Health and Human Services Commission (HHSC)

Enterprise Data Governance (EDG) Initiative

Quarterly Report

To the Legislative Budget Board (LBB) and the Governor's Office

As Required by Rider 216

Article II, HHSC, 2018-19 General Appropriations Act

June 01, 2018

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Section 1. Overview

The Health and Human Services Commission submits this report to the Legislative Budget Board and the Office of the Governor, State of Texas, as stipulated in Rider 216 of the 2018-19 General Appropriations Act (Article II, HHSC, 85th Legislature) regarding the development of an enterprise data governance program for health information:

*"**Enterprise Data Governance (EDG)**. Included in the amounts appropriated above in Strategy L.1.2, Information Technology (IT) Oversight & Program Support, is $6,740,700 in All Funds ($920,175 in General Revenue) in fiscal year 2018 and $6,420,700 in All Funds ($888,175 in General Revenue) in fiscal year 2019 for development and implementation of the Enterprise Data Governance project.*

HHSC shall submit quarterly reports to the Legislative Budget Board and the Governor reflecting actual expenditures, cost savings, and accomplishments implementing the Enterprise Data Governance project. The report shall include a detailed plan for the project, a proposed schedule of expenditures, and the status of implementation for a comprehensive Medicaid focused Enterprise Master Data Management System, Metadata Repository, and Information Management Program. Additionally, the report shall include detailed strategies developed and implemented by HHSC to restrict the Enterprise Data Governance project to those items presented and approved by the Eighty-fifth Legislature, 2017."

Section 2. Plan and Strategy

2.1. Detailed Plan

The Enterprise Data Governance project is operating on an approved Implementation Advance Planning (IAPD) document through 2022, with annual gateway approvals from the Centers for Medicare and Medicaid Services (CMS). The EDG team identified, and CMS approved, five project tracks to implement the overall Medicaid-focused EDG solution. Each track is composed of a set of phases. All five tracks will persist beyond the biennium.

Below are the project plans and approach details for each of the five EDG project tracks:

- Data and Information Management Track (DIM)

- Data Quality and Standards Track (DQS)

- Metadata and Reference Data Management Track (MRDM)

- Data Architecture Track

- Data and Information Management Track

Data and Information Management Track

The purpose of the DIM track is to implement an enterprise Master Data Management (MDM) system for use across the Health and Human Services (HHS) System.

Key functions of the MDM system are as follows:

- **Data Acquisition:** This capability acquires data from various sources containing similar data sets.

- **Data Standardization:** This capability ensures that master data conforms to data standards adopted by the EDG Council.

- **Data Mastering and Data Governance:** Data mastering includes data matching, merging, and retaining relevant information from various systems to form a single version of a matched record. Identity resolution across source systems requires data governance, the activity of an organizational structure that guides the alignment and implementation of enterprise data management policies and processes.

- **Data Publishing:** Master records need to be integrated with HHS systems and data-driven business processes. The data publishing capability allows integration of golden records as needed by existing processes in HHS.

Overall Solution:

Implement a Medicaid focused Master Data Management system. MDM is the organization, management, and distribution of corporately adjudicated, high-quality information with

widespread use in the organization. The DIM track encompasses the implementation of a Medicaid focused HHS system-wide system that manages data and information for HHS use. Primary among these systems is the system that creates and manages mastered domain data, the HHS Insights Platform.

Use the MDM layer as a hub to measure, manage, and increase data quality in critical HHS data assets.

Data Quality and Standards Track

The quantitative measurement of data quality is imperative to improve said data. The DQS track ensures that the HHS System can measure the data quality within key HHS systems and make necessary recommendations to improve data quality through the creation of data standards. Continuous monitoring of data quality within mastered data domains is a key requirement and an integral part of the EDG program.

Overall Solution:

EDG's Data Quality process includes the following key components:

- Data Profiling

- Data Remediation

- Data Monitoring

Collectively, the key components of the Data Quality process are cyclical in nature and will be required to be repeated while profiling and remediating data quality issues for any given source system.

DQS will include profiling data sets from HHS systems to identify data anomalies and issues that adversely affect the business processes that the system is supporting. The DQS Track is divided into four phases to ensure the measurement of data quality for all Medicaid systems. Systems prioritized based on requirements from projects on the Medicaid Information Technology and Architecture (MITA) roadmap will be added to each DQS phase and each phase will deliver key capabilities for these systems.

Metadata and Reference Data Management Track

Metadata refers to that data within the HHS System that provides information about data and information elements. Developed systems typically use reference data for context to codes. Examples of reference data include county codes and respective references, region codes, and International Classification of Diseases (ICD)-10 codes.

Metadata and Reference data for systems within HHS are generally inconsistent and do not conform to any HHS system data management standard. Issues arising from lack of metadata

and reference data standards become evident during data integration or data consolidation, resulting in poor data quality in reports and systems that lack HHS system alignment.

The MRDM track alleviates challenges arising from different standards, definitions, and reference codes by collecting information from disparate source systems, storing that information in a centralized repository (a metadata repository for metadata and reference data management repository for adopted HHS system reference standards), and governing the creation, use, and maintenance of such data using EDG policies and processes.

Metadata management activity falls into three broad categories:

- **Collect:** This activity allows collection of metadata/reference data from transactional systems. Collection also includes the capture of changes to already collected metadata/reference data. During the implementation phase of the project, HHS intends to collect all business and technical metadata and relevant reference data.

- **Govern:** Governance is the activity in which data stewards will analyze the collected metadata/reference data for discrepancies and recommend standards. The EDG Council determines the priority given to metadata/reference data domains required by Medicaid systems and CMS-approved Medicaid projects on the MITA roadmap.

- **Store / Publish:** This activity will allow storage and publication of metadata/reference data sets. Storage serves the important function of acting as the "hub" for metadata/reference data domains. Scope includes implementing necessary solutions to ensure the EDG Council can govern reference data and publish for multiple HHS system uses via a single, controlled interface.

Overall Solution:

Implement a Data Asset Repository (DAR) to collect comprehensive data asset information across HHS (as mandated by Sunset Advisory Commission report, July 2015, Issue 7). A data asset is any kind of information that contains valuable records. It can be a database, a document, or any type of information managed as a single set. Large HHS systems generally comprise of multiple types of data assets, which are usually migrated as a logical set, when systems are modernized and/or replaced. Ensure ease of accessibility and updated access for HHS data subject matter experts to the DAR. Ensure data assets, technical and business metadata are widely available, searchable, and viewable in a browser. Where possible, technical and business metadata created within other tracks should be linked to quality metadata.

In addition, implement a technical Metadata Repository (MR) to create visibility of HHS system data models and provide search capabilities within system entities and attributes.

Data Architecture Track

Data Architecture is a key EDG competency that is beneficial in identifying and maintaining data and information assets within the HHS System. The primary goal of Data Architecture is to ensure key Medicaid-focused data domains are identified, defined, and managed appropriately within the HHS System. Additionally, this track is responsible for creating and maintaining a conceptual and a logical data architecture that aligns with the Texas HHS business architecture as referenced through the MITA framework. As a result, activity within this track aligns closely with MITA to identify improvements in data architecture that will impact business processes.

Overall Solution:

Develop and implement data governance processes to increase HHS competence and maturity in Enterprise Information Management (EIM). Integrate governed HHS reference data and data quality metrics into MDM tools as the project deploys in HHS under the guidance of EDG Council and EDG Steering Committees. Implement reference data standards for HHS that data stewards, who must be able to explain the utility of data beyond their program area, can use. Data analysts and business interface designers can employ reference data mapped to the HHS System standard to standardize analytic output. Operational system architects and portfolio managers can use the same reference standards to provide long-term HHS system alignment and interoperability goals to their operational systems as they are maintained/replaced.

Data and Information Controls Track (DIC)

The DIC track of the EDG program serves two basic purposes. First, it helps in managing the EDG program by clearly understanding the increased efficiencies associated with the program through the identification, definition, creation, and implementation of various controls and metrics required. Further, it helps in identifying and monitoring various data controls like data security and data access for key data domains identified as part of the EDG program.

Overall Solution:

Leverage the decision structure of the EDG Council to prioritize the creation of widely accepted data quality metrics. Utilize existing workgroups to adopt access and publication standards that control access to implemented repositories. Inform EDG Council of version roadmap options for implemented applications.

2.2. Detailed Strategy

This section details the strategies developed and implemented by the HHS System under the five identified project tracks.

Data and Information Management Track (DIM)

Previously Delivered (fiscal year 2016-17)

- Designed and implemented Release 1 and Release 2 of the HHS Insights Platform, creating tools and processes that provide the capability to identify, resolve, and harmonize critical provider and member identities across multiple HHS systems. HHS Insights Platform is the name of HHS system's master data management platform.

- Created policies, processes, and standards to establish master data records and manage mastered identity data within member and provider data domains.

Expected Outcomes (fiscal year 2018-19)

- Create measurement tools, define processes, and ensure that people (data stewards) are coordinated for management of provider and member master data.

- Improve in data quality of provider and member identity and critical attribution, with price of non-conformance valued directly within business processes that depend on the attribution.

- Increase visibility of providers and members as they enter, exit, and move between agency programs.

Data Quality and Standards Track (DQS)

Previously Delivered (fiscal year 2016-17)

- Data profiling of eight HHS data sources within data acquisition processes for the HHS Insights Platform, which allows automated measurement of critical data quality by source. The eight data sources are:

    o Texas Integrated Eligibility Redesign System (TIERS)

    o Northstar

    o Compass21

    o Maximus

    o NE Provider

    o Vendor Drug Program (VDP)

- o Client Assignment and Registration System (CARE) Operational Data Store (ODS)

- o Premiums Payable System (PPS)

- Defined identity exception processes and training content for use by subject matter experts, and future data stewards, in order to allow manual decisions regarding unresolved identity duplication.

Expected Outcomes (fiscal year 2018-19)

Increasing HHS data quality requires tools, processes, and human resources, all orchestrated to work together. The MDM tools implemented in previous phases are operational. During federal fiscal year 2018, new data quality processes (exception management and data quality measurement) will leverage MDM tools. Existing business processes to perform data quality and metadata management tasks will embed data stewards, using capabilities now available on the HHS Insights Platform. The EDG Council will publish a set of data quality metrics and goals to provide guidance to HHS system data stewards in this biennium.

- Select and adopt critical data quality metrics for provider attribution, member attribution, and operational source data quality (EDG program staff to propose list for adoption by EDG Council).
  For example, these could include (but are not limited to):

  - o Percentage of data assets by departmental area with no identified business owner

  - o Trended measures of identity data quality (e.g. percentage of members by program with unresolvable physical addresses)

  - o Trending of managed care encounters (by Managed Care Organization (MCO), by service type) with known defects

- In conjunction with identified data, stewards (embedded within Center for Analytics and Decision Support (CADS), Medicaid/Children's Health Insurance Program (CHIP), and Access and Eligibility Services) design HHS system dashboards within the HHS Insights platform that are capable of tracking and trending critical HHS data quality metrics, with defined relationships to identified business goals.

Metadata and Reference Data Management Track (MRDM)

Previously Delivered (fiscal year 2016-17)

- Initial implementation of Data Asset Repository was exposed for data entry and browsing via Microsoft SharePoint.

- Initial implementation of HHS Metadata Repository to store and browse technical metadata and HHS system data model (within Informatica Metadata Manager).

- Technical system metadata and updated data models for 27 major HHS systems readily available via a single, trusted location in the HHS Metadata Repository.

- Change management processes and policies defined with the EDG Council's support to establish an effective change management framework to collect source system metadata changes to support the continuous updating of the HHS Metadata Manager and Data Asset Repositories by data asset owners and subject matter experts.

Expected Outcomes (fiscal year 2018-19)

- During fiscal year 2018, the EDG Steering Committee will refactor the EDG Council to reflect the major organizational changes within HHS that have taken place between August 2016 and September 2017. In particular, the EDG Council will have representation on all HHS IT Governance councils and will be creating project-oriented, cross-functional workgroups in order to address known issues of data management and data quality across Texas HHS.

- High completion rate of fully described HHS data assets by agency and department as measured and tracked by DAR score carding within SharePoint. Sunset Report Issue 7 specifically mandates this data asset management.

- Acquire technical system metadata and updated data models for all major HHS systems, provisioning them within a readily available, trusted, and secure location.

- Implement change control processes that will allow governance for reference data collected from disparate source systems within HHS to update and/or replace system metadata at appropriate times in system development lifecycles. This will require establishing interaction between the EDG Council and the HHS IT Governance structure.

- Refresh and enhance technical metadata from all HHSC Medicaid source systems.

Data Architecture Track

Previously Delivered (fiscal year 2016-17)

In previous phases during fiscal year 2016-17, the EDG project identified, and the EDG Council approved, two critical data domains, largely based on their impact on MITA: member and provider. The EDG team, in collaboration with the EDG Council and HHS subject matter experts, has previously completed various EDG activities for each of these domains. These include:

- Providing an easily understood definition for both member and provider data domains.

- Identifying attributes that will help uniquely identify Medicaid member and provider records across disparate systems within HHS.

- Collecting metadata and related reference data (for 27 HHS systems) for member and provider domains.

Expected Outcomes (fiscal year 2018-19)

- There will be a re-chartering of a cross-functional Enterprise Data Governance Council (EDGC) and creation of data governance workgroups. The EDG Steering Committee may invite state agency partners outside the HHS System that share major data exchange processes with the HHS System (e.g. Department of Family and Protective Services (DFPS) for foster care processes in Medicaid) as *ex officio* participants in the EDG Council.

- Creation of policies and procedures for governed reference data and governed master data.

- Controlled publication of all governed reference values within HHS Insights (the MDM Hub discussed within DIM on page 5).

- Establishment of data stewardship as a practice within HHS business processes.

- Identification of low utility, duplicate, or irrelevant data interfaces and exchanges.

- Identification of high-value, trusted interfaces and exchanges to promote their intentional re-use.

- Creation and ongoing maintenance of a conceptual and a logical data architecture that aligns with the Texas HHS business architecture as referenced through the MITA framework. As a result, Data Architecture within EDG will work very closely with the MITA team to identify business processes that Data Architecture will affect.

- Development of EDG program in partnership with the new IT governance model to determine critical areas of the HHS information architecture, both as-is and strategic to-be, which will be related to previous MITA Information Architecture deliverables, including the 2015 State Self-Assessment.

- Using previously established definitions of member and provider, as well as previously collected system metadata, to create enterprise conceptual and logical enterprise models for identity and reference data in these domains.

- EDG Council working groups will use additional standards for technical architecture documentation to further establish data management alignment across IT governance

processes. These include data modeling and data dictionary standards, change management notification, and data stewardship reporting processes.

- The EDG Council will adopt recommendations for uses of published member and provider "best version of the truth" records to an Oracle repository. Once implemented, this repository will allow data analysts and system operations subject matter experts mass access to mastered records. HHS envisions this data structure and/or services architecture as the foundation for subsequent HHS projects that will enable HHS system analytics. Data exchange processes can use this repository as a key component to improve data quality of member and provider identity and attribution within existing HHS operational systems.

Data and Information Controls Track

Previously Delivered (fiscal year 2016-17)

Not applicable. This track begins in federal fiscal year 2018.

Expected Outcomes (fiscal year 2018-19)

- The EDG Council will engage in a partnership planning model with IT Governance, the Office of the Chief Technology Officer (and others within the Office of the Chief Information Officer) in order to define critical metrics of success for EDG.

Additionally, the EDG Council will adopt policies and procedures that govern:

- Provisioning of access to the HHS Master Data Repository and associated metadata repositories. The HHS Master Data Repository and associated metadata repositories were previously developed and implemented in other tracks and will be expanded throughout fiscal year 2018-19.

- The EDG Council will publish adopted Reference Code Standards for analytic use.

- Authorization of standard reference values (previously adopted) for use in standardization of HHS system analytics. (This creates standards that will specify several fundamental requirements for future HHS system analytic strategy.)

- Informatica tools updated to use Reference Data Management (RDM) data governance workflow capabilities (available within Informatica 10.2).

Section 3. Accomplishments

Accomplishments for the EDG project reported below are within the defined categories of activities associated with that project.

Note: Accomplishments reported previously are *italicized*.

3.1. Medicaid focused Enterprise Master Data Management System

- Completed hiring process for EDG staff augmentation resources. On-boarded a Master Data Management (MDM) Enterprise Architect, MDM Project Manager, Informatica Developer, and two MDM Business Analysts to continue EDG implementation activities for fiscal year 2018-19.
- Started development of a Master Data Repository (MDR) to publish views of master client and provider indexes.
- *Submitted necessary forms to post requisitions for fiscal year 2018-19 EDG positions required for future execution of project tracks. Awaiting executive management approval to post requisitions.*
- *Continued handling daily loads in the HHS Insights platform.*
- *On boarded new Database Administrator to assist with EDG implementation activities.*
- *Completed Enterprise Master Data Management (EMDM) Release 2 project close out activities.*
- *Completed knowledge transfer from incumbent Deliverable Based Information Technology Services (DBITS) contractor to in-sourced project team.*
- *Planned hiring rollout for fiscal year 2018-19 EDG positions required for future execution of project tracks.*

3.2. Metadata Repository

- Began socialization of Informatica Business Glossary to a wider group of business users within the organization.
- Continued meeting with technical and business subject matter experts to update technical and business metadata in Metadata Manager and the Data Asset Repository respectively.
- Continued collaborating with HHS source systems to adopt change management automation activities.
- *Developed data extraction methods for Data Asset Repository (DAR) SharePoint Lists (to be used in implementing more flexible reporting and visualization during gap analysis).*
- *Reviewed and updated onboarding process documentation for Informatica Metadata Manager.*
- *Began addition and harmonization of new term set to Informatica Business Glossary.*
- *Continued meeting with subject matter experts from various program areas to update business metadata in the DAR.*
- *Developed gap analysis for DAR completion, and shared gap measures with HHS Data Sharing workgroup.*
- *Continued meeting with technical subject matter experts to update technical metadata in the HHS Metadata Repository.*
- *Continued collaborating with HHS source systems to adopt change management automation activities.*
- *Developed procedures for onboarding HHS users to Metadata Manager and Business Glossary.*

3.3. Information Management Program

- Created and hired the Director of Information and Data Management position, reporting to the Chief Data and Analytics Officer.
- On-boarded a new Enterprise Architect to engage the Chief Policy Officer and EDG

stakeholders to develop and prioritize fiscal year 19 implementation activities.

- Provided a demonstration of HHS Data Management tools to the Texas Enterprise Information Management group hosted by the State Data Coordinator.
- Awaiting approval from executive management on the EDG Council and Steering Committee charters.
- *Presented EDG Council and Steering Committee charters to new Chief Policy Officer for approval.*
- *Participated and presented HHS Data Governance activities to the Texas Enterprise Information Management group in quarterly meeting hosted by State Data Coordinator at Department of Information Resources.*
- *As a result of human resources transformation at HHS, the charters for the EDG Council and the EDG Steering Committee have been refactored to reflect the changes in HHS organizational structure.*
- *Developed new draft charters for EDG oversight groups.*
- *Adoption of EDG charters by the HHS Chief Policy Officer (hired in November 2017).*

Section 4. Expenditures

4.1.   Schedule of Expenditures and Actual Expenditures

The table below provides the Schedule of Expenditures (Forecast), Actual Expenditures (Expended), and remaining Balance for the fiscal year 2018-19 biennium.

Rider 216 - Quarterly Reporting - EDG
for the FY2018 3nd Qtr
Expenditures as of April 16, 2018

| | | SFY 2018 | | | | SFY 2019 | | | | |
| | | Expended | | | | | Expended | | | |
Rider 73 Reporting Categories	Forecast	GR	FED	AF	Balance	Forecast	GR	FED	AF	Balance
Enterprise Data Governance										
EDG Contracted Services	$5,099,830	$45,560	$410,036	$455,596	$4,644,234	$4,780,000	$0	$0	$0	$4,780,000
Software	$32,586	$0	$0	$0	$32,586	$34,110	$0	$0	$0	$34,110
Software	$849,142	$16,330	$48,990	$65,320	$783,822	$848,257	$0	$0	$0	$848,257
Hardware	$77,400	$3,673	$11,019	$14,692	$62,708	$77,400	$0	$0	$0	$77,400
Data Center Services	$681,572	$49,575	$148,726	$198,301	$483,271	$680,933	$0	$0	$0	$680,933
Admin	$170	$43	$128	$170	$0	$0	$0	$0	$0	$0
Enterprise Data Governance	**$6,740,700**	**$115,180**	**$618,898**	**$734,079**	**$6,006,621**	**$6,420,700**	**$0**	**$0**	**$0**	**$6,420,700**
Total	**$6,740,700**	**$115,180**	**$618,898**	**$734,079**	**$6,006,621**	**$6,420,700**	**$0**	**$0**	**$0**	**$6,420,700**
Appropriated Funds	$6,740,700	$920,175	$5,532,525	$6,452,700		$6,420,700	$888,175	$5,532,525	$6,420,700	
Variance	$0	$804,995	$4,913,627	$5,718,621		$0	$888,175	$5,532,525	$6,420,700	
NOTES:										
Total Expenditures as of 04/16/2018	$734,079									

4.2. Year-to-Date Expenditures

The table below provides Year-to-Date Budget and Expenditures for Enterprise Data Warehouse (EDW)/EDG Initiatives.

Year-to-Date Budget & Expenditures
Budget and Expenditures as of April 16, 2018

Adjusted Appropriated Funds with MOF

	AY2008	AY2009	AY2010	AY2011	AY2012	AY2013	AY2014	AY2015	AY2016	AY2017	AY2018
General Revenue	$ 5,221,467	$ 5,221,467	$ 352,068	$ 6,538,901	$ 318,257	$ 2,601,088	$ 207,894	$ 10,352,835	$ 4,263,565	$ 6,297,166	$ 920,175
Federal Funds	$ 4,778,533	$ 4,778,533	$ 2,732,777	$ 3,361,130	$ 2,853,399	$ 16,928,199	$ 1,719,440	$ 44,351,851	$ 31,247,878	$ 36,224,116	$ 5,820,525
Total	$ 10,000,000	$ 10,000,000	$ 3,084,845	$ 9,900,031	$ 3,171,656	$ 19,529,287	$ 1,927,334	$ 54,704,686	$ 35,511,443	$ 42,521,282	$ 6,740,700

Expenditures by LBB OOE

Object of Expense	AY2008	AY2009	AY2010	AY2011	AY2012	AY2013	AY2014	AY2015	AY2016	AY2017	AY2018
2001 - Professional Fees and Services	$ 596,176	$ 893,427	$ 2,252,830	$ 1,445,860	$ 3,164,376	$ 1,642,188	$ 1,826,854	$ 4,586,026	$ 5,287,498	$ 2,619,899	$ 656,856
2003 - Consumable Supplies		$ 29		$ 103			$ 136	$ 53			
2007 - Rent - Machine and Other		$ 15									
2009 - Other Operating Expense		$ 12,271	$ 7,736	$ 18,044	$ 7,280	$ 8,051	$ 100,343	$ 14,526,008	$ 104,606	$ 2,545,405	$ 65,490
2004 - Utilities								$ 115	$ 5,341	$ 34,890	$ 11,733
5000 - Capital Expenditures								$ 5,500,000			
Grand Total	$ 596,176	$ 905,727	$ 2,260,581	$ 1,464,007	$ 3,171,657	$ 1,650,238	$ 1,927,333	$ 24,612,202	$ 5,397,445	$ 5,200,193	$ 734,079

Expenditures above do not include non-capital expenditures; nor EDW - NCC

MOF on Expenditures

	AY2008	AY2009	AY2010	AY2011	AY2012	AY2013	AY2014	AY2015	AY2016	AY2017	AY2018
EDG -General Revenue					109,880	57,643	127,769	1,851,120	456,845	789,440	115,180
EDG - Federal Funds					988,918	517,608	1,016,102	7,392,249	3,810,236	4,410,753	618,898
sub-total EDG	-	-	-	-	1,098,798	575,251	1,143,871	9,243,369	4,267,082	5,200,193	734,079
EDW - General Revenue	596,176	684,350	227,241	149,069	208,378	108,588	80,124	3,614,103	121,507	-	-
EDW - Federal Funds	-	221,377	2,033,340	1,314,938	1,864,481	966,399	703,338	11,754,730	1,008,857		
sub-total EDW	596,176	905,727	2,260,581	1,464,007	2,072,859	1,074,987	783,462	15,368,833	1,130,364	-	-
EDW-NCC - General Revenue	-	-	-	-	-	-	-	-	567,602	-	-
EDW-NCC - Federal Funds	-	-	-	-	-	-	-	-	-	-	-
sub-total EDW-NCC	-	-	-	-	-	-	-	-	567,602	-	-
General Revenue	596,176	684,350	227,241	149,069	318,258	166,231	207,893	5,465,223	1,145,954	789,440	115,180
Federal Funds	-	221,377	2,033,340	1,314,938	2,853,399	1,484,007	1,719,440	19,146,979	4,819,093	4,410,753	618,898
Grand Total	596,176	905,727	2,260,581	1,464,007	3,171,657	1,650,238	1,927,333	24,612,202	5,965,047	5,200,193	734,079

Expenditures above do not include non-capital expenditures; EDW - NCC is included

Outstanding Encumbrances

	AY2008	AY2009	AY2010	AY2011	AY2012	AY2013	AY2014	AY2015	AY2016	AY2017	AY2018
General Revenue	-	-	-	-	-	-	-	-	-	-	$ 162,554
Federal Funds	-	-	-	-	-	-	-	-	-	-	$ 487,662
Total	-	-	-	-	-	-	-	-	-	-	$ 650,216

Informational Dollars (non-capital)

	AY2008	AY2009	AY2010	AY2011	AY2012	AY2013	AY2014	AY2015	AY2016	AY2017	AY2018
General Revenue	-	-	-	-	-	-	-	$ 28,501	$ 18,914	411	-
Federal Funds	-	-	-	-	-	-	-	$ 256,513	$ 169,901	411	-
Total	-	-	-	-	-	-	-	$ 285,014	$ 188,815	822	-

Section 5. Status

Project Milestones	Planned Start Date mm/dd/yyyy	Actual Start Date mm/dd/yyyy	Planned Finish Date mm/dd/yyyy	Actual Finish Date mm/dd/yyyy	Percentage Complete
EDG Implementation Phase:	04/06/2015	08/20/2015	01/01/2022		38%
Medicaid Focused Enterprise Master Data Management System:					
• Data and Information Management Phase 1 – EMDM Member/Provider Select Systems With Limited Capabilities	04/06/2015	08/20/2015	08/31/2016	08/31/2016	100%
• Data Quality and Data Standards Phase 1 – Metric Definition, Implement Solution and Profiling	04/06/2015	08/20/2015	08/31/2016	08/31/2016	100%
• Data and Information Management Phases 2-4	05/01/2016	09/22/2016	12/01/2021		24%
• Data Quality and Data Standards Phases 2-4	07/01/2017	09/22/2016	09/01/2021		24%
Metadata Repository:					
• Metadata Management Phase 1 – Collect and Publish Metadata for Various Systems	04/06/2015	08/20/2015	02/28/2017	02/28/2017	100%
• Metadata Management Phase 2 – Implement Change Control Process	05/04/2015	10/15/2015	02/28/2017	02/28/2017	100%
• Metadata Management Phase 3	04/01/2017	03/01/2017	11/30/2018		42%
• Reference Data Management Phase 1	01/01/2018		11/30/2019		0%
• Reference Data Management Phase 2	09/01/2019		01/01/2022		0%
Information Management Program:					
• Data Architecture Phase 1	01/01/2017		11/01/2018		0%
• Data and Information Control Phase 1	01/01/2018		07/30/2019		0%
• Data Architecture Phase 2	12/01/2018		11/01/2021		0%
• Data and Information Control Phase 2	02/01/2019		01/01/2022		0%

Section 6. Glossary

Term / Acronym	Definition
CARE	Client Assignment and Registration System
CMS	Centers for Medicare and Medicaid Services
DAR	Data Asset Repository
DBITS	Deliverables Based Information Technology Services
DFPS	Department of Family and Protective Services
DIC	Data and Information Controls
DIM	Data and Information Management
DQS	Data Quality and Standards
EDG	Enterprise Data Governance
EDW	Enterprise Data Warehouse
EMDM	Enterprise Master Data Management
FFY	Federal Fiscal Year
FY	Fiscal Year
HHS	Health and Human Services
HHSC	Health and Human Services Commission
IAPD	Implementation Advance Planning Document
IAPD-U	Implementation Advance Planning Document Update (Federal)
ICD	International Classification of Diseases
IT	Information Technology
LBB	Legislative Budget Board
MDM	Master Data Management
MITA	Medicaid Information Technology and Architecture
MRDM	Metadata and Reference Data Management
ODS	Operational Data Store
PPS	Premiums Payable System
RDM	Reference Data Management
TIERS	Texas Integrated Eligibility Redesign System
VDP	Vendor Drug Program