

Maryland Department of Human Resources
State Systems Interoperability and Integration Projects

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Integration Definition

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1. Introduction

Montgomery County Department of Health and Human Services (DHHS) is in the midst of a Process and Technology Modernization (PTM) initiative to improve execution of its integrated service management (ISM) model through streamlined work processes, improved cross-program information sharing, and reduced administrative burden. A major part of this initiative is the creation of an Enterprise Integrated Case Management System (eICM) that enables service workers throughout DHHS to access a centralized client record, comprehensive service delivery history, and concurrent case activity information on the people they serve. Access to this information is intended to speed the client intake and program assignment process, improve the assessment and service planning process, and provide detailed information for program performance and client outcomes evaluation and reporting. The eICM is based on the Life of the Case (LotC) which is a process framework designed specifically for health and human services operations.

In ISM, case contributors share information about their service strategies and service delivery histories for a common client, which helps to reduce duplicate effort, coordinate effective service planning, and improve outcomes for the client. However, County- and State-mandated information systems do not support the level of information sharing needed to support the ISM model. Over the past 15 years, Montgomery County DHHS has proliferated the number of program- and function-specific information systems that they use to facilitate cross-program case collaboration, mostly through printing and sharing of paper-based reports. The result is, today, DHHS uses more than 140 information tools and systems to manage and report on case process for its clients, with no technological integration, which places a significant administrative burden on program staff and interferes with the quality of service provided to clients.

Just as each service area is independent of the others, so are the information systems for each service area, with virtually no inter-connectivity. As a result, service workers have no holistic, integrated view of a client across multiple cases/service delivery instances. Workers within any particular service area or program often enter client information multiple times into different data systems, as required by agency procedure or to generate needed reports that systems of record cannot create. This high degree of duplicate input of client characteristics discourages case workers from using electronic data systems as a way to create a full record of the client's case history.

The nature of a large, diverse social service agency like Montgomery County DHHS requires many data systems to support case management processes. Because the County is closely tied to the State, the system needs to expand beyond County-managed information systems into State systems required for verification, tracking and compliance.

This report primarily describes the proposed approach for the Montgomery County eICM to operate with necessary state systems and provides an overview of the inter-system functions. To accomplish these goals, eICM system must be created with the ability to integrate with disparate systems. The implementation of the eICM project will result in an information system that addresses the workflow and data management needs currently supported by the Department's myriad systems, all within the structure of a Department-wide integrated case management service delivery model. Currently, Montgomery County DHHS utilizes more than 140 County and State systems as part of ISM; while most of these systems will be replaced with features in eICM, other State-level systems will remain. These systems provide case management, tracking and reporting features that are controlled at a State and Federal level, and the eICM must provide data to, or extract data from, them in order to provide an accurate, compliant view of a client's benefits and services.

Additionally this document explores three standards promoted by the Federal Government relevant to the eICM – National Information Exchange Model (NIEM), National Human Services Integration Architecture (NHSIA), and Medicaid Information Technology Architecture (MITA). While each has a specific purpose,

they are complementary – NIEM defines the data exchange standards for detailed transactions between diverse organizations; NHSIA is the overall definition of Business, Information and System architectures (views) of an overall framework for information sharing in Health and Human Services; and MITA defines the framework for the Medicaid Enterprise – with an emphasis on claims processing - and is a close cousin of NHSIA. All three are designed to facilitate secure electronic exchange of constituent information between government agencies.

2. National Information Exchange Model (NIEM)

NIEM is a community-driven, government-wide, standards-based approach to exchanging information. It is a consistent starting point to create a standards-based approach to exchanging data. NIEM provides various tools, such as a data model, training materials, technical support services, and an active user community, to help users with their projects. NIEM as a set of building blocks that are used as a consistent baseline for creating information exchanges so that the sender and receiver of information share a common, unambiguous understanding of the meaning of that information. NIEM ensures that a basic set of information is well understood and carries the same consistent meaning across various communities, thus allowing interoperability to occur.

To provide a common framework for information exchange in NIEM, partners must first develop a data exchange known as an Information Exchange Package (IEP); a description of specific information exchanged between a sender and a receiver. The IEP is usually coupled with additional documentation, sample (XML) instances, business rules, and more to compose an Information Exchange Package Documentation (IEPD).

An IEPD is the final product of the NIEM exchange development process, also known as the IEPD Lifecycle. NIEM uses Extensible Markup Language (XML) for schema definitions and element representation, which allows the structure and meaning of data to be defined through simple, but carefully defined XML syntax rules.

