Enterprise Knowledge Management Section (EKMS) Overview

September 2013
EKMS – Functional Areas

EDW
- Data Warehouse Design
- Data Extraction, Transformation, Loading
- Validation Scripts

Reporting
- Business Intelligence Applications
- OLAP Models and Cubes
- Cognos Report Studio Ad Hoc Reporting

Data Analysis
- Performance Dashboards
- Data Analysis Assistance

ECM
- Capture, Manage, Store, Deliver, and Preserve unstructured data
- Improve efficiency and reduce cost
- Satisfy statutory and regulatory compliance requirements
EDW - Objectives

- Provide tools for business managers to analyze program effectiveness
- Provide ability to compare data across programs
- Provide decision support capabilities
- Provide a means to more easily meet Federal and State reporting requirements
- Provide a holistic view to better serve the program areas
EDW - Landscape

- Office of Children, Youth and Families (OCYF)
- Office of Child Development & Early Learning (OCDEL)

- Office of Developmental Programs (ODP)
- Office of Long Term Living (OLTL)
- Office of Medical Assistance Program (OMAP)
- Office of Mental Health and Substance Abuse Services (OMHSAS)

- Office Income Maintenance (OIM)

- Pennsylvania Department of Education (PDE)
- Pennsylvania Insurance Department (PID)

Technology: Cognos 10.2, Informatica 9, Oracle 11G

- Integrated Client Information System (iCIS)
- Child Information System (cis)

- Office of Children, Youth and Families (OCYF)

Technology: Cognos 7, Decision Stream, Oracle 10G

- Enterprise Incident Management
  - ODP
  - OLTL

- Office of Medical Assistance Program (OMAP)

Technology: Cognos, Informatica, Oracle 10G

- Pennsylvania Information Management System (PIMS)

Future L&I Data Matching

www.dpw.state.pa.us
EDW – MPI & MCI Information

HCSIS (ODP, OLTL, OMAP, OMHSAS)
Consumer Demographics, Incident Mgmt, AE Oversight, Eligibility Determination, Incident Investigation, Individual Support Plans, Individual Budgeted Services, Assessments (PUNS, SIS, etc.), Individual/SC Monitoring, Provider Qualification, Quality Mgmt (IM4Q, HRP), Provider Service Contracts

AFCARS (OCYF)
Adoption, Foster Care

EIM (ODP - BAS, OLTL)
Incidents

PELICAN (OCDEL)
Pre-K counts, ELN, Enrollment, Child Care Subsidy Case, Individual, STAR level info, Provider, Provider Certification, Head Start

PACSES (OIM)
Cases, Support Orders, Collections, Obligations, OCSE 34A

Childline (OCYF)
Allegations, Appeals, Perpetrator, Case

Mapper - Facility License* (OA, OMHSAS, OCYF)
License Numbers, Capacity, Provider Name, Census

PROMISe (OMAP)
SPBP, 5010, APR/DRG’s, FFS Claims, MATP, Provider

PROMISe - Managed Care (OMAP, OMHSAS)
Capitation, Supplemental Pharmacy, Participation, Provider, Encounters

CIS/eCIS (OIM)
Case, Benefits, LIHEAP, Budget

Child Welfare (OCYF)
FCMIS, Title IV_E, Provider, SSN verification data

Provider Information
MPI is the linking field

Recipient Information
MCI is the linking field

*Facility License requests for ODP & OCDEL are facilitated via data extract from the Enterprise Licensing System (ELS). In the future this data should be loaded into the EDW.

Red – Daily update
Blue – Weekly
Green – Monthly
Orange – Semi-annual

www.dpw.state.pa.us
An evaluation of business intelligence and advanced analytics capabilities reveal four stages of business analytics capabilities.

- **Stage 1:** What is available?
  - Reporting on:
    - Individuals
    - Service utilization
    - Providers
  - Monitoring KPIs:
    - Service Utilization
    - Waiver regulations

- **Stage 2:** What is happening?
  - Ad hoc capabilities:
    - Individuals
    - Service delivery
  - Mobile Analytics:
    - Alerts
    - On-the-go Metrics

- **Stage 3:** Why is it happening?
  - Predictive Analytics:
    - Incident prediction
    - Financial forecasting
    - Service effectiveness
    - Outcomes analysis
    - Provider fraud detection and prevention (PI)

- **Stage 4:** What might happen?
Knowledge Management Steering Committee/ Data Governance

- A board comprised of representatives from all Program Offices
- Meets on a monthly basis to review, approve and prioritize all requests that are submitted through the Knowledge Management Request Forum
- Members must work for DPW and must be able to represent the priorities of and make decisions for their Program Office
- Members approve access for users to their data sets
Data Quality

• Data validations are performed in Production environments
• Validation scripts leverage counts, minimums, maximums, and standard deviation to identify statistical variances. Any significance variance in metrics is followed-up with users.
• Known DW issues/resolutions are communicated to users each month.
• Enterprise Data Warehouse data refresh schedule is published on KM intranet site
• Data is refreshed daily/weekly, monthly, Quarterly based on Program Office requirements.

Training/Resources

• Basic, Advanced and Program Office specific training is provided to aid customers in understanding and using our data.
• KM intranet provides online resources related to Enterprise Knowledge Management at DPW.
Data Security

• The Security Domain maintains technical standards and policies that apply to protecting DPW's computer information systems and resources

• It includes areas such as management and operational security, cryptography, application and network security, and physical security

• All Internet sites and applications go through extensive review by the DPW security team to ensure compliance with all state and federal laws related to privacy issues.
The EDW offers an assortment of report content fulfilling a diverse set of data analysis needs for a variety of users.

<table>
<thead>
<tr>
<th></th>
<th>Reports</th>
<th>Cubes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Developed</td>
<td>1365</td>
<td>193</td>
</tr>
<tr>
<td>User Created</td>
<td>4916</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6281</strong></td>
<td><strong>193</strong></td>
</tr>
</tbody>
</table>

- Report Authors: 269
- Report Viewers: 1388
- Total Users: 1657
There are different ways to report on the data in the data warehouse:

1. **Dashboard** is a visual display of the most important information related to organizational objectives; summarized and arranged so the information can be monitored at a glance.

2. **GIS Maps** combine a spatial location with information about that location and provides a means of analyzing and presenting this information.

3. **Cube** represents a subset of data warehouse records in a crosstab format similar to a spreadsheet allowing manipulation and analysis by the end user.

4. **Cognos Web Report** is a predefined report that runs on demand and may prompt the user for limited customized prompts, such as a target county or time period.

5. **Ad-Hoc Reporting** allows the user to develop reports using custom logic, calculations, filters, and thousands of individual data elements.
### Executive Dashboard

**DPW Executive Dashboard**  
Data is current as of: Jul 31, 2013 (Last refreshed on: Aug 26, 2013)

#### Enrollments and Expenditures

<table>
<thead>
<tr>
<th>Program</th>
<th>% of Population</th>
<th>Enrollment Trend</th>
<th>Expenditure (State and Federal)</th>
<th>Enrollment Expenditure (Change Rate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>17.4%</td>
<td></td>
<td></td>
<td>0.2% Decrease, 137.0% Increase</td>
</tr>
<tr>
<td>TANF</td>
<td>1.5%</td>
<td></td>
<td></td>
<td>0.3% Increase, 57.5% Increase</td>
</tr>
<tr>
<td>SSI Cash</td>
<td>3.1%</td>
<td></td>
<td></td>
<td>0.4% Decrease, 423.8% Increase</td>
</tr>
<tr>
<td>SNAP</td>
<td>14.4%</td>
<td></td>
<td></td>
<td>0.3% Increase, 9.4% Decrease</td>
</tr>
<tr>
<td>GA Cash</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>8.8% Increase, 36.7% Decrease</td>
</tr>
<tr>
<td>LIHEAP</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>100.0% Decrease, 100.0% Decrease</td>
</tr>
<tr>
<td>CHIP</td>
<td>1.5%</td>
<td></td>
<td></td>
<td>0.5% Decrease, 95.4% Decrease</td>
</tr>
<tr>
<td>Child Care</td>
<td>0.9%</td>
<td></td>
<td></td>
<td>1.3% Increase, 24.0% Decrease</td>
</tr>
<tr>
<td>State Blind Pension</td>
<td>0.0%</td>
<td></td>
<td></td>
<td>1.4% Decrease, 61.6% Increase</td>
</tr>
</tbody>
</table>

*Total Population (12,763,536) based on 2012 Census*

#### Key Dashboard Highlights

- **Medical Assistance Enrollments:**
  - 0.8% decrease from July 2012 to June 2013.
- **SSI Enrollments:**
  - 0.02% increase in the number of children on SSI from July 2012 to July 2013.
  - 2.7% increase in the number of adults on SSI from July 2012 to July 2013.

Click [here](#) to access the Monthly Management Report.

#### Enrollments as a Percentage of Population

<table>
<thead>
<tr>
<th>Program</th>
<th>% of Population Enrolled</th>
<th>Total Enrollments</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>17.4%</td>
<td>2,732,355</td>
<td>12,763,536</td>
</tr>
</tbody>
</table>

#### Major Program Enrollees Intersection - Top 15

- [Graph showing number of enrollees over time](#)
### MA Enrollment

<table>
<thead>
<tr>
<th>Cat</th>
<th>Total</th>
<th>Change Rate</th>
<th>% of MA</th>
<th>Phased Out (PO)</th>
<th>Change Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>24,741</td>
<td>2,635</td>
<td>100%</td>
<td>10,839</td>
<td>-301</td>
</tr>
<tr>
<td>MAGI</td>
<td>2,442</td>
<td>2,339</td>
<td>9.87%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>NMP</td>
<td>2,442</td>
<td>2,339</td>
<td>9.87%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>NON-MAGI</td>
<td>22,299</td>
<td>11,436</td>
<td>90.13%</td>
<td>10,839</td>
<td>-301</td>
</tr>
<tr>
<td>NMP</td>
<td>21,069</td>
<td>11,436</td>
<td>85.16%</td>
<td>10,839</td>
<td>-301</td>
</tr>
<tr>
<td>MNO</td>
<td>1,230</td>
<td>129</td>
<td>4.97%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Legend:**
- **PROG/CAT**: Program Category
- **PHASED OUT**: Phased Out
- **REST of MA**: Rest of MA

1. Out of the Household individuals have been excluded from the above metrics.
2. Enrollments counted are the results of adjudicated applications.

### Out of the Household

<table>
<thead>
<tr>
<th>Cat</th>
<th>Total</th>
<th>Change Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>OOTH</td>
<td>272</td>
<td>1,136.36%</td>
</tr>
</tbody>
</table>
Expenditure information for all Program Offices

State Expenditures (FY2011-2012)

Programs | DPW Organization
---|---

<table>
<thead>
<tr>
<th>DPW</th>
<th>OA</th>
<th>OCDEL</th>
<th>OCYF</th>
<th>ODP</th>
<th>OIM</th>
<th>OLTL</th>
<th>OMAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>$9,388,842,138</td>
<td>$56,266,067</td>
<td>$402,593,208</td>
<td>$784,601,833</td>
<td>$1,064,891,378</td>
<td>$563,195,054</td>
<td>$1,242,223,972</td>
<td>$5,208,398,104</td>
</tr>
</tbody>
</table>

YTD Spend: $9,388,842,138

Targeted Budget: $10,379,403,333

Annual Budget: $12,455,284,000

Monthly Trend

Monthly Spend: $815,067,161

Monthly Target: $1,037,940,333

Monthly Variance (%): -21.5%

Monthly Variance ($): -$222,873,173

Expenditure Variance by Program Office (Apr-12)
(Ranked by Variance - Left to Right)

YTD Expenditure for the Top 10 Appropriations:

$10,000,000
PA ChildStat - Select an Indicator

Select an Indicator

Indicator List
- Child Suicides, Ages 10-19
- Juvenile Delinquency Dispositions
- Juvenile Delinquency Placements
- Student Withdrawals from Public School
- Truancy in Public Schools

Make a Map

Select a Display Type
- Compare Data (67 counties)
- Compare Data (selected counties)
- Single County Profile (all indicators)
- Select a County (County List)

Select Colors
- Red
- Pink
- Green
- Blue
- Purple

The data presented by this application may not be accessed by any means other than this application. Presentation of data sets from this website must include appropriate citation to the data source and explanatory footnotes.
PA ChildStat - Metrics

2011: Juvenile Delinquency Dispositions Per 1,000
**PA ChildStat – Drill Through**

**2011: Juvenile Delinquency Dispositions Per 1,000**

Statewide Number of Dispositions per 1,000 Population Age 10 to 17: 49.9
Statewide Total Number of Dispositions: 64,142
Statewide Population Age 10 to 17: 1,285,101

<table>
<thead>
<tr>
<th>County Name</th>
<th>Class Size</th>
<th>Number Dispositions</th>
<th>Number Dispositions Per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>6</td>
<td>367</td>
<td>34.4</td>
</tr>
<tr>
<td>Allegheny</td>
<td>2</td>
<td>7,316</td>
<td>65.5</td>
</tr>
<tr>
<td>Armstrong</td>
<td>8</td>
<td>113</td>
<td>17.0</td>
</tr>
<tr>
<td>Beaver</td>
<td>4</td>
<td>460</td>
<td>20.5</td>
</tr>
<tr>
<td>Bedford</td>
<td>8</td>
<td>57</td>
<td>11.2</td>
</tr>
<tr>
<td>Berks</td>
<td>3</td>
<td>1,662</td>
<td>36.7</td>
</tr>
</tbody>
</table>

**Note:** Counties within the light blue shaded area are at or below the statewide rate (49.9) for Pennsylvania.
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**Ad-Hoc Reporting** allows the user to develop reports using custom logic, calculations, filters, and thousands of individual data elements.
Enterprise Content Management (ECM) is the term used to describe the technologies, tools, and methods used to **capture**, **manage**, **store**, **preserve**, and **deliver** “content” or “information” across an enterprise or organization.
Common Benefits of ECM

- Paperless (green) operations
- Information accessibility
- Processing efficiency through use of automated workflows
- Cost savings
- Organizational Knowledge Management
- Facilitates management of case information
- Integration with line of business application systems
- Significantly reduced data entry, storage and separation activities
Questions?