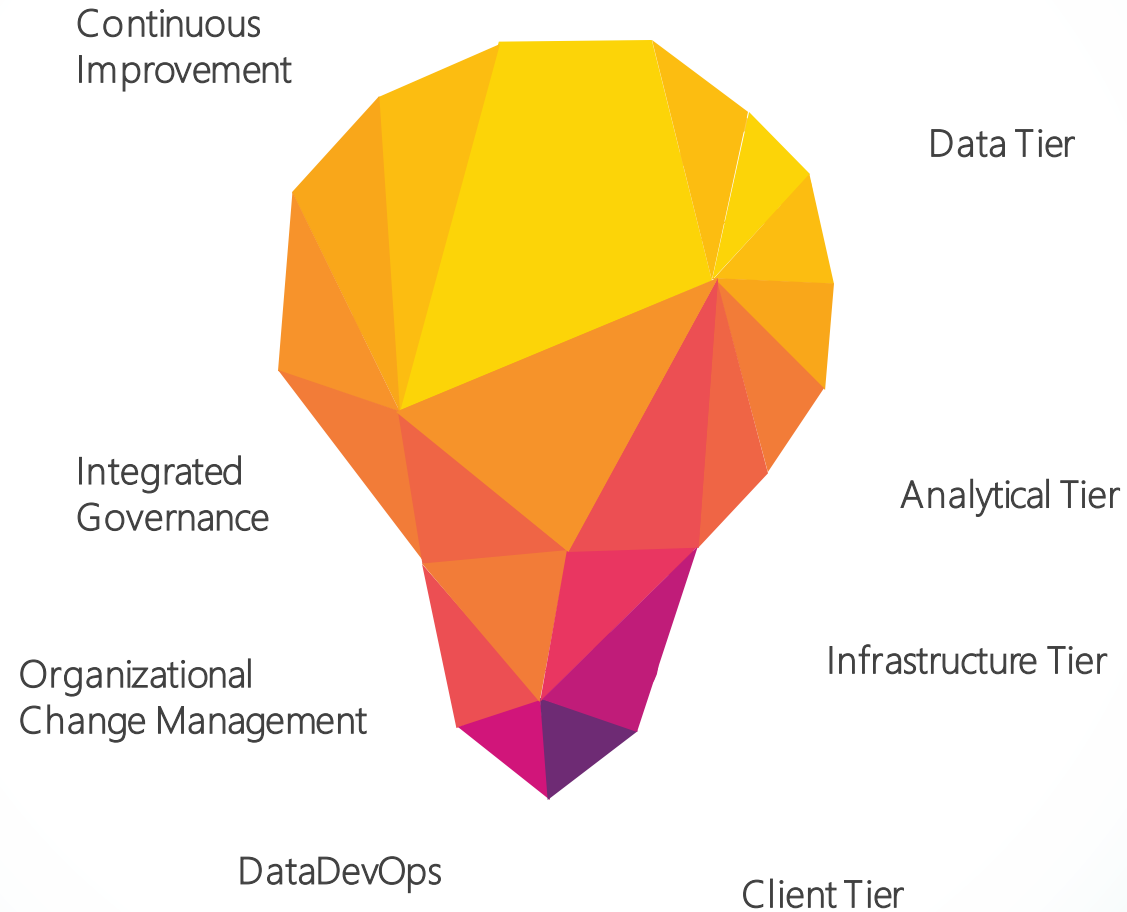


PDMP Insight (PDMPI)

Business Tier



PDMP Insight (PDMPI)



A multitiered, architectural framework designed to empower PDMPs with the capability to implement and sustain a holistic approach to Business Intelligence (BI). The core component of the PDMPI architecture is an elastic, centralized, modern data warehouse (MDW) optimized for data analysis.

John Robertson

Chief Technology Officer
OmniCore USA

john.robertson@omnicoreusa.com

IT Consultant for Florida Department of Health
Data/Business Intelligence Architect For E-FORCSE PDMP

PDMP Insight (PDMPI)

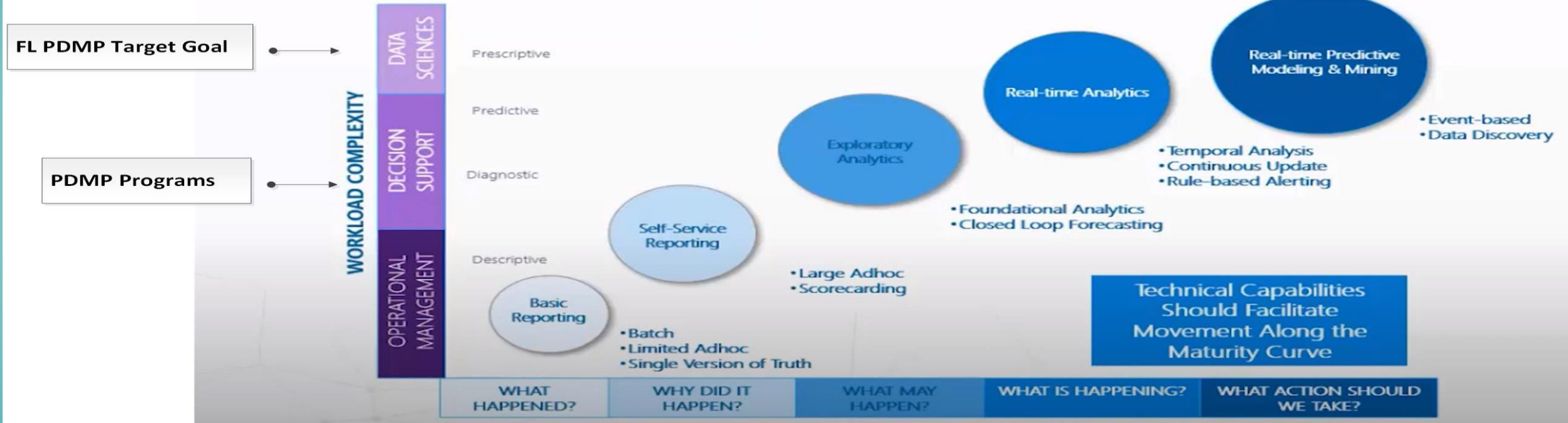
Program Tiers

- **Business Tier**—All organizational program elements required to define, execute, and manage the PDMPI capability
- **Data Tier**—Implements primary components of the Data Architecture (including the MDW) executed through a Data Management Framework (DMF)
- **Analytical Tier**—Multi-Dimensional Online Analytical Processing (OLAP) and Cognitive Services (Advanced Analytics/AI/ML)
- **Infrastructure Tier**—Cloud-based services orchestrated for innovation pipelines that are limitless and life-cycle driven
- **Client Tier**—Consists of tools for developing BI logic, data visualizations, and data analysis
- **DataDevOps Tier**—DataOps + DevOps = Formal, standardized design/build processes in the development and deployment of BI components
- **Organizational Change Management (OCM) Tier**—Manages the impact of BI on the organization's information culture
- **Integrated Governance Tier**—Seamless integration of PDMPI concerns into the existing operational governance model of the PDMP
- **Continuous Improvement (CI) Tier**—Prioritizes process improvements, maturity growth, and sustainability for the PDMPI capability

PDMP Insight (PDMPI)

E-FORCSE Insight Analytical Maturity Model (AMM)

Analytical Maturity Curve



Data Sophistication

- Raw Data
- Reporting Database
- Data Warehouse
- OLAP Cubes
- Big Data
- Snapshot
- Streaming/Real Time
- Heterogeneous Datasource Linking

PDMP Insight (PDMPI)



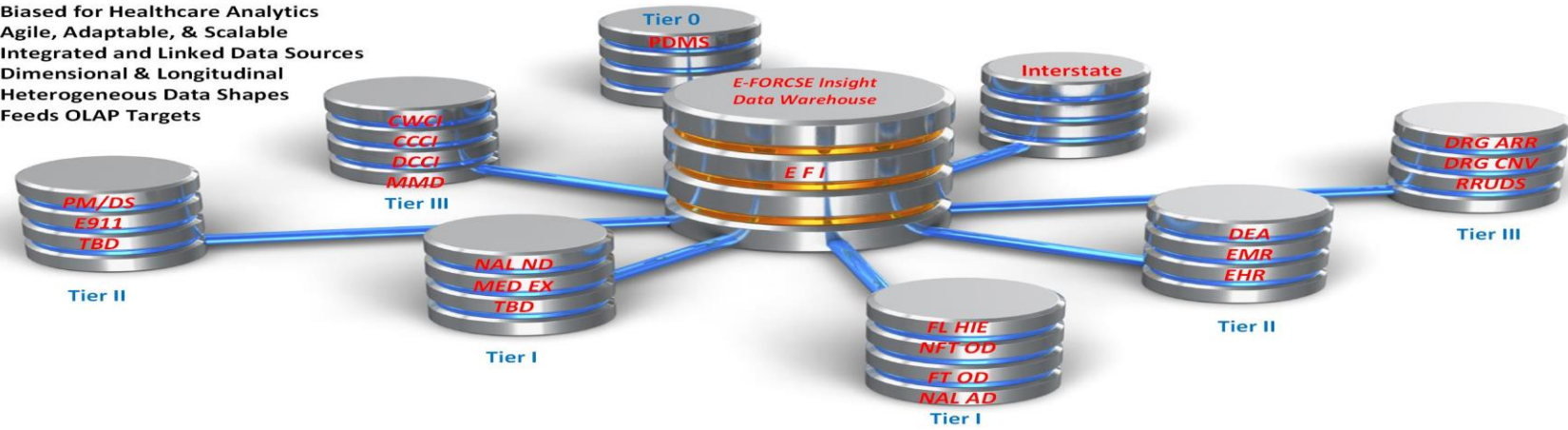
Cloud Infrastructure Services

E-FORCSE Insight (EFI) Business Intelligence Architectural Framework

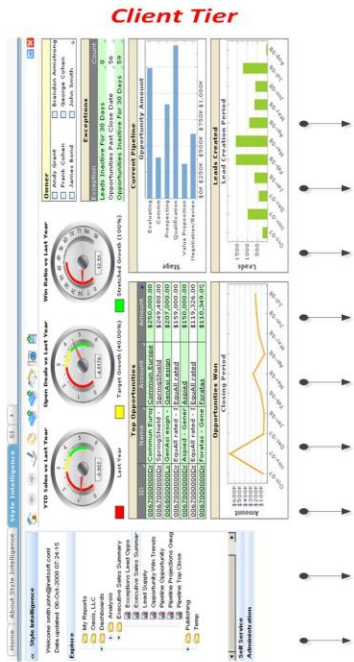


- Modern Data Warehouse
- Biased for Healthcare Analytics
- Agile, Adaptable, & Scalable
- Integrated and Linked Data Sources
- Dimensional & Longitudinal
- Heterogeneous Data Shapes
- Feeds OLAP Targets

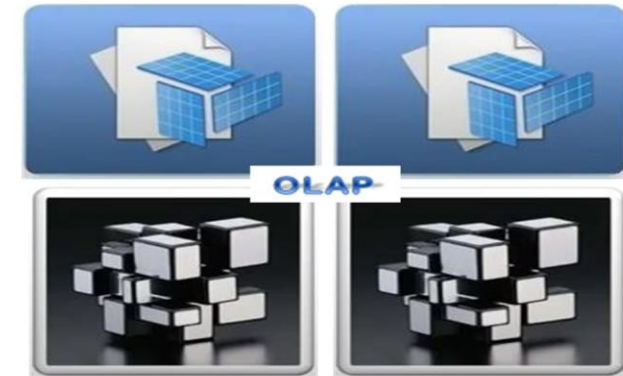
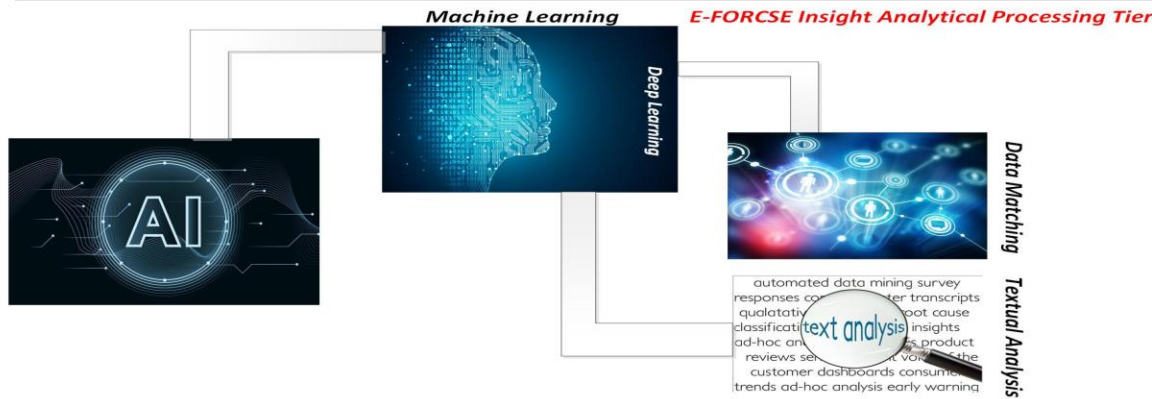
E-FORCSE Insight Enterprise Data Tier



KPI's ■ Dashboards ■ Scorecards ■ Public Website ■ Reporting



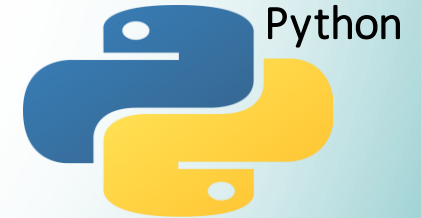
Data/Text Mining & Analysis
Metrics & Measures
Growth
Trends
Prediction



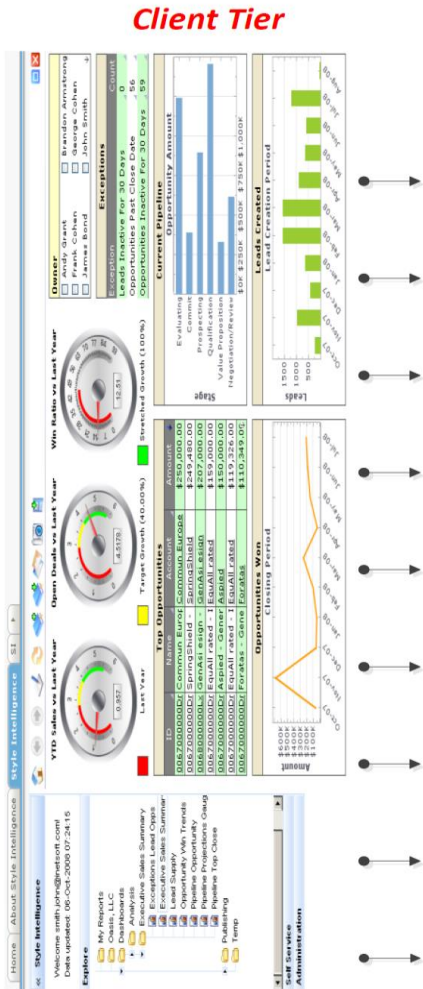
PDMP Insight (PDMPI)

Client Tier

- Toolset Agnostic
- Standardization recommended for formal artifact development



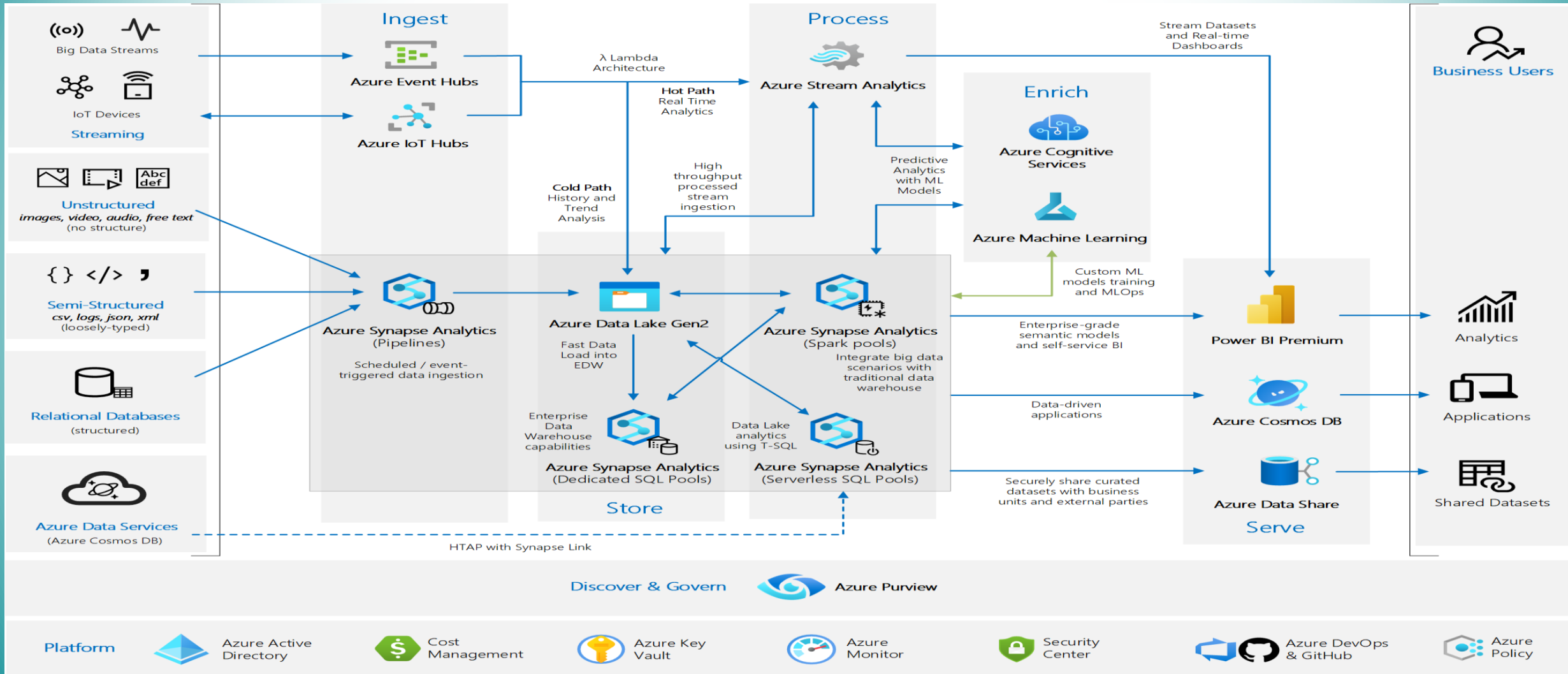
KPI's ■ Dashboards ■ Scorecards ■ Public Website ■ Reporting



Data/Text Mining & Analysis
 Metrics & Measures
 Growth
 Trends
 Prediction

PDMP Insight (PDMPI)

Infrastructure Tier—Modern Data Warehouse



PDMP Insight (PDMPI)

Analytical Tier

Online Analytical Processing—Data Cubes for simplified rollup based/drill down/drill through analysis

Cognitive Services

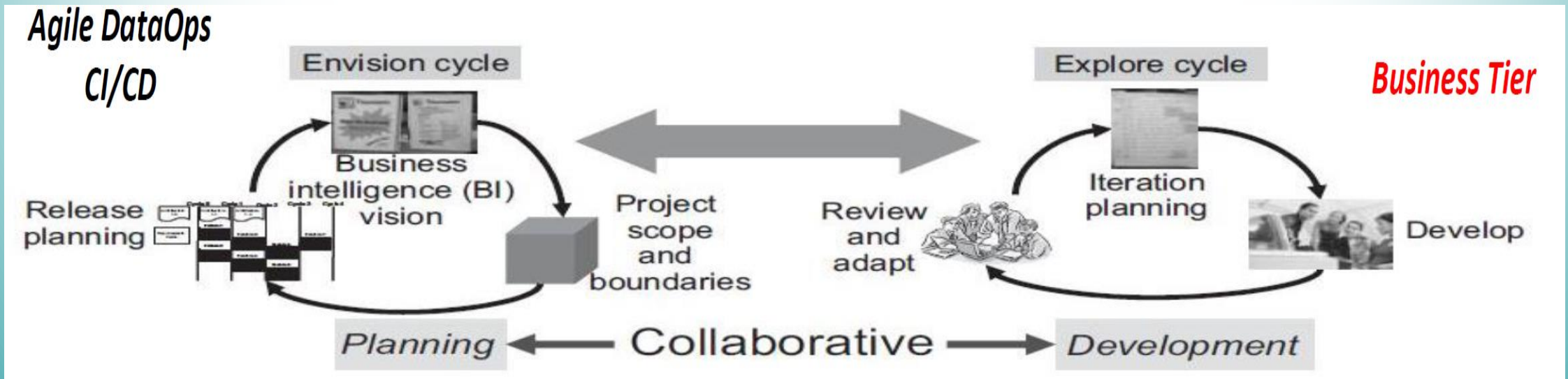
- Machine Learning (ML) deep analysis facilitates entity (patient, drug, etc.) data pattern matching and rationalization of unstructured data sources (fatal OD/non-fatal OD information)
- Artificial Intelligence (AI) greatly enhances the prospect of an enterprise predictive model when informed by deep machine learning, data analysis outcomes, data mining results, longitudinal data trends, and supervised engagement



PDMP Insight (PDMPI)

Business Tier

- Business Case
- Project Management Plan and Schedule
- Business Requirements Management—Functional, Technical With Traceability Matrix (RTM)
- Business Process Management and Analysis
- Agile Business Processes
- Standards Driven (Modeling, DataDevOps)

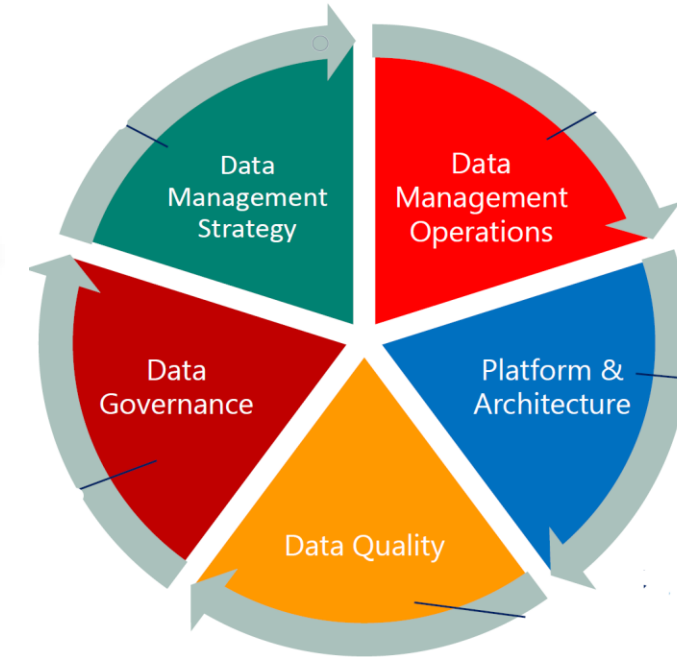
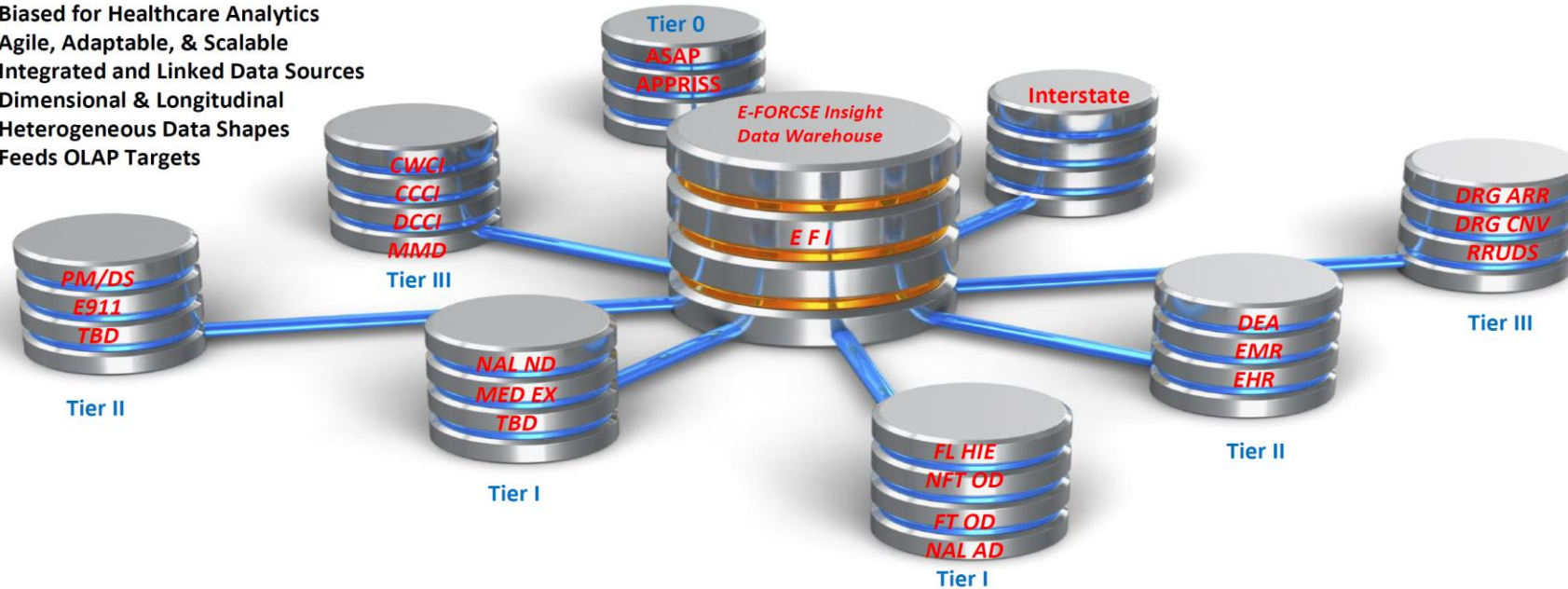


PDMP Insight (PDMPI)

Data Tier

- Modern Data Warehouse
- Biased for Healthcare Analytics
- Agile, Adaptable, & Scalable
- Integrated and Linked Data Sources
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- Feeds OLAP Targets

E-FORCSE Insight Enterprise Data Tier

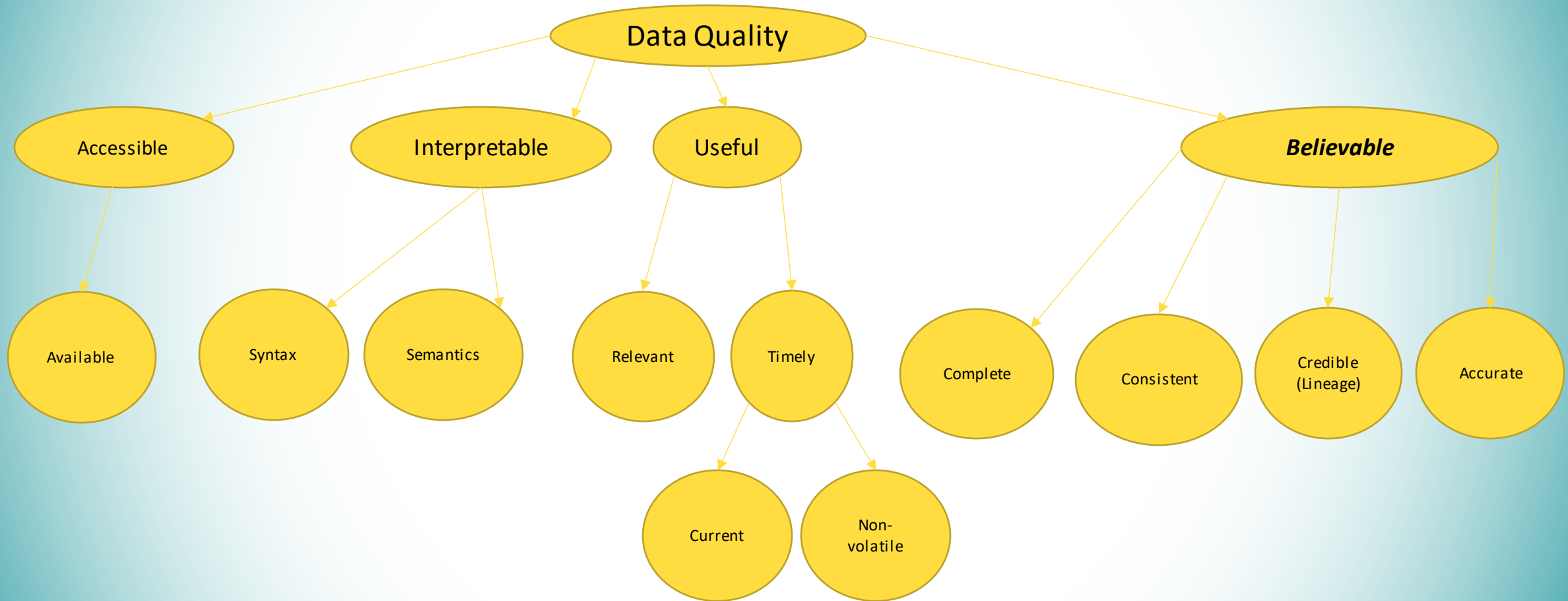


Data Management Framework (DMF)

- Dimensionality—Facts and Conformed Dimensions (unique patient identification regardless of data source)
- Data Integration—Multi-sourced and transitioned between bronze, silver, and golden “states”
- Data Quality Assurance
- Data Meaning via Data Dictionary

PDMP Insight (PDMPI)

Data Tier—Dimensional Data Quality for BI