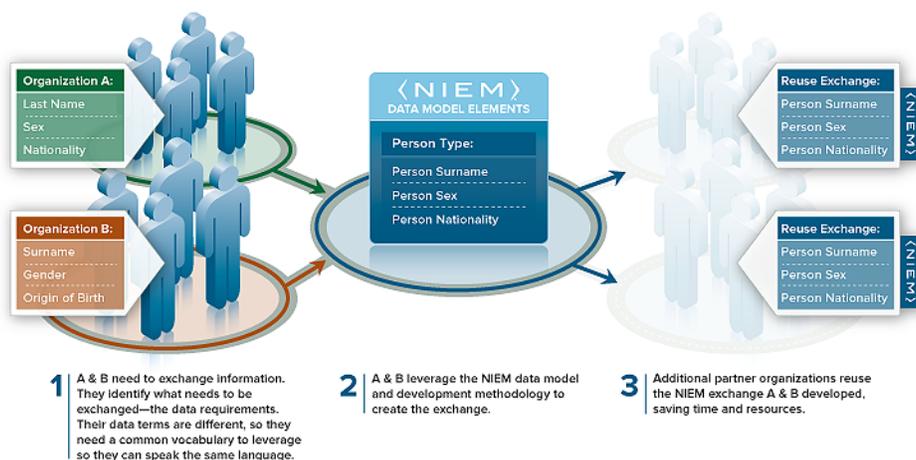


Figure 1: NIEM

NIEM Engagement Process (NEP)

The NIEM Engagement

Process (NEP) provides a structured framework for organizations to explore the use of NIEM for their information sharing and exchanging activities. The NEP explores the business transactions (exchanges) between programs (task specific divisions or providers) within the context of an enterprise (agency or other organization).

The NEP is intended to help an organization evaluate the potential costs and benefits of NIEM and develop a targeted NIEM adoption strategy based on its information sharing capabilities and needs. The NEP will also provide organizations with the opportunity to perform self-evaluation of information sharing and exchange activities to develop a business case for adopting the NIEM program. The flexibility of the process enables it to be applied to a wide range of organizations with varying capabilities, needs, and technical environments. The NEP has five steps for completion:

1. **Perform Research:** Conduct research regarding the program’s mission priorities and current information sharing and exchange activities. If appropriate, note any additional programs that could potentially benefit from NIEM.
2. **Conduct Stakeholder Interviews:** Hold interviews with the program points of contact (POCs) identified by the sponsor. During the interview, draw upon initial research to discuss current and potential information exchange(s).
3. **Conduct NIEM Readiness Assessment:** Compile the interview results and initial research to complete the NIEM Readiness Assessment.
4. **Qualify and Quantify the Value of NIEM:** Complete the Cost Model by inputting cost variables, values from the NIEM Readiness Assessment, and other data gathered through stakeholder interviews and research. Define performance metrics for the exchange.
5. **Adoption Plan:** Summarize key findings. Design a tactical implementation plan. Validate the Adoption Plan with participants.



Figure 2: NIEM Engagement Process Organizational Structure

NHSIA Challenge – Develop a national architecture to enable information exchange across currently siloed federal, state, local, and private human service information systems.

3. National Human Services Integration Architecture (NHSIA)

The NHSIA, pronounced niss'-e-a, is being developed for the Administration for Children and Families (ACF) as a framework to support common eligibility determination and information sharing across programs and agencies, improved delivery of services, prevention of fraud, and better outcomes for children and families. It will consist of business, information, security, and technology models to guide programs, states and localities in the efficient and effective delivery of services. NHSIA is being developed using the architectural framework displayed in Figure 3 below. Each of the viewpoints in the diagram is described in a separate viewpoint description document and associated architectural artifacts.

It is not the intent of NHSIA to define a comprehensive set of all capabilities required to provide human services. NHSIA is focused on only those capabilities that require an interoperable environment in which data and services are effectively shared. Many capabilities correspond directly to the LotC and the Core Data Flows - a high level representation of what data flows between phases of a case and when as well as how data is exchanged between organizations. NHSIA fills in the “white space” between phases and activities while NIEM provides the details of the exchange itself.

While the LotC defines process and data flows, the NHSIA Capabilities List is a set of high-level technical and business capabilities described in terms easily understood by decision-makers and is used to communicate a strategic vision. These capabilities are both defined at a high-level and described in more detail in the

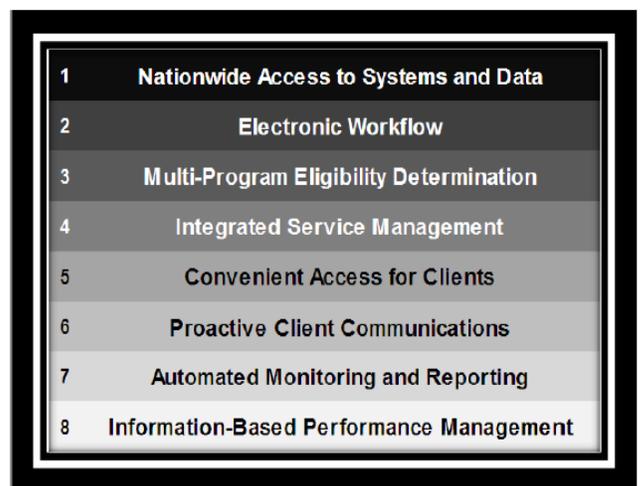


Figure 3: NHSIA High Level Capabilities

4. Medicaid Information Technology Architecture (MITA)

MITA is an initiative of the Center for Medicaid & State Operations (CMSO), and it is aligned with the National Health Infrastructure Initiative (NHII, <http://aspe.hhs.gov/sp/nhii/>). NHII is a voluntary network comprising clinical, public health, and personal health knowledge-based information systems that make health information available as needed to foster integrated business and IT transformation across the Medicaid enterprise to improve the administration of the Medicaid program. More mature than NHSIA, MITA has a large business and technology vision encompassing the following objectives relevant to the eICM:

- Adopt data and industry standards
- Promote secure data exchange
- Promote reusable components through modularity
- Promote efficient and effective data sharing to meet stakeholders' needs
- Provide a beneficiary-centric focus
- Support interoperability and integration using open architecture standards
- Promote good programmatic practices such as:
 - Software Engineering Institute's Capability Maturity Model (SEI CMM)
 - Separate on line analytical processing (OLAP) from on line transaction processing (OLTP)
- Support the integration of clinical administrative data to enable better decision making
- Break down artificial boundaries between systems, geography, and funding with the Title XIX Program

MITA promotes an environment that supports flexibility, adaptability, and rapid response to changes in programs and technology. MITA also provides data that is timely, accurate, usable, and easily accessible to support analysis and decision making for health care management and program administration.

Findings

The eICM can leverage a number of concepts and models from these frameworks. NIEM uses Information Exchanges Process Definitions (IEPDs) for information exchange among diverse user populations. NIEM information exchanges are well-defined, providing a clear understanding of the protocols and contents, leading to lower integration costs and higher data quality. NIEM provides a large community and a variety of tools to help the eICM define and build the framework, providing reference models and user stories to support the eICM development. The NIEM Engagement Process clearly defines a process for evaluating and implementing NIEM and determining its value in the project.

The NHSIA architecture framework defines information exchanges across multiple users, systems, and programs to establish a common vocabulary, provide a proper framework, and develop data structures and standards. NHSIA provides a reference model for data and processes across 54 major capabilities closely aligned with the Life of the Case. In fact, after initial analysis we determined Life of the Case and the Core Data Flows, substantially meet all relevant NHSIA capabilities.

MITA provides a framework interoperability across organizations and states in service to promoting the efficiency of Medicaid while improving service to providers and access to beneficiaries. MITA will prove useful in designing the eICM particularly as it relates to integration with the Maryland Health Benefits Exchange (HBE) and the Medicaid Management Information System (MMIS) being implemented at DHMH. MITA also allows for software reusability, integration of public health data, web-based access and integration with trading partners.

Since all three frameworks are relevant to Montgomery County DHHS, each will be analyzed and leveraged where beneficial to the eICM.

5. Relationship to Life of the CASE

The fourth view of NHSIA is "Integrated Service Management." The LotC represents a process framework

designed specifically for health and human services operations. The LotC features a best-practice template for case process and organizing cases into discrete activities common across all health and human services case types. The LotC creates opportunities for increased coordination among the different service areas that provide social services programs and supports to clients. For clients accessing services, it offers “no wrong door” accessibility to multiple services regardless of the client’s initial access point. Clients will not have to be knowledgeable about all the various services or programs they may be eligible for — accessing one service will serve as a gateway to all services, even if it is provided by a different service unit or program.

LotC is the backbone of the Process and Technology Modernization Program. LotC presents a different “view” of NHSIA as it cuts across different capabilities and in some ways it is also quantum – what it looks like depends on where you are and when you look; data flows and events depend upon which phase of the Life of the Case you are in. In the Life of the Case, each “Case” is a container that is advanced via workflow. A “case” will connect people, needs, providers, and services as well as have connections (data, actors) accumulated and broken throughout the workflow.

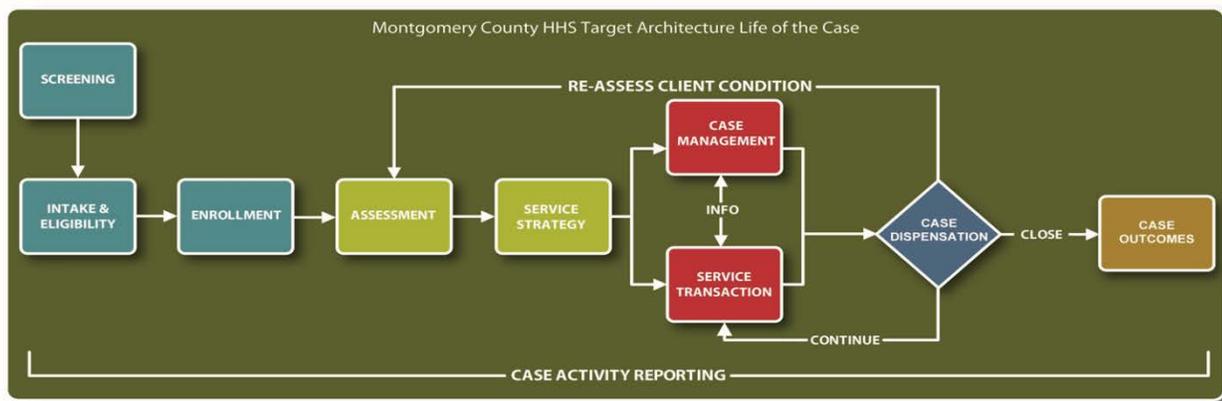


Figure 4 LotC

The LotC defines seven phases every case passes through, regardless of program. What varies is the length and intensity spent in each phase. Each phase has several activities supporting the major task of the phase. Each activity has inputs from the previous phase and outputs to the subsequent phase. Below are a few examples of how LotC maps to NHSIA.

The first phase, Screening covers the initial encounter a DHHS service area has with a client. One of the activities is Client Data Capture, which corresponds to the NHSIA Capability 55-“Locate Client Data” and 10-“Apply for Multiple Programs.” “Client Data Capture” captures the client’s presenting needs and the client’s demographics (residency, household composition, income, etc.) and uses this information to establish a

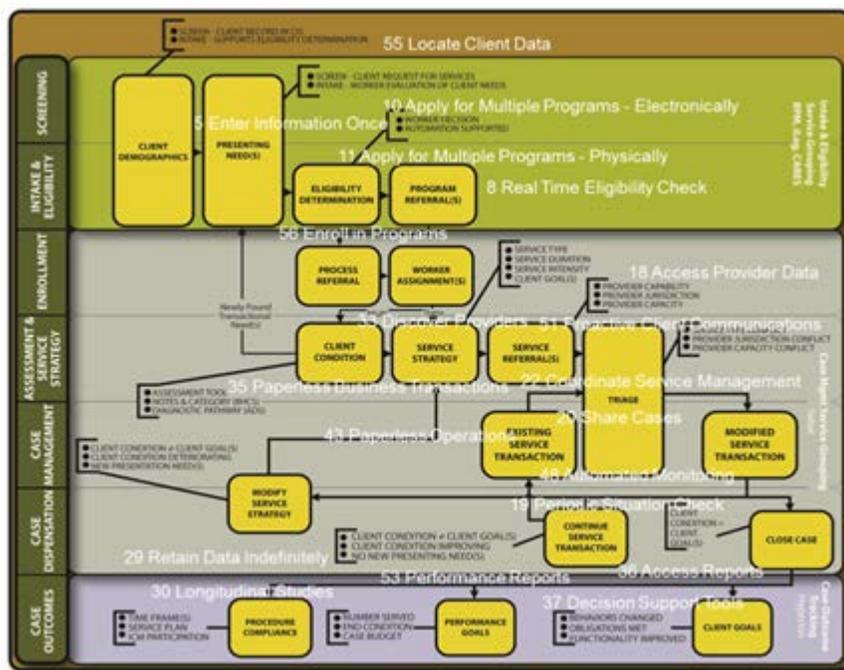


Figure 5 LotC Core Data Flows and Activities

and uses this information to establish a

unique identity for the client and trigger the Eligibility Pre-Screening activity. The main inputs for this activity are capturing the client’s presenting needs. This can be captured by service (ex: rental assistance) or issue (ex: eviction notice). Client demographics are used to establish the potential client in CIS (Master Client Index system) and to conduct a potential program match. This activity has a number of outputs, including the Typical Eligibility Pre-Screen chosen when the presenting need(s) correspond to the service selected. Another type of output is Referral to Other Service area, which occurs when presenting needs do not correspond to the service chosen, but may be served by another area or outside agency. The last type of output is Emergency Intake, this occurs when the presenting need(s) is critical, like an injury, behavioral episode, etc.

The second activity in the LotC is “Intake & Eligibility,” Corresponding to NHSIA Capabilities 5 and 8, “Enter Information Once” and “Real Time Eligibility Check,” once the client is found to be eligible for services provided by one or more service areas, the Intake activity will be used to capture more information about the client and perform a more detailed review of the appropriate services.

The third phase of the LotC is the Enrollment phase, corresponding to capability 56, “Enroll in Programs.” The enrollment process establishes a case for an eligible client and adds their case to the case management process. A key activity for the Enrollment phase is to formally associate a client to a case, and use that case to record all of the service activity associated with the client’s participation in a specific program. This case record will also affect the rest of the workflow depending on how the case record is defined. This activity will need to accept different inputs from the Confirm Client Participation activity, such as a verification record from “Confirm Client Participation” activity corresponding to Capabilities 19 and 48 “Periodic Situation Check” and “Automated Monitoring.” The final phase of the LotC is the Case Outcomes phase. Within the context of eICM, — case outcomes refer to all aspects of measurement, metric definition, data collection, data calculation, and reporting of service activity and its impact on client condition.

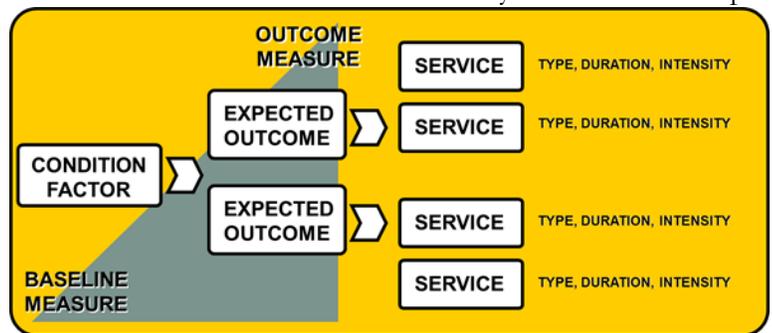


Figure 6: Outcome Tracking in LotC

The purpose of case outcomes is to validate the effectiveness of programs’ service delivery strategies on meeting client needs and improving functionality of individuals involved in a case. Tracking and measuring case outcomes is a critical function of the eICM. By analyzing client and provider outcomes, DHHS can:

- Determine if the agency is fulfilling its mission
- Demonstrate client progress towards objectives
- Detect potential problems
- Identify best practices
- Measure the efficiency of specific treatments or providers
- Justify service and program costs for the public and other stakeholders
- Support outcome-based contracting

Implementing performance measures in a standards-based environment opens the door to multiple types of analysis. For example, if another jurisdiction develops analytics against a particular standards-based data set, DHHS could leverage the models for analysis specific to Montgomery County. Additionally, DHHS could collaborate with other jurisdictions to share standards-based data for analysis across jurisdictional boundaries, thus accumulating related data for a broader population.

6. Potential Integrations

State Systems

Currently Montgomery County integrates with 25 State systems as part of its ISM model. While the majority

of these State systems support less than 20 County workers, large systems like MD CHESSIE, MABS, MMIS and CARES are integral to high-visibility service areas like Children Youth and Families (CYF) and Public Health Services (PHS). In addition, CYF requires integration of no fewer than 12 State systems for a number of functions. Of the 25 systems, only five are used by more than one service area.

The figure below illustrates the significant number of integrations that are required by the service areas using the eICM. The varied technical, business and process environments within the eICM partner ecosystem makes standards-based data exchange a critical design goal.

The exact technical specifications for the integrations are under development, but many are candidates for real time integration using NHSIA and NIEM. These include:

- CIS – Central registry for all clients and program enrollments Statewide. Supports case clearance and case registry for all Montgomery County DHHS Programs.
- CARES – Integrated eligibility for SNAP, TANF, and non-magi Medicaid – Highest client population and one of the largest user populations in DHHS. Entry point for many DHHS cases.
- Maryland Health Benefits Exchange – Eligibility for Magi – based Medicaid and subsidized insurance. Potential for portal, eligibility and integration for all DHHS programs. Primary consumer of enhanced federal funding.

Federal funding and the business use cases for these systems offer high potential for real time standardized data exchanges. As the primary entry point for many DHHS clients, integration with these systems is critical to the improvements gained through the Process and Technology Modernization Initiative.

Integration with CARES and CIS are planned, although the exact exchange mechanism is still under design and is a good candidate for NIEM/NHSIA. Integration with the Health Benefit Exchange is in the early planning stages. All three integrations offer potential for NIEM/NHSIA exchange; however, the architecture, technology, and funding potential of the Health Care Exchange offer the highest potential for DHHS.

The Health Benefits Exchange is based on the Curam Framework, supporting XML-based exchanges using web services. The technology architecture is based on CMS’s Seven Conditions and standards, facilitating a standards-based web services integration. The architecture also includes a number of enterprises:

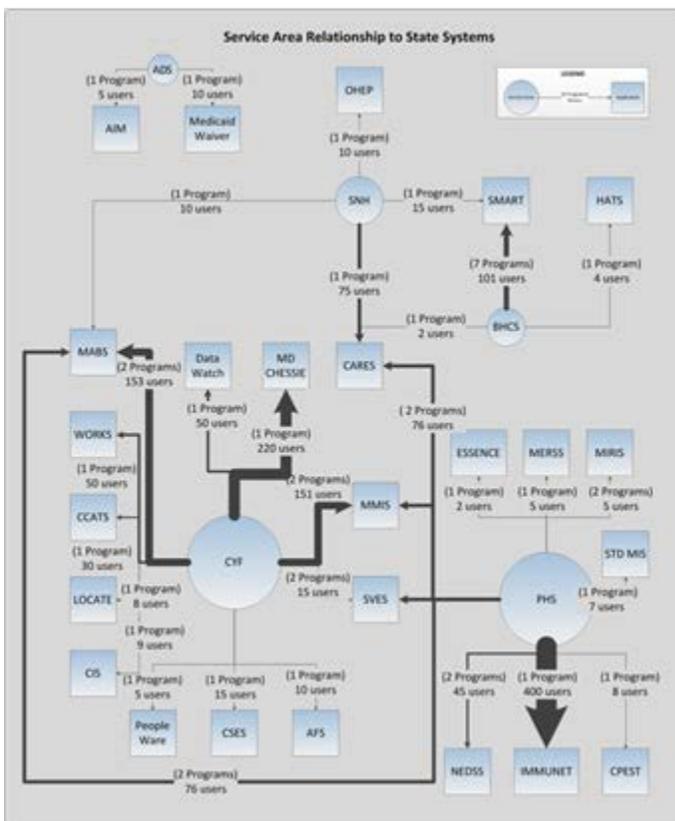


Figure 7: Service Area Relationship to State Systems

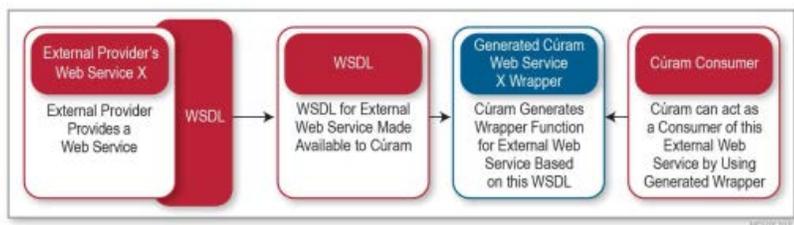


Figure 8: Heath Benefits Exchange Web Service Integration

Other Trading Partners

In addition to the state systems noted above, Montgomery County DHHS uses a number of federal systems, interfaces, and databases. Some of these systems are not planned for integration; however, the assessment should include opportunities to enter into data sharing arrangements with Federal partners to eliminate dual entry, or “swivel chair” integration.

In addition to Federal systems, private providers may be candidates for standards based exchange as the eICM implementation continues. Many of these providers use commercial off-the-shelf (COTS) systems while some are manual. The reporting requirements of eICM placed on providers could cause additional work and dual entry on staff. This requirement, combined with the anticipated broader participation among COTS vendors, provides additional justification for a standards-based exchange.

In the future state, newer county systems may be candidates. As systems for other county services are upgraded or replaced, new capabilities could make NIEM-based exchanges feasible and cost effective, especially those serving the courts – child support and juvenile justice which are mature domains supported by NIEM. The assessment should explore the possibility of NIEM-based exchanges with other county partners.

Montgomery County relies on a number of State supported legacy information systems as integral components of the existing service model. Other counties, who are not undertaking a process and technology modernization project, will continue to use these legacy systems directly. Data is aggregated out of these systems to provide a state-wide view of services rendered. The eICM project team will continue to analyze the eICM solution data needs on state systems, and State system data needs on eICM.

Implementing these data feeds will require additional effort from both the State as well as Montgomery County. Data feeds will be implemented in the following fashion:

- Batch jobs extracting data and making it available for upload by a complementary batch job on the other side of the communication path.
- Web services that are exposed and consumed via an Enterprise Service Bus (ESB). A consumer of data can call a web service for the retrieval of data from the system that maintains the master data record. Alternatively, a system can make an update of data to another system, by calling the appropriate web service.

State system integration via web services would require coding of the state system to expose web services to send and receive data or to consume web services on the County side. State system integration via batch jobs would require coding of the state systems to accept or dispatch data files that would be part of the exchange.

For those systems that will continue as-is, the Technology team will identify integration methods for these systems with the continued support of the Office of Information Technology (OIT). The goal is to identify the minimal number of integration techniques and leverage existing interfaces whenever possible. The Integration Definition will be the foundation of detailed integration design.

County Systems

In addition to State systems, the County uses 85 home-grown, custom and purchased solutions to meet additional needs not met by the State systems. In most cases, these are point solutions meant to satisfy one or more of the following functions:

- Reporting – create reports needed for operation of the program and/or required by state or federal mandate.
- Tracking – monitor services provided to a client, documentation, and demographic information
- Logging – list referrals, services, and appointments needed for case management.

These systems were needed due to the unavailability of a unified set of tools that provides needed functionality. However, this large inventory of disparate systems creates redundant data entry; challenges with determining the validity of data tracked, logged and reported against; and the inability to provide proper maintenance.

The table below lists known County and State systems and their functionality within the context of eICM. Each of these systems is built on a different architecture, and each has a different set of integration capabilities as well as access restrictions. DHHS will need to secure data sharing and access with the system owners well in advance of expected system integration.

While each of these systems provides relevant data and functions, DHHS will need to prioritize integrations based on budget and project timeline. The Integration Plan for each system will be developed in more detail as the project progresses and when the system is determined to be in scope for a given release.

System Used	System Functionality	Integration Plan
AERS/STEPS	PATRAC (AERS) - This application tracks health inspection activity Tracks inspections of food establishments	Retirement. Possible inclusion in eICM case processes.
AIF	<ul style="list-style-type: none"> * Common agency administrative database for client information mandated by leadership to be used, includes education level and whether or not they are employed * Tracking of demographic information, volume of clients served & variety of services delivered * Tracks LEP (Level of English Proficiency) data usage across programs in DHHS, client scheduling * AIF/BUCS - Budget Control System * School health - Records patient demographics and basic encounter information (timing of visit, who completed visit, and language spoken) and can run reports on this info. * Linkages- Tracking of demographic information, volume of clients served & variety of services delivered. * Also used to monitor caseloads and worker productivity 	Retirement. Inclusion in eICM case processes.
AIM	Nutrition program tracks meals received	Will not integrate in phase 1

System Used	System Functionality	Integration Plan
AERS/STEPS	PATRAC (AERS) - This application tracks health inspection activity Tracks inspections of food establishments	Retirement. Possible inclusion in eICM case processes.
Avatar	Billing, claims, and caseload, EDI billing bill state for MA for project delivery practice management and medical billing used by Community Case Management and UMP for fees AVATAR- Hospital Diversion (though not all data needed for Hospital Diversion is available here; in order to compile data for the state we go to multiple sources, including some listed	Web service or database integration of needed features.
Avaya	Tracks number of telephone calls	Will not integrate in phase 1.
BCCP	Breast and Cervical Cancer Program database used for the state screening program	Will not integrate in phase 1.
CARES	Maryland state wide citizen service eligibility determination and resource tracking system	Web service or database integration of needed features.
CAST	Cancer Screening Database used across the state to capture all demographic and patient medical information related to cancer screening, diagnosis, and treatment.	Web service or database integration of read-only data.
CATS	MS Access database - All inmates assessed by CATS since the inception of the program. Demographics, disposition, staffing, LEP (Level of English Proficiency) etc.	Retirement. Functions designed as part of eICM.
CCATS	Eligibility determination for Purchase of Care (State Child Care Subsidies)	Web service or database integration of needed features.
CHESSIE	Maryland Children's Electronic Social Services Information Exchange - SACWIS compliant automated child welfare case management, tracking and information system	Web service or database integration of read-only data.

System Used	System Functionality	Integration Plan
Child Support Enforcement System	State child support system. Used to determine eligibility and program cooperation, specifically by confirming client's pursuit of or receipt of child support	Web service or database integration of read-only data.
CIS	Client Information System IV-E Eligibility Determination and CPS clearances	Web service or database integration of read-only data.
Clinical Fusion	Enter data (demographics and all visit details) and generate reports (e.g. number of patients, number of diagnoses, etc.) at school-based Health Centers	Will not integrate in phase 1.
CRS	<ul style="list-style-type: none"> * Common agency database mandated by leadership to be used. * Basic client data collection and some basic reports * Temp. Cash - Check-In Management system used to log basic client demographics and presenting information upon intake and schedule appointments. 	Retirement. Functions designed as part of eICM.
DHR/CIS system	State system that captures data on caseload counts and recon dates	Web service or database integration of read-only data.
HIMS	Client appointment system	Retirement. Functions designed as part of eICM.
HMIS		Retirement. Functions designed as part of eICM.
HRAP database	Access database - client demographic and payment information	Retirement. Functions designed as part of eICM.
InterRAI	Internet based system.	ADS – Adult Services Case Process.
JD Edwards	Fee collections	TBD
MABS	Maryland Automated Benefits System used to access wage information and unemployment data for eligibility clearances. To obtain wage/unemployment information	Web service or database integration of read-only data.
MD Judiciary Case Search	Website that provides public access to the case records of the Maryland Judiciary	Web service or database integration of read-only data.

System Used	System Functionality	Integration Plan
Medicaid EVS	Maryland system to track Client/Provider MA Waiver	Web service or database integration of read-only data.
MIRIS	Maryland Immigrant and Refugee Information System - statewide database stores health assessment data for refugees and asylees settled in the different counties Used to enter information from health assessments done on refugees and asylees in the Mo.Co. Refugee Clinic	Web service or database integration of read-only data.
MMIS	Medicaid Management Information System - Used to verify MA eligibility and enrollment with providers	Web service or database integration of read-only data.
Motor Vehicle Administration (MVA)	Used for clearances (assumed use is to confirm client address)	Web service or database integration of read-only data.
OHEP database	MS Access database, Arrearage database Tracking of applications for Home Energy Program Monitor application status, case manager assignment	Web service or database integration of read-only data.
RAP	Application database This database tracks data on client's rental supplements and transmits payments to FAMIS. Database tracks data on Client's rental supplements and transmits payments to FAMIS..	Retirement. Functions designed as part of eICM.
RAPIDS	Access database to track birth outcome. Name, DOB, due date, birth date/weight/breast feeding This data base tracks outcome data for Nurse Case Management	Retirement. Functions designed as part of eICM.
Risk assessment database	Client tracking within Adult Protective Services	Retirement. Functions designed as part of eICM.
SAIL (Service Access Information Link)	Web-based screening and application tool that allows Maryland applicants to complete applications, report changes, print forms for participating programs.	Web service or database integration of read-only data.

System Used	System Functionality	Integration Plan
Service Point	This database tracks data on clients that are homeless throughout the county. Required by HUD	Web service or database integration of read-only data.
SMART	SMART is used for substance abuse assessments, drug screen monitoring and referrals. Client & case tracking of counseled school-age children/families Clients are usually started in SMART when we enter them so we usually add an episode to the existing information.	Retirement. Functions designed as part of eICM.
SMILE Database	BBSMILE, MS Access database used for nurse case management, has client documentation and evaluations	Retirement. Functions designed as part of eICM.
SOLQ		MA - Community MA
STD-MIS	Syphilis/HIV cases and STD morbidity	TBD
SVES (State Verification Exchange System)	State Verification Exchange System - Standardized method used for clearances to verify Citizenship and Social Security.	Web service or database integration of read-only data.
UNITED/AIF	Used for Intake (log basic client demographics, presenting information), Triage, Evaluation, Appointments, Referrals (internal and external) and scheduling appointments.	Retirement. Functions designed as part of eICM.
WORKS	Web-Based - Work Program used for employment services tracking for Temp Cash Assistance, food stamps, non-custodial parents. Tracks Federally required data for TCA customers in Work activities Tracks activity and attendance for employment services participants; includes assessment	Web service or database integration of read-only data.
WPA database	Screen, client tracking and provide vouchers for child care for WPA clients	Retirement. Functions designed as part of eICM.

7. Integration Technologies

Montgomery County would leverage its existing Oracle Siebel environment and extend it to support eICM model and replace local tools for better program delivery and integration.

Siebel Enterprise Application (Siebel EAI) is the set of products on the Siebel Business Platform that includes tools, technologies, and prebuilt functional integrations that facilitate application integration. It is recommended that Montgomery County extend the County's Siebel environment to support the eICM model and replace local tools.

Some of the features provided by Siebel EAI include:

- Provides components to integrate Siebel Business Applications with external applications and technologies within your company
- Works with third-party solutions, such as solutions from IBM, TIBCO, WebMethods
- Provides bidirectional, real time and batch solutions to integrate Siebel applications with other applications
- Provides a set of interfaces that interact with each other and with other components within a Siebel application. Some of the features that these interfaces provide include:
 - Provides a flexible, service based architecture that is built on top of configurable messages using XML and other formats
 - Provides compatibility with IBM MQSeries, Microsoft MSMQ, Java and J2EE, XML, HTTP, and other standards.
 - Provides access of internal Siebel Objects to an external application
 - Takes advantage of prebuilt adapters and enterprise connectors
 - Provides compatibility with third-party adapters and connectors
 - Provides data transformation
 - Integrates external data through virtual business components and external business components
 - Provides a graphical business process designer, programmatic interfaces, and a high volume batch interface

7.1 Siebel EAI Adapters and Connectors

Siebel EAI provides adapters and connectors to help integrate between a Siebel application and an external application. Other connectors are also available through partners for Siebel Business Applications. For each supported business process, the connectors include data mapping between the exchanged entities, and sequencing and error handling.

7.2 Siebel Enterprise Integration Manager

Siebel Enterprise Integration Manager (EIM) manages the bidirectional exchange of data between the Siebel Database and other corporate databases. This exchange is accomplished through intermediary tables called EIM tables (In earlier releases, these tables were known as interface tables.). The EIM tables act as a staging area between the Siebel Database and other databases. This will be the preferred method for local applications with no means of SOA-based integration.

7.3 Web UI Dynamic Developer's Kit

The Web UI Dynamic Developer's Kit (Web UI DDK) is a kit for a developer that is based on web services. It consists of interfaces that provide access to Siebel data, and a wizard that generates a quick start kit. The quick start kit includes sample JavaServer pages that are deployed in a Web application and that provide the Web developer with sample code that includes common data manipulation operations and basic UI rendering. A Web developer can modify the sample code instead of developing from scratch, providing the developer a jump start on development work.

Features of the Web UI DDK include:

- **Web UI DDK Wizard.** A wizard in Siebel Tools that is used to generate a development kit that includes sample JavaServer pages and other J2EE artifacts.
- **Sample JavaServer Pages.** Sample pages that are generated by the Web UI DDK Wizard, then deployed in a J2EE environment.
- **Data Schema and Metadata Report.** A report that a Java developer uses to understand the Siebel data model.
- **UI Data Adapter.** A Siebel business service that exposes APIs to access Siebel data.