

RFP 12-18
Appendix D
PA Department of Human Services
Enterprise Data Warehouse (EDW)
Application Suite
High Level System Narrative

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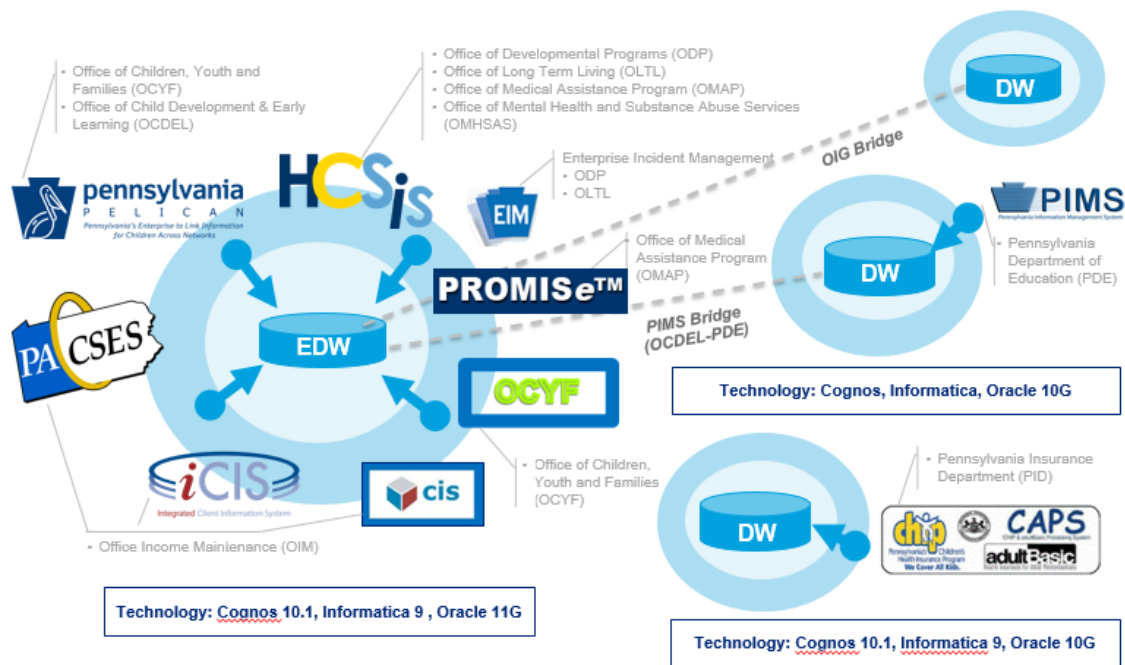
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1 Enterprise Data Warehouse (EDW) Business Overview

1.1 Introduction

The Enterprise Data Warehouse (EDW) spans across multiple systems within the Commonwealth of Pennsylvania’s Department of Human Services (DHS) to provide a consolidated view of enterprise data, optimized reporting, and enhanced data analysis. EDW’s design facilitates the storage and querying of information across various program offices in order to enrich the reporting capabilities for EDW data to a technically diverse user population. The data warehouse consists of a subject-oriented, time-variant, and non-volatile collection of integrated data. The Cognos BI tool, which pulls data from the EDW, is accessed through a web-enabled interface designed to optimize the retrieval of large volumes of data.

The following figure illustrates the various application suites and transactional databases within the Commonwealth that contribute to the EDW. Data is extracted, transformed and loaded from each of the below transactional systems into the EDW.



As highlighted in the figure below, ETL (Extract, Transform, and Load) is the process by which data is extracted from source transactional systems and loaded into the EDW. Data transformation is the process by which customized logic, calculations, and filters are applied on the extracted data in order to ensure that the data in the EDW meets defined reporting requirements.

For the DHS EDW, *Informatica ETL* mappings/workflows are used to extract, transform and load data into the EDW and Operational Data Store (ODS). The data extraction processes occur at the end of each month for data stored in EDW; the loading strategy depends on reporting requirements and varies across subject areas. On the other hand, ODS supports near real-time reporting. A snapshot of the applications' data is taken on a nightly basis and stored into the ODS database.

Cognos is used as the business intelligence (BI) tool for accessing the data stored and providing insight into data trends. Users with the required security privileges have the ability to access canned reports, OLAP cubes, dashboards, and ad-hoc reporting through the Cognos portal. The following table illustrates the distinctions between the reporting options available within Cognos:

Reporting Options	Description
Dashboards	A Dashboard is a single page reporting object that typically contains a variety of charts and graphs related to the most important information, parameters and trends related to organizational objectives. Dashboards are often used to track or monitor related key performance indicators and other critical business metrics on the same report.
Online Analytical Processing (OLAP) Cubes	A Multi-dimensional OLAP (cube) is a subset of data organized by dimensions and measures for the purpose of analysis. Typically cubes are used to view aggregate counts of information based on filter parameters and have drill-down report capabilities that allow manipulation and analysis by the end user.
Canned Reports	Canned Reports are pre-built, formatted reports that run on demand to allow users to view critical business metrics. Typically, Canned Reports require users to specify prompt parameters prior to running the report (ex: Fiscal Year or Target County).

Ad Hoc Reporting	Ad Hoc or Self-Service Reports are developed using a business query tool that provides users with the ability to drag and drop a series of data elements to create and run queries. Data elements are organized in logical subject areas consistent with the application to provide intuitive navigation, allowing the user to answer key business questions using custom logic, calculations, filters, and thousands of individual data elements.
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EDW houses data related to a wide variety of DHS services and programs including:

- Child Welfare
- Subsidized Child Care
- Early Learning and Early Intervention
- Certification and Licensing
- Child Support Enforcement
- Temporary Assistance for Needy Families (TANF)
- Supplemental Nutritional Assistance Program (SNAP)
- Low-Income Heating and Energy Assistance Program (LIHEAP)

Along with the program office data, EDW also houses data from key systems used by entities external to DHS including PROMISE™ which facilitates claims processing and management information for the provider community. Additionally EDW exchanges data between other departments like the Pennsylvania Department of Education (PDE) and Pennsylvania Insurance Department (PID).

DHS program offices rely on EDW data to meet both internal and external reporting needs.

Internal Reporting Needs	External Reporting Needs
<ul style="list-style-type: none"> • Day-to-day operational reporting • Program performance analysis • Trending/forecasting • Budget tracking • Fraud and abuse • Audit and financial reporting 	<ul style="list-style-type: none"> • Meeting federal reporting requirements • Need to know data requests from public and other government agencies • Program integrity and data transparency needs

Information about individuals and providers gathered from the various program offices is linked in EDW through the Master Client Index (MCI) and the Master Provider Index (MPI). The specific data subject areas are available in the **Appendix**.

1.2 Business Drivers

The EDW was developed because stakeholders needed the ability to support data analysis across an array of DHS programs and program offices to make fact based, data driven decisions related to critical business metrics. EDW provides a cohesive data

repository which allows the web application, Cognos, to display the data through a series of reports, OLAP cubes, etc. The EDW is a web-enabled system that improves analytics and reporting capabilities for users and provides a central repository of information. Sophisticated reporting capabilities were needed to accurately capture the trends and outcomes of programs statewide. Given the large number of program offices that fall under DHS, there was a need to consolidate data from different offices into overall reporting metrics. A common platform was required to cut down on system maintenance and improve operational efficiency; monitoring and troubleshooting is greatly simplified with one data repository. The push towards making a web enabled reporting solution came from the desire for enhanced accessibility of information to a broad, technically diverse user population.

1.3 Business Outcomes

Efficiency:

The implementation of EDW has increased reporting efficiency across program offices by providing a consolidated, central repository for data. Reports are available in a timely manner with cycle time reduction and improved efficiency to allow end users to search for and provide answers far more quickly. IT is also able to implement reporting system enhancements more effectively.

Flexibility:

EDW gives users more flexibility in how data is viewed and analyzed. Users have the ability to view data in numerous ways to highlight certain metrics or trends. They can analyze data at a summary level and then prepare customized, drilled down reports to provide greater detail on initial data findings. In addition, through ad hoc/ self-service reporting stakeholders have the ability to efficiently create their own business queries and customized reports to analyze an array of business metrics.

Quality:

In addition to efficiency and flexibility, EDW also enhances the quality of data and reports. A web-enabled reporting solution eliminates many destabilization points introduced by standard client/server solutions. Standardization within and across program offices provides a framework for common definitions and reporting measures. Simplified user accessibility results in the deployment of meaningful, accurate data to executives, mid-level management, and front-line staff.

1.4 Program Offices

The following program offices contribute data that is stored in EDW.

Office	Description
Office of Child Development and Early Learning (OCDEL)	OCDEL focuses on creating opportunities for the Commonwealth's youngest children to develop and learn to their fullest potential. The office provides high quality early childhood programs and effective family support programs to address challenges that affect school readiness and academic success.

Office of Child, Youth, and Families (OCYF)	OCYF supports quality services and best practices designed to ensure the safety, permanency and well-being of Pennsylvania’s children, youth and families. OCYF serves Pennsylvania’s counties through its four regional offices - Southeast, Central, Northeast, and Western – to provide consultation and support along with licensing and supervision of county agencies.
Office of Mental Health and Substance Abuse Services (OMHSAS)	OMHSAS implements services and policies that support recovery and resiliency in the adult behavioral health system and assures that behavioral health services accommodate the unique needs of older adults. OMHSAS ensures that every individual served by the Mental Health and Substance Abuse Service system has the opportunity for growth, recovery and inclusion in their community; has access to culturally competent services and supports of their choice; and enjoys a quality of life that includes family members and friends.
Office of Developmental Programs- Bureau of Autism Services (ODP-BAS)	ODP-BAS develops and manages services to enhance the quality of life and independence of Pennsylvanians living with Autism Spectrum Disorders and to support their families and caregivers. ODP-BAS carries out its mission through development and direct management of services within BAS or by providing mentoring and training to other divisions within DHS.
Office of Developmental Programs – Intellectual Disabilities (ODP-ID)	ODP-ID has the mission to provide individuals with intellectual disabilities and their families the services they require and the opportunity to make real choices about living, working and options for social activities to enable them to live in and participate fully in the life of their communities.
Office of Long Term Living (OLTL)	OLTL’s mission is to support individuals in the aging and physically disabled populations. The office is responsible for the administration and oversight of several programs and waivers aimed at supporting consumers in a home and community based setting.
Office of Medical Assistance Programs (OMAP)	OMAP administers the joint state/federal Medical Assistance program that purchases health care for Pennsylvania residents. OMAP utilizes HCSIS to support the Michael Dallas Waiver which provides services to eligible persons of any age who are technology-dependent, meaning that they are dependent on technology to replace a vital bodily function or to sustain life. Currently OMAP providers are billing claims through PROMISe™ while the OMAP Central Office is entering and maintaining the OMAP consumer information in HCSIS.

<p>Office of Income Maintenance (OIM)</p>	<p>OIM is responsible for the oversight of programs for families unable to afford basic services. These programs include the Temporary Assistance for Needy Families cash assistance program (TANF), the Medical Assistance (Medicaid), the Supplemental Nutrition Assistance Program (SNAP), which is the name for the food stamp program, home heating assistance, known formally as the LIHEAP program, employment and training services, and child support.</p>
<p>Office of CHIP (OOC)</p>	<p>OOC is responsible for administering the Children's Health Insurance Program (CHIP) – Pennsylvania's program to provide health insurance to uninsured children and teens who are not eligible for or enrolled in Medical Assistance.</p>

2 EDW Subsystems

The EDW spans multiple systems and programs, providing analytical and operational reporting for end users. The EDW includes a series of distinct data marts tailored for the HCIS, PACSES, PELICAN, and CIS application suites. Data from these applications can be viewed through a series of application specific reports as well as through a collective Executive Dashboard that provides summary information across program offices.

2.1 HCSIS Data Warehouse

As part of DHS EDW, the HCSIS DW serves as a trend analysis and reporting solution used by more than 800 users across three different program offices (ODP, OLTL and OCDEL). The complete Business Intelligence BI/DW solution consists of program specific data within the DHS EDW and an ODS. The reporting functionality in the table below allows HCSIS stakeholders to report on a series of Key Performance Indicators (KPIs) in the following key areas: Individual's Support Plan information, Budget Details, Support Coordination/ Case Management, Service Details, Outcomes Analysis, etc.

	OLAP CUBES/ Drill-through Reports	Canned Reports	Ad-Hoc Reporting	Dashboards
<i>HCSIS</i>	X	X	X	X
<i>Enterprise Incident Management (EIM)</i>	-	X	X	-

Program office users for EIM have visibility to help them monitor their incidents and complaints, make more informed policy decisions and meet Centers for Medicare & Medicaid Services (CMS) requirements. Additionally, they can build their own ad-hoc reports using any of the data elements that are captured in EIM's DW. The EDW is refreshed on a regular basis from the EIM operational database to support Ad Hoc Reporting and the Incident/ Complaint Report, while the Incident/Complaint by Consumer and Incident/Complaint by Provider report are sourced directly from EIM operational database.

The HCSIS DW is accessed by multiple program offices across DHS including ODP, OLTL, OMHSAS, OCDEL, and OCYF. A breakdown of reporting capabilities available to each office for the various subject area modules within HCSIS can be found in the **Appendix**.

2.2 PELICAN Data Warehouse

The PELICAN Business Intelligence BI/DW solution consists of program specific data stored within the EDW and ODS that allow OCDEL and OCYF users to perform

longitudinal and ad hoc analysis of data. The creation of the PELICAN DW stemmed from a need to longitudinally study the performance of children, providers, and staff who are part of the child care and early programs and to identify risks factors that affect the success and adoption of various programs. Comprehensive and accessible data provides the means to measure program outcomes and to design prevention strategies that mitigate challenges surrounding school readiness and academic success in child care.

Currently the PELICAN data warehouse addresses over 100 specifically requested business questions that focus on subsidized child care, provider licensing, PA Pre-K Counts program, and the Early Learning Network. PELICAN data in the ODS allows OCDEL and OCYF to create their own reports and perform longitudinal analysis across early learning programs. Additionally, the PELICAN executive dashboard allows OCDEL and OCYF executives to monitor key performance metrics related to service and funding for subsidized child care on a daily basis and create queries to analyze and monitor early learning data in an ad hoc manner. The data within PELICAN DW also provides the program offices with the ability monitor the financial and administrative support system that has been established to improve early childhood learning and child care services.

The following table highlights the reporting functionality currently available across the various PELICAN sub-systems.

	OLAP CUBES/ Drill-through Reports	Canned Reports	Ad-Hoc Reporting	Dashboards
<i>Early Learning Network</i>	X	-	X	-
<i>PA Pre-K Counts</i>	X	X	-	-
<i>Child Care Works</i>	X	X	-	X
<i>Certification and Licensing</i>	X	X	X	-

The CWIS Ad Hoc Package provides the ability to create ad hoc queries using data elements related to the following modules: Referral Intake, Investigation and Assessment, Investigation Review, Appeals, and Clearances. Data is refreshed on a daily basis from the CWIS application system. The Management Dashboard helps users determine the effectiveness of the state-wide child welfare operations related to referrals by displaying key performance indicators across the various OCYF business functions.

	OLAP CUBES/ Drill-through Reports	Canned Reports	Ad-Hoc Reporting	Dashboards
<i>Child Welfare Information Solution</i>	X	X	X	X

The PELICAN DW is accessed by OCDEL and OCYF. A breakdown of reporting capabilities available to each office for the various subject area modules within PELICAN can be found in the **Appendix**.

2.3 PACSES Data Warehouse

The PACSES Data Warehouse houses Child Support data and provides valuable interactive business intelligence to a broad group of stakeholders including county-level case workers, program office policy makers and executives. Initially the warehouse stored data related to three key subject areas: case information, financial obligation data, and collections information. Subsequently, the addition of new subject areas such as support orders, employment history, wage attachments, member demographics, federal reporting functionality, Self-Assessment reports, new hire performance reports, and driver's license suspension program reports expanded the information available to users.

Currently the data warehouse web enabled interface supports users in the 67 counties statewide who rely on drill through reporting to access detailed data in the warehouse. The reporting functionality available for the PACSES Data Warehouse is shown in the following table:

	OLAP CUBES/ Drill-through Reports	Canned Reports	Ad-Hoc Reporting	Executive Dashboard
<i>PACSES</i>	X	X	X	X

Reporting provides broad analysis and ad-hoc querying, data analysis across departments / business units to support decision-making and program evaluation, and a consistent view of data across the enterprise. An Interactive UI allows users to create personalized reports, filter, and sort and add/remove data elements and change the layout of existing DW reports that can be saved for future use. The Data Warehouse Cubes are organized into three subject areas: General Information, Enforcement Remedies, and Federal Reporting.

Child Support data loaded from PACSES into the EDW is accessed by BCSE within OIM. A breakdown of reporting capabilities available for the various subject area modules within PACSES can be found in the **Appendix**.

2.4 CIS Data Warehouse

The CIS DW, formerly known as the iCIS DW, is a web-enabled user interface that provides 800 users throughout the Commonwealth's 67 counties with access to TANF and welfare data. County cash assistance directors, executive directors, area managers, and program deputy secretaries utilize the BI/DW solution for reporting, analysis, and monitoring of welfare reform related programs and financial data. Analytics provides the insights to drive strategic decision by allowing users to see critical program metrics such as enrollments and expenditures across agencies. They can also track compliance with key federal metrics such as Work Participation and Food Benefits error rates. The following table shows the reporting functionality available for CIS:

	OLAP CUBES/ Drill-through Reports	Canned Reports	Ad-Hoc Reporting	Executive Dashboard
<i>CIS</i>	X	X	X	X

A series of multidimensional cubes within the CIS DW are used by the Office of Income Maintenance (OIM) to provide reporting on benefits, budgets, and recipient information, as well as provide information on employment and training programs, and eligibility reopen statistics. OIM reports include the employment and training report, a series of exceptions reports, and individuals drill through reports that include name and address data.

Eligibility data loaded into EDW from the CIS and eCIS components of the CIS suite of tools is accessed by OIM. A breakdown of reporting capabilities available for the various subject area modules can be found in the **Appendix**.

3 EDW Documentation References

Note: there is not a singular location that provides access to all of the current system and work order documentation for all stakeholders involved in the 16-09 contract (BIS/Program Area, Deloitte, Lot 1-5 vendors). As such, the table below may show multiple documentation locations and the stakeholder(s) that have access to those locations.

Asset	Stakeholder	Location	Tool Required for Access
Work Order Artifacts	BIS / Program Area	Please contact the DHS PMO for artifact location	DocuShare
	Deloitte	https://t2teams.deloitte.com/sites/PA_DPW_PMO/IMSS_SDM/default.aspx	SharePoint
UML Design Artifacts	BIS / Program Area / Deloitte / Lot 1-5	ea_EKMS_IMSS	Enterprise Architect
Data Models / Data Dictionaries	BIS / ITSS		ErWin
Requirements	BIS / Deloitte / Lot 1-5	EKMS_IMSS (DPW_Enterprise), Team Queries, Planning and Tracking, Open Requirements	Visual Studio
Requirements Traceability	BIS / Deloitte / Lot 1-5	EKMS_IMSS (DPW_Enterprise), Reports, Deliverables, Requirements Traceability Matrix	Visual Studio
Integration Test Scenarios	BIS / Deloitte / Lot 1-5	dpwtfsc.dpw.state.pa.us\EKMS_IMSS	MTM
System Test Scenarios	BIS / Deloitte / Lot 1-5	dpwtfsc.dpw.state.pa.us\EKMS_IMSS	MTM
UAT Scenarios	BIS / Deloitte / Lot 1-5	dpwtfsc.dpw.state.pa.us\EKMS_IMSS	MTM
Architecture Diagrams	BIS	http://docushare.dpw.lcl/docushare/dsweb/View/Collection-36542	DocuShare

4 EDW Work Orders Implemented

The following table represents work orders implemented for the EDW since the beginning of the 16-09 contract that were reporting and analytics only in nature.

Work Order #	Work Order Name	Work Order Description	Implementation Date
562	CAPS Data Warehouse Assessment & Migration Strategy	As a part of this initiative, an assessment of the CAPS Data Warehouse environment was conducted to develop a strategy to migrate it to the DHS EDW environment and upgrade the Cognos and the ETL software to DHS standards. Additionally, an analysis of existing reports and cubes was conducted to determine report usage to allow only the ones used by the program office to be included in the migration scope. Finally, a temporary solution to move the current CAPS DW off of the aging servers was identified to mitigate risks to PID until the entire migration was completed.	6/2014
6038	EI Reporting Enhancements	This initiative resulted in increased data quality and integrity by achieving compliance with reporting requirements through enhanced EI Analytics Ad Hoc Package, Cubes, Reports, and Dashboards. Additionally, it reduced volume of data query requests. OCDEL staff are now able to extract data to meet majority of data query needs for both internal and external data requests.	8/2014
6046	Income Eligibility Data in the EDW [CIS Funding]	This initiative provided the ability to report on income data out of the EDW so that program office users can report on raw, summary, and a combination of both types of data to answer critical business questions. Raw data is data reported for individuals which includes income, expenses, and deductions. Summary data includes household (budget) data used for eligibility	10/2014

		determination for MA, Cash, SNAP, and LIHEAP programs.	
568	CAPS Enhanced Data Warehouse Reporting	<p>The objective of this initiative was to help PID automate the delivery of key program metrics required by the State and Federal Government, and those needed for ongoing stability of the Children's Health Insurance Program (CHIP). The following reports were identified for automation and enhancement:</p> <ul style="list-style-type: none"> • 3 Quarterly CMS (Centers for Medicare and Medicaid Services) Reports • 13 Monthly Reports for the PA Commonwealth • 5 Monthly Reports for the CHIP Health Insurance Contractors • 6 Monthly Reports for the CHIP Program Office 	6/2015
571	CAPS Data Warehouse ICD-10 Implementation	<p>The objective of this initiative was to help PID comply with the Health Insurance Portability and Accountability Act (HIPAA) mandated regulation of adopting and replacing the currently used ICD-9 (International Classification of Disease) code sets with the ICD-10 code sets by October 1, 2015. The CAPS data warehouse was enhanced to allow PID to be able to interpret ICD-10 codes sent by health insurance contractors.</p>	8/2015
561	CAPS MSIS/T-MSIS Assessment	<p>This initiative was requested by PID in order to comply with additional enhancements made to the existing Medicaid and Statistical Information System (MSIS) as mandated by CMS. The initiative included the following three key elements:</p> <p>Element 1 – Assessment of CMS mandated requirements</p> <p>Element 2 – Designing, developing, and testing a new T-MSIS (Transformative MSIS) reporting</p>	9/2015

		<p>solution that consolidated data across core program areas into data files</p> <p>Element 3 – Sending the T-MSIS data files to CMS on a monthly basis</p>	
6078	DHS Interactive Data Visualization – Phase 1	<p>DHS requested a new visualization solution to report and track a set of strategic performance indicators across the DHS Programs. At a high level the DHS Interactive solution will contain a set of visualizations to provide stakeholders the ability to view and analyze information across the Secretary's five core strategic priorities:</p> <ul style="list-style-type: none"> • Improve Customer Service • Serve more People in the Community • Focus on Employment • Modernize Program Integrity • Increase Access to High Quality Services <p>The strategic priorities included as part of Phase 1 were:</p> <ul style="list-style-type: none"> • Improve Customer Service • Focus on Employment • Increase Access to High Quality Services 	8/2016
1070	CIS – OIM: MAPPER DAP	<p>As part of the MAPPER DAP initiative, stakeholders have requested the need for new EDW reporting capabilities to accurately monitor operational activities and overall program performance. These capabilities will provide stakeholders with additional insight into their data to answer a variety of key business questions related to applications that flow through the DAP program and activities that are pending for DAP Advocates. The following reports will be included in this initiative:</p> <ul style="list-style-type: none"> • Referral Summary Report to provide the Executive staff with 	1070

		<p>visibility into the current state of the DAP program</p> <ul style="list-style-type: none"> • DAP Advocate Case Management Report – SSI to help prioritize Advocates’ SSI caseloads • DAP Advocate Case Management Report – SSDI to help prioritize Advocates’ SSDI caseloads • DAP Advocate Case Management Report – MRT to help prioritize Advocate’s MRT caseloads • Referrals Received and Disposition by County Report to track the number of new referrals coming in vs. those that are being processed to help monitor throughput • Clients by Legal Representation Report to monitor the types of legal representation that individuals are leveraging to help them through the SSI/SSDI appeals process. <p>These reporting capabilities will be delivered through a series of canned reports, of which the details are included as part of this document.</p>	
1027	OIM: MA Recidivism	<p>The overarching goal for the Medical Assistance (MA) Recidivism initiative is to provide MA benefits to needy individuals released from incarceration with expedited medical enrollment. These reports will help Office of Income Maintenance (OIM) to track individuals whose Medical Assistance benefits must be open due to release from Incarceration and individuals whose benefits are suspended upon confinement.</p> <p>To achieve this, two Cognos canned reports will be created that will provide</p>	1027

		<p>detailed application level information for individuals processed through Auto Suspension, which is triggered by JNET or other incarceration data sources data exchange hit, and Incarceration Release Automation triggered by DOC COMPASS reporting. The two Cognos canned reports are:</p> <p>Auto-Suspension Automation Report Incarceration Release Automation Report</p> <p>The data for these Cognos canned reports will be sourced from COMPASS and eCIS application tables using Informatica ETL tool.</p>	
1079	Workload Dashboards	<p>DHS requested four new dashboard visualizations to provide headquarter stakeholders with deeper insight into office workloads, staff performance and throughput, and work item composition details. In addition, DHS also requested the implementation of a new WLD star schema to support SQL query analysis and lay the groundwork for future workload analytics.</p> <p>The following dashboards were created as part of this initiative:</p> <ul style="list-style-type: none"> • Office Dashboard • Staff Dashboard • Work Item - County Dashboard <p>Work Item - District Dashboard</p>	1079
0613	CAPS Cost Savings Dashboard	<p>CAPS stakeholders requested the need for new reporting capabilities to track, order to analyze, track and report on potential cost savings as result of a new termination code. These capabilities provide stakeholders with additional insight into their data to answer a variety of business questions related to the use of the new termination code, "Whereabouts Unknown". The</p>	0613

		<p>following dashboard and reports were created for this initiative:</p> <ol style="list-style-type: none"> 1. CAPS Cost Savings Dashboard 2. CAPS Cost Savings Dashboard- Cross-tab Report <p>CAPS Cost Savings Dashboard- Drill-Through Report</p>	
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The following table represents work orders implemented for the EDW since the beginning of the 16-09 contract that were application driven initiatives with reporting and analytics components.

Work Order #	Work Order Name	Work Order Description	Implementation Date
0555	Head Start Grants Management Phase 2	<p>The following reporting impacts were identified as a part of this initiative:</p> <ul style="list-style-type: none"> • Modifications to the existing PELICAN Ad Hoc Reporting package to enable near real-time reporting on critical Head Start information • Modifications to the existing PELICAN Data Warehouse to restrict Head Start information from being displayed on existing PA Pre-K Counts cubes and reports 	8/2013
6050	Healthy PA	<p>The reporting and analytics capabilities implemented as a part of this initiative allowed DHS to track and analyze key metrics needed to answer critical business questions, monitor and track Medicaid program enrollments, and gain transparency into program operations. A series of reporting objects were developed to provide DHS stakeholders the additional visibility and the ability to monitor program accuracy, effectiveness, and expenditures, which would not have been possible through the legacy integrated eligibility system.</p>	11/2014

2010	Pre-K, Head Start Enhancements to Summer Kindergarten Readiness	The purpose of this initiative was to provide OCDEL with enhanced flexibility in effectively reporting and tracking the financial and evaluation needs of early childhood programs, such as the Summer Kindergarten Readiness Program (SKRP). This effort supported operational reporting needs by updating current SQL Server Reporting Services (SSRS) reports to accommodate changes related to flexible slot categories and PRI, and provided advanced reporting capabilities through updates to the existing data warehouse ad hoc reporting package.	2/2015
3003	ICD-10 Diagnosis Codes	The purpose of this initiative was to allow HCSIS to comply with federal requirements by supporting the use of ICD-10-CM diagnosis codes. As the HCSIS system was upgraded to support these codes, existing EDW reporting was also enhanced to be able to report on the new ICD-10 codes while maintaining the historical ICD-9 codes to report on historical data.	10/2015
3007	ODP-EIM	ODP-ID is responsible for ensuring the health and safety of individuals who utilize intellectual disability services. ODP-ID currently uses Enterprise Incident Management (EIM) functionality in HCSIS to capture incidents involving individuals receiving ODP-ID services and their providers. This initiative was created to address some EIM limitations while also better aligning incident reporting with current business processes. As a part of this effort, reporting capabilities within EIM and the EDW were provided to allow stakeholders with the ability to retrieve information needed to effectively analyze incident data for monitoring of programs and for system improvement.	11/2015
1014	HealthChoices Expansion	One of the key objectives of this initiative was to transition from the Healthy PA program into a more	5/2015

		conventional form of Medicaid Expansion. As part of this transition, a number of reporting capabilities that were implemented as a part of Healthy PA would no longer be applicable under the HealthChoices program, resulting in the need to retire certain reporting objects. Through these activities the Reporting and Analytics thread ensured that HealthChoices stakeholders continued to have access to data for answering critical business questions, the ability to monitor and track key performance indicators, and transparency into health care operations.	
1021	FMAP Reporting	This initiative introduced system modifications to existing Medicaid eligibility rules and category program status codes along with target types to appropriately differentiate populations in support of accurate Federal Medical Assistance Percentage (FMAP) claiming. Updates were made to EDW reference tables to include new category program status codes to support FMAP related reporting.	2/2016
1020	IRS MEC 1095-B	This initiative was requested by DHS and PID to be able to comply with the IRS mandated law that health care insurers must provide individuals with a 1095-B health insurance tax form which reports that the type of coverage that an individual has is compliant with the federal minimum essential coverage (MEC) standards, lists the individuals in the household that are covered, and provides the period of coverage for the applicable tax year. The mandate also required health insurers to provide the IRS with information for these individuals every year for the previous tax year. The EDW staging area was leveraged as part of the process design to consolidate data for both CHIP and MA households to support 1095-B form generation and the recurring EDW staging load processes were expanded	3/2016

		to include new data elements such as Domestic Violence information, Emergency Medical Assistance, and 1095-B form correction request information.	
5009	E-Services Enhancements	E-Services enables customers and attorneys to submit a variety of child support service requests through the Child Support Website (CSWS) at their convenience. E-Services collects information from the requestor which is used to generate PACSES forms. This initiative was created to further improve existing E-Services functionality, including existing data warehouse E-Services related reports.	4/2016
1035	eCIS IV-B Improvement and AP Processing	This initiative was requested by DHS to enhance application tracking to record the application received date by program in order to monitor and report on application days assigned and avoid overstatement of the days outstanding for each application and program. As a part of this effort, the EDW was updated to include the Program Tracking Date for current and ad hoc reporting purposes, and 21 existing reports were enhanced to capture program level application durations.	6/2016
1027	MA Recidivism Phase 3	As part of this initiative additional functionality is being implemented in eCIS to automate the suspension and case open process for MA benefits when an individual enters or exits Incarceration. From an EDW perspective two new Cognos canned reports are being implemented to track auto suspension and auto case open details related to incarceration.	03/2018
1071	MAPPER	As part of this initiative legacy MAPPER functionality related to SSI/SSDI applications and appeals are being transitioned to eCIS. From an EDW perspective 5 new canned reports and drill through are being created to monitor details related to	03/2018

		SSI, SSDI, Referrals/ Dispositions, and Appeals details.	
1067	Social Security Removal Number Initiative	As a part of this initiative, SSN based Medicare Claim identifier or Health Insurance Claim Number (HICN) will be removed from the Medicare cards and replaced with an Medicare Beneficiary Identifier (MBI). The impact to the EDW is that the current extract that brings the HICN into the EDW will need to be expanded to also bring in the MBI and MBI Verification Code.	03/2018
5010	PIM Enhancements	This initiative incorporates a collection of high priority enhancements, including enhancements to existing data warehouse reports, into one initiative aimed at further improving case management performance.	12/2016
5011	JobGateway Integration	This initiative focuses on improving collections and outcomes for cases associated with unemployed non-custodial parents. JobGateway, a public facing website that allows individuals to search and apply for jobs from employers registered with Department of Labor and Industry will be integrated with Child Support Website (CSWS) in order to provide non-custodial parents with job alerts and a link to their JobGateway job matches. As a part of this effort, new data warehouse reports will be created to report on counts related to actions on cases with a work search order.	02/2018
2034	PELICAN Enhancements for ELRC	As part of this initiative, OCDEL is transitioning their current CCIS based operating model to ELRCs. In order to track ELRC related details enhancements are being implemented for numerous cubes, reports, and dashboards. Also, additional data elements are being added to the PELICAN ad hoc package.	
2029	CCW Phase 3	As part of this initiative OCDEL is implementing new FPIG - federal poverty income guidelines into CCW	11/2018

		as well as additional financial tracking functionality. From an EDW perspective the scope for this initiative includes enhancing existing Keystone STARS cubes and reports to provide updated FPIG tracking.	
4014	CWIS Phase 1.3	As a part of this initiative, The Office of Children, Youth and Families is looking to implement enhancements to the Child Welfare Information Solution (CWIS). These modifications help improve worker efficiencies across the ChildLine Hotline, Quality Assurance Unit, Clearance Unit, Appeals Unit, and the Legal and Policy divisions at OCYF as well as regional offices and the counties children and youth agencies. From an EDW perspective CWIS Ad Hoc Package and a series of existing reports/dashboards will be enhanced.	On going
3035	Mortality Review Functionality	As part of this initiative functionality is being implemented in EIM to allow ODP stakeholders the ability to track/ conduct mortality reviews and generate death incident reports. From an EDW perspective a series of additional mortality related data elements are being added into the EIM ad hoc package.	06/2018
3029	OMHSAS EIM	This initiative aims to transition OMHSAS Incident Management functionality from HCSIS to Enterprise Incident Management (EIM) and expand the repository for incidents and complaints. From an EDW perspective modifications are required to the EIM ad hoc package to load OMHSAS specific information.	03/2018
3034	ODP Community Living Waiver	As part of this initiative ODP is implementing a new Community Living Waiver, with the goal being to reduce the waiting list and provide services to an increased number of individuals. In order to analyze Community Waiver related details modifications are being made to the HCSIS ad hoc package and several existing reports/ cubes.	01/2018

3031	ODP Waiver Renewal Support FY16-17 - Phase 2	As part of this initiative, ODP has identified a variety of policy and business process changes, some of which need to be supported in the Home and Community Services Information System (HCSIS), Enterprise Incident Management (EIM) and Enterprise Data Warehouse (EDW). Phase 2 of this initiative accommodates changes in HCSIS and EDW that support ODP in making additional system modifications to implement changes as per the Consolidated and P/FDS Waiver renewals. EDW Reporting scope includes implementing a new load process to consume the SIS Assessment data from AAIDD. In addition modifications will be made to the HCSIS ad hoc package to capture SIS related details.	01/2018
606	MPI Addition to Provider File	As part of this initiative, The Office of CHIP (OOC) has requested that MCOs start providing MPI numbers for each location of a provider. From an EDW perspective this new information will be displayed in cubes and reports. It will also need to extract this information and provide it to OOC in a way that a report can be generated of CHIP Managed Care Organizations (MCOs) and their providers that have an MPI number.	05/2018
	PASSHE Single Sign On and Licensing	As part of this initiative we enabled SSO for each of the existing PASSHE Qlik Dashboards. Stakeholders now have the ability to connect directly to their Qlik dashboards upon authenticating into the PASSHE sharepoint site. In addition, this work order also includes licensing/maintenance for Clearlight.	06/2018
3042	PUNS Updates	As a part of the PUNS Update initiative, ODP-ID is seeking to update language in the PUNS tool to reflect current ODP-ID policies, introduce efficiencies in PUNS functionality in HCSIS, and enhance	On Going

		reporting capabilities in HCSIS and the Enterprise Data Warehouse (EDW).	
3040	EI Enhancements 18-19 Phase 3	The EI Enhancements 18-19 Phase 3 (Change Request) initiative includes a group of enhancements collectively prioritized within the areas of Intake/Enrollment, Eligibility, Plan, Provider (PELICAN-CLS), and Supports Coordination. Users of both the Infant/Toddler (I/T) and Preschool (PS) OCDEL programs will benefit from improved worker efficiency and increased data accuracy.	On Going

5 Appendix

5.1 EDW Data by Subject Area

The following table shows the types of subject information housed in EDW for various applications and their respective programs offices.

Application (Program Offices)	EDW Subject Areas
EIM (ODP,OLTL)	Incidents
CIS/ eCIS (OIM)	Case, Benefits, LIHEAP, Budget
HCSIS	Consumer Demographics, Incident Mgmt, AE Oversight, Eligibility Determination, Incident Investigation, Individual Support Plans,

<i>(ODP, OLTL, OMAP, OMHSAS)</i>	Individual Budgeted Services, Assessments (PUNS, SIS, etc.), Individual/SC Monitoring, Provider Qualification, Quality Mgmt (IM4Q, HRP), Provider Service Contracts
PELCAN <i>(OCDEL)</i>	Pre-K counts, ELN, Enrollment, Child Care Subsidy Case, Individual, STAR level info, Provider, Provider Certification, Head Start
PACSES <i>(OIM)</i>	Cases, Support Orders, Collections, Obligations, OCSE 34A
AFCARS <i>(OCYF)</i>	Adoption, Foster Care
PROMiSe <i>(OMAP)</i>	SPBP, 5010, APR/DRG's, FFS Claims, MATP, Provider
PROMiSe Managed Care <i>(OMAP, OMHSAS)</i>	Capitation, Supplemental, Pharmacy, Participation, Provider, Encounters
Child Welfare <i>(OCYF)</i>	FCMIS, Title IV_E, Provider, SSN verification data
Mapper Facility License* <i>(OA, OMHSAS, OCYF)</i>	License Numbers, Capacity, Provider Name, Census
Childline* <i>(OCYF)</i>	Allegations, Appeals Perpetrator, Case

***Certification Licensing System (CLS) provides Facility License information for ODP. In the future this data should be loaded into the EDW.**

5.2 Business Analytic Capabilities by Program Office

HCBS - Business Analytics Capabilities

The matrix below shows the current business analytics capabilities for the Home and Community Based Services (HCBS) program offices for data loaded from HCSIS and EIM.

Subject Area		ODP	OLTL	OMHSAS	OCDEL	OCYF
Quality Management	Incident Management					
	SC Monitoring					
	Health Risk Profiles					
Individual	Demographics					
	Eligibility					
	Assessments and Evaluation					
	Waitlist Interest List Management					
Plan and Service	Individual Service Mgmt.					
	Individual Support Plan					
Supports Coordination	Case Comments					
	Case Load Management					
Provider	Provider Contracts					
	Provider Registration					
	Provider Qualification					
Financial	Financial Management					
	Claims					

Gathering
 Static Reporting
 BI Analytics
 Advanced Analytics

OCDEL Business Analytics Capabilities

The matrix below shows the current business analytics capabilities for OCDEL for data loaded from the PELICAN system.

Bureau	Program	Functional Area	OCDEL
Certification Services	Provider Licensing	Certification	
		Inspection	
		Provider Management	
Early Intervention Services	Infant/Toddler	Eligibility/Enrollment	
	Pre-School	Eligibility/Enrollment	
Early Learning Services	PA Pre-Kindergarten	Enrollment	
		Funds Management	
		Child Assessments and Outcomes	
	Keystone STARS	Provider Management	
		Funds Management	
		Technical Assistance	
Subsidized Child Care Services	Child Care Works (CCW)	Child Enrollments	
		Provider Management	
		Provider Invoicing	

Gathering
 Static Reporting
 BI Analytics
 Advanced Analytics

Child Support (PACSES) - Business Analytics Capabilities

The matrix below shows the current business analytics capabilities for OIM – Child Support for data loaded from PACSES.

Subject Area		OIM BCSE	
Case Management	Case Load Management		
	AOPC Tracking		
Establishment	Paternity Establishment		
	Support Order		
	Obligation		
	Medical Support		
Financials	Collections		Predictive Analytics
	Disbursements		
	Arrears Management		
Interstate	CSENET Interaction		
	Interstate Case Load Management		
Enforcement	Enforcement Remedy Efficiency		
	Enforcement Remedy Tracking		
Locate	Locate Case Management		
	Locate Non-custodial Parent		

Gathering
 Static Reporting
 BI Analytics
 Advanced Analytics

CIS - Business Analytics Capabilities

The matrix below shows the current business analytics capabilities for OIM for data loaded from CIS and eCIS.

Subject Area	OIM
Eligibility	
Recipient Demographics	
Case Demographics	
Managed Care	
Benefit Issuance	
Budget	
Application Processing (COMPASS)	
Employment and Training	
Employment	
Facility	
Waiver	
Exclusion / Sanction	
Client Resources	

Gathering
 Static Reporting
 BI Analytics
 Advanced Analytics

PROMISe - Business Analytics Capabilities

The matrix below shows the current business analytics capabilities for OMHSAS for data loaded from PROMISe.

Subject Area	OMAP	
SPBP		
Claims (FFS & Encounter)	▲	Predictive Analytics
MATP		
Capitation		
Supplemental Pharmacy		
Participation		
Gross Adjustment		
Prior Authorization		
Lock-In		
Provider		

The matrix below shows the current business analytics capabilities for OMAP for data loaded from PROMISe.

Subject Area	OMHSAS
Claims (FFS & Encounter)	
Capitation	
Participation	
Provider	