and one of Washington, D.C.'s most respected public policy organizations. Its members are the governors of the 50 states, three territories, and two commonwealths. NGA provides governors and their senior staff members with services that range from representing states on Capitol Hill and before the Administration on key federal issues to developing and implementing innovative solutions to public policy challenges through the NGA Center for Best Practices. NGA also provides management and technical assistance to both new and incumbent governors.

The NGA Center for Best Practices' Economic, Human Services & Workforce (EHSW) Division focuses on best practices, policy options, and service delivery improvements across a range of current and emerging issues, including economic development and innovation, workforce development, employment services, research and development policies, and human services for children, youth, low-income families, and people with disabilities.

### 6.13.1 Information Sources

NGA, *National Governors Association*, <http://www.nga.org>, © 2011.

NGA, *Health Reform Implementation*, <http://www.nga.org/portal/site/nga/menuitem.751b186f65e10b568a278110501010a0/?vgnextoid=7f8844ce25208210VgnVCM1000005e00100aRCRD&vgnnextchannel=92ebc7df618a2010VgnVCM1000001a01010aRCRD>, © 2009.

NGA Center for Best Practices, *About the Economic, Human Services & Workforce Division*, <http://www.nga.org/portal/site/nga/menuitem.8274ad9c70a7bd616adcbeeb501010a0/?vgnextoid=b094d9b834420010VgnVCM1000001a01010aRCRD>, © 2011.

## 6.14 Office of the National Coordinator for Health Information Technology (ONC)

The Office of the National Coordinator for Health Information Technology (ONC) is at the forefront of the administration's health IT efforts and is a resource for the entire health system to support the adoption of health information technology and the promotion of nationwide health information exchange to improve health care. ONC is organizationally located within the Office of the Secretary for the U.S. Department of Health and Human Services (HHS).

ONC is the principal federal entity charged with coordination of nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information. The position of National Coordinator was created in 2004, through an Executive Order, and legislatively mandated in the Health Information Technology for Economic and Clinical Health Act (HITECH Act) of 2009.

ONC's mission includes:

- Promoting development of a nationwide Health IT infrastructure that allows for electronic use and exchange of information that:
  - Ensures secure and protected patient health information
  - Improves health care quality
  - Reduces health care costs
  - Informs medical decisions at the time/place of care
  - Includes meaningful public input in infrastructure development
  - Improves coordination of care and information among hospitals, labs, physicians, etc.
  - Improves public health activities and facilitates early identification/rapid response to public health emergencies
  - Facilitates health and clinical research
  - Promotes early detection, prevention, and management of chronic diseases
  - Promotes a more effective marketplace
  - Improves efforts to reduce health disparities;
- Providing leadership in the development, recognition, and implementation of standards and the certification of Health IT products;

- Coordinating Health IT policy;
- Strategic planning for Health IT adoption and health information exchange; and
- Establishing governance for the Nationwide Health Information Network.

### **State Health Information Exchange (State HIE) Cooperative Agreement Program**

In March 2010, ONC completed the announcement of State Health Information Exchange (State HIE) Cooperative Agreement Program awardees. In total, 56 states, eligible territories, and qualified State Designated Entities (SDEs) received awards.

The State HIE Cooperative Agreement Program funds states' efforts to rapidly build capacity for exchanging health information across the health care system both within and across states. Awardees are responsible for increasing connectivity and enabling patient-centric information flow to improve the quality and efficiency of care. Key to this is the continual evolution and advancement of necessary governance, policies, technical services, business operations, and financing mechanisms for HIE over each state, territory, and SDE's four-year performance period. This program is building on existing efforts to advance regional- and state-level health information exchange while moving toward nationwide interoperability.

On January 27, 2011, an additional \$16 million was made available to states through ONC's new Challenge Grant Program. This program will provide funding to states to encourage breakthrough innovations for health information exchange that can be leveraged widely to support nationwide health information exchange and interoperability. The HIE Challenge Grant Program is providing 10 awards between \$1 and \$2 million to State HIE Cooperative Agreement Program grantees to develop innovative and scalable solutions in five key areas:

- Achieving health goals through health information exchange
- Improving long-term and post-acute care transitions
- Consumer-mediated information exchange
- Enabling enhanced query for patient care
- Fostering distributed population-level analytics

#### **6.14.1 Information Sources**

ONC HIT, *Health Information Technology*,

[http://healthit.hhs.gov/portal/server.pt/community/healthit\\_hhs\\_gov\\_home/1204](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov_home/1204), 18 February 2011.

ONC HIT, *State Health Information Exchange Cooperative Agreement Program*,

[http://healthit.hhs.gov/portal/server.pt?open=512&objID=1488&parentname=CommunityPage&parentid=58&mode=2&in\\_hi\\_userid=11113&cached=true](http://healthit.hhs.gov/portal/server.pt?open=512&objID=1488&parentname=CommunityPage&parentid=58&mode=2&in_hi_userid=11113&cached=true), 16 March 2011.

### **6.15 Public Sector Human Services IT Advisory Group (HSITAG)**

The Human Services IT Advisory Group (HSITAG) is a committee operating within TechAmerica's State & Local Government (SLG) Division.

**TechAmerica**

TechAmerica is the leading voice for the U.S. technology industry, which is the driving force behind productivity growth and jobs creation in the United States and the foundation of the global innovation economy. Representing approximately 1,200 member companies of all sizes from the public and commercial sectors of the economy, it is the industry's largest advocacy organization and is dedicated to helping members' top and bottom lines.

TechAmerica was formed by the merger of American Electronics Association (AeA), Information Technology Association of America (ITAA), Government Electronics & Information Technology Association (GEIA), and the Cyber Security Industry Alliance (CSIA).

## **HSITAG**

Founded in 1993, HSITAG has become the collective voice for the private sector in the HHS marketplace. Its mission is to improve the delivery of human services through the application of innovative IT solutions and modern management practices. Ongoing concerns have been the facilitation of services integration, federal funding and approval processes, and IT procurement reform.

The group is led by Chairman John Petraborg, HP Enterprise Services, and Vice-Chairman Dave Jennings, Director, Northrop Grumman Information Systems.

Current agenda items include

- planning for major HHS conferences,
- engaging with new HHS and U.S. Department of Agriculture (USDA) program and IT leaders working for the Obama administration, and
- interfacing with state and local government CIOs and program leaders at our meetings.

The group is also engaged with other associations working on human services IT issues, including: APHSA, NASCIO, NCSL, and the Child Welfare League of America (CWLA).

### **6.15.1 Information Sources**

HITSP, *Healthcare Information Technology Standards Panel*, <http://hitsp.org>.

TechAmerica, *Public Sector (PS) Human Services IT Advisory Group (HSITAG)*, <http://www.techamerica.org/ps-hsitag>, © 2010.

## **6.16 U.S. CIO and CIO Council**

The U.S. CIO supports President Obama's goals of greater transparency, accountability, and citizen participation in Federal Government through the use of innovative IT strategies. The U.S. CIO works to ensure information security, protect individual privacy, and save taxpayer dollars by creating a Federal Government that strategically, efficiently, and effectively uses IT to serve and protect U.S. citizens.

The U.S. CIO and the CIO Council establish standards against which the success of all agency programs can be measured, including:

- monitoring the year-to-year performance improvement of Federal Government programs
- attracting and retaining a high-performance IT workforce
- optimizing Federal Government information resources and investments
- aligning IT solutions with federal enterprise business processes
- adopting and sharing best IT management practices
- managing risk and ensuring privacy and security

The U.S. CIO position was established within the White House's Office of Management and Budget (OMB) to provide leadership and oversight for IT spending throughout the Federal Government. In addition, each federal agency has its own CIO, as established by the Clinger-Cohen Act of 1996. Vivek Kundra was named U.S. CIO by President Obama on March 5, 2009. Kundra directs IT policy, strategic planning of federal IT investments, and oversight of federal technology spending. He establishes and oversees the enterprise architecture to ensure system interoperability and information-sharing, and maintains information security and privacy across the Federal Government. Kundra's priorities include openness and transparency, lowering costs, cyber security, participatory democracy, and innovation.

### **6.16.1 Information Sources**

CIO.gov, *CIO Council*, <http://www.cio.gov/>, © 2011.

CIO.gov, *IT Reform*, <http://www.cio.gov/modules/itreform/>, © 2011.

Kundra, Vivek, U.S. Chief Information Officer, *25 Point Implementation Plan to Reform Federal Information Technology Management*, <http://www.cio.gov/documents/25-Point-Implementation-Plan-to-Reform-Federal%20IT.pdf>, 9 December 2010.

U.S. Government, *IT Dashboard*, <http://it.usaspending.gov/>.

U.S. Government, *IT Dashboard: All Investments*, [http://it.usaspending.gov/investment\\_treemap/current-year-fy2011-continuing-resolution](http://it.usaspending.gov/investment_treemap/current-year-fy2011-continuing-resolution).

## 7 Summary and Next Steps

There have been many attempts at interoperability architecting and implementation at different levels within government with varying levels of success. Appendix A provides a quick-look summary into the products and status of the activities captured in this document. The table in Appendix A identifies areas that we are leveraging in the architecture, including MITA, SAMSHA, NIEM, NHIN, START (particularly for cloud computing), Montgomery Maryland Department of Health and Human Services, FEA, HHS EA, and the Microsoft Connected Health Framework. Other activities will be added to this document as the NHSIA architecture evolves.

Other activities and topics that are being reviewed for a future update to this document will include:

- HHS Enterprise Architecture (HHSEA)
- Affordable Care Act (ACA)
- Global Reference Architecture (GRA)
- Health Insurance Exchange (HIX)
- California One-e-App
- Children’s Bureau Division of State Systems
- IBM Health and Human Services activities
- Casebook

## 8 Acronyms

AAICAMA	Association of Administrators of the Interstate Compact on Adoption and Medical Assistance
AAICPC	Association of Administrators of the Interstate Compact on the Placement of Children
AAPWA	American Association of Public Welfare Attorneys
AASD	American Association of SNAP Directors
ACA	Affordable Care Act
ACCESS	not an acronym
ACF	Administration for Children and Families
AeA	America Electronics Association
AFCARS	Adoption and Foster Care Analysis and Reporting System
AHIMA	American Health Information Management Association
AHRQ	Agency for Healthcare Research and Quality
ANSI	American National Standards Institute
APHSA	American Public Human Services Association
APL	Applied Physics Laboratory
ARRA	American Recovery and Reinvestment Act
ATI	Advanced Technology Institute
AVAS	Assessment of Variation and Analysis Solutions
BCM	Business Capability Matrix
BH	Behavioral Health
BHDDH	Behavioral Healthcare, Developmental Disabilities and Hospitals
BPM	Business Process Model
BRM	Business Reference Model
CAQH	Council for Affordable Quality Healthcare
CARES	Client Assistance for Re-Employment and Economic Support
CCHIT	Certification Commission for Healthcare Information Technology
CDA	Clinical Document Architecture
CDC	Centers for Disease Control
CDS	Clinical Decision Support
CeHIA	Center for eHealth Information Adoption and Exchange
CFCIP	Chafee Foster Care Independence Program
CIO	Chief Information Officer
CISO	Chief Information Security Officer
CMS	Centers for Medicare & Medicaid Services
CMSO	Center for Medicaid & State Operations
CONNECT	not an acronym
COO	Concept of Operations
CORE ®	Committee on Operating Rules for Information Exchange
CRM	Customer Relationship Management
CSE	Child Support Enforcement
CSIA	Cyber Security Industry Alliance

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CT	Clinical Terms
CTISS	Common Terrorism Information Sharing Standards
CTO	Chief Technology Officer
CWD	Center for Workers with Disabilities
CWLA	Child Welfare League of America
DD	Developmental Disabilities
DEA	Department of Elderly Affairs (RI)
DEAS	Data Element Access Services
DHHS	Department of Health and Human Services
DHS	Department of Homeland Security
	Department of Human Services
DICOM	Digital Imaging and Communications in Medicine
DMS	Data Management Strategy
DoD	Department of Defense
DoITT	Department of Information Technology and Telecommunications
DOJ	Department of Justice
DRM	Data Reference Model
DST	Data Standards Table
EA	Enterprise Architecture
EAF	Enterprise Architecture Framework
ECM	Enterprise Case Management
E-Gov	E-Government
EHR	Electronic Health Record
EHSW	Economic, Human Services & Workforce
EKG	Electrocardiogram
ETL	Extracts, Transfers, and Loads
ETO	Efforts to Outcomes
EVVE	Electronic Verification of Vital Events
FEA	Federal Enterprise Architecture
FHA	Federal Housing Administration
FIPS	Federal Information Processing Standards
GEIA	Government Electronics & Information Technology Association
GJXDM	Global Justice XML Data Model
GRA	Global Reference Architecture
GSA	General Services Administration
HHS	Health and Human Services
HHSEA	HHS Enterprise Architecture
HIE	Health Information Exchange
HIMSS	Healthcare Information and Management Systems Society
HIPAA	Health Insurance Portability and Accountability Act
HISPC	Health Information Security and Privacy Collaboration

HIT	Health Information Technology
HITECH	Health Information Technology for Economic and Clinical Health
HITSP	Health Information Technology Standards Panel
HIX	Health Insurance Exchange
HL	Health Level
HPS	Health Plan Systems
HS	Human Services
HSA	Human Services Administration (PA Montgomery County)
HSAG	Human Services Advisory Group
HSITAG	Human Services IT Advisory Group
HSPD	Homeland Security Presidential Directive
HSS	Health and Social Services
ICAM	Identity, Credential and Access Management
ICD	International Classification of Diseases
ICM	Integrated Case Management
ICT	Information and Communication Technology
IHE	Integrating the Healthcare Enterprise
IHTSDO	International Health Terminology Standards Development Organisation
IJE	Inter-jurisdictional Exchange
IRTPA	Intelligence Reform and Terrorism Prevention Act
ISC	Information Sharing Council
ISE	Information Sharing Environment
ISIMC	Information Security & Identity Management Committee
ISM	IT Solutions Management
IT	Information Technology
ITAA	Information Technology Association of America
ITOP	Induced Termination of Pregnancy
JHU	The Johns Hopkins University
MH	Mental Health
MITA	Medicaid Information Technology Architecture
MMIS	Medical Management Information Systems
MMM	MITA Maturity Model
MPI	Master Patient Index
NACCHO	National Association of County and City Health Officials
NAPCWA	National Association of Public Child Welfare Administrators
NAPHSIS	National Association for Public Health Statistics and Information Systems
NAPIPM	National Association for Program Information and Performance Measurement
NASCCA	National Association of State Child Care Administrators
NASCIO	National Association of State Chief Information Officers
NASTA	National Association of State TANF Administrators
NCANDS	National Child Abuse and Neglect Data System

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NCHS	National Center for Health Statistics
NCSL	National Conference of State Legislatures
NEDM	National Education Data Model
NGA	National Governors Association
NHIN	National Health Information Network
NHSIA	National Human Services Interoperability Architecture
NIEM	National Information Exchange Model
NIST	National Institute of Standards and Technology
NLM	National Library of Medicine
NPPES	National Plan & Provider Enumeration System
NSDTA	National Staff Development and Training Association
NVDRS	National Violent Death Reporting System
NVSS	National Vital Statistics System
NYC	New York City
NYTD	National Youth in Transition Database
OBRA	Omnibus Budget Reconciliation Act
OCY	Office of Children and Youth
OMB	Office of Management and Budget
ONC	Office of the National Coordinator
ORS	Outcome Results System
PA	Pennsylvania
PCAST	President’s Council of Advisors on Science and Technology
PCMH	Patient Centered Medical Home
PCPCC	Patient Centered Primary Care Collaborative
PHIN	Public Health Information Network
PHINMS	PHIN Messaging System
PIV	Personal Identity Verification
PKI	Public Key Infrastructure
PMO	Program Management Office
PRM	Performance Reference Model
PS	Public Sector
PYD	Positive Youth Development
QIO	Quality Improvement Organization
RI	Rhode Island
RIM	Reference Information Model
ROI	Return on Investment
RTI	Research Triangle Institute
SA	Substance Abuse
SACWIS	Statewide Automated Child Welfare Information Systems
SAMHSA	Substance Abuse and Mental Health Services Administration
SDE	State Designated Entity

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SLG	State & Local Government
SNAP	Supplemental Nutrition Assistance Program (formerly Food Stamps)
SNOMED	Systemized Nomenclature of Medicine
SOA	Service Oriented Architecture
SOC	Stewards if Change
SRM	Service Component Reference Model
SROI	Social Return on Investment
SSA	State Self-Assessment
SSAID	Supportive Services Aid
START	Strategy to Apply Reusable Technology
STEVE	State and Territorial Exchange of Vital Events
TANF	Temporary Assistance for Needy Families
TRM	Technical Reference Model
UMLS	Unified Medical Language System
U.S.	United States
USDA	U.S. Department of Agriculture
VSCP	Vital Statistics Cooperative Program
VSI	Vital Statistics Improvement
XDS	Cross Enterprise Document Sharing
XML	Extensible Markup Language

## Appendix A: Activity Status Summary

Topic	Products				Enablers	Barriers	Breadth/Depth				Viewpoint Support						Key Topics			
	Systems or Services	Architecture	Studies and Guidance	Standards			Multi-State	Multi-Domain	Health	Human Service	Status Description	Overview	Information	Capability	Business	Systems	Infrastructure	Project	Structures	Security/Privacy
E = Existing P = Partial D = Dormant																				
Chapter 2 – Federal Activities Summaries																				
2.2	Adoption and Foster Care Analysis and Reporting System (AFCARS)				E	Mandated, federally funded		X		X	Existing federal system. States are required to submit data to this system twice a year. Effort resulted in uniform data definitions and methods and provides summary population data.									
2.3	CONNECT				E	Collaboration, Federal Health Architecture program			X	X	Existing open source software with first production use in 2009.						HIE	X		
2.4	Health IT					Federal funding, rules	Infrastructure, security and privacy			X	Has funded HITECH programs as incentive to adopt HER technology. Developed "Meaningful use" rules under HITECH.						HER HIE	X		
2.5	ISE				E	Mandated			X		Existing product: ISE Enterprise Architecture Framework									
2.6	MITA – Medicaid Information Technology Architecture				E			X	X	Existing architecture actively maintained. Products are highly applicable to NHSIA.										
2.7	National Education Data Model (NEDM)				P		Not widely known	X		Early stage data model that is not widely known.										
2.8	National Child Abuse and Neglect Data System (NCANDS)				E	Federal funding		X		X	Existing federal system, but state inputs are voluntary. Supports data analysis									
2.9	Nationwide Health Information Network (NHIN)							X	X	Existing and evolving standards, services, and policies being piloted. See CONNECT.						HER	X			
2.11	National Youth in Transition Database (NYTD)				E			X		X	Existing national database, scheduled to start receiving state data May '11. State collection paid for by CFCIP.									
2.12	Substance Abuse and Mental Health Services Administration (SAMHSA)				E			X	X	?	Existing architecture products, particularly a catalog of process descriptions developed in 2008.									

Topic	Products				Enablers	Barriers	Breadth/Depth				Viewpoint Support						Key Topics		
	Systems or Services	Architecture	Studies and Guidance	Standards			Multi-State	Multi-Domain	Health	Human Service	Status Description	Overview	Information	Capability	Business	Systems	Infrastructure	Project	Structures
Chapter 3 – State and County Activities Summaries																			
3.1	Alabama’s Camellia Project					Lack of funding		X	X	X	Study performed in 2007 for interoperability across programs. Only had funds to implement eligibility screening questionair via portal. Not currently funded.								
3.9	Montgomery Maryland Department of Health and Human Services									X	X	X	Good thought work, and an ongoing effort. Has achieved operational improvements across domains. Developed materials, particularly scenarios, to focus on eligibility screening across domains.						
3.7	NYC HSS Connect				E	E				X	X	X	Developed high-level conceptual architecture and some "quick win" capabilities. This is a current ongoing effort.						CCI
3.3	Pennsylvania – Montgomery County												Developed a roadmap and conducted analysis of confidentiality and privacy laws.						
3.2	Rhode Island Global Waiver and Data Warehouse								X		X	?							X
3.1	Wisconsin ACCESS/CARES								X	X									CCI
3.4	Health Information Exchange																		
3.6	Health Information Security and Privacy Collaboration (HISPC)																		X
3.5	SACWIS (Statewide Automated Child Welfare Information Systems)																		
3.8	START – Strategy to Apply Reusable Technology																		

Topic	Products				Enablers	Barriers	Breadth/Depth				Viewpoint Support						Key Topics	
	Systems or Services	Architecture	Studies and Guidance	Standards			Multi-State	Multi-Domain	Health	Human Service	Status Description	Overview	Information	Capability	Business	Systems	Infrastructure	Project
Chapter 4 – Industry Activities Summaries																		
4.1	Patient-Centered Medical Home																	
4.2	Commercial Packages to Support Integrated Human Services																	
4.3	Microsoft Connected Health Framework Architecture and Design Blueprint																	
Chapter 5 – Standards Activities																		
5.1	National Information Exchange Model (NIEM)																	
5.3	Health Level 7 (HL7)																	
5.4	Systematized Nomenclature of Medicine (SNOMED)																	
5.5	Global Justice XML (GJXDM)																	

## Appendix B: Existing Systems and Services

<u>Activity</u>	<u>Systems and Services in Use</u>
START	Proposed: Provider Management System
Wisconsin	ACCESS Portal CARES interChange
NYC HHS Connect	Worker Portal, Client Portal, Common Client Index
NCANDS	NCANDS
Rhode Island	Data Warehouse, Extract/Transfer/Load (ETL) tool
AFCARS	AFCARS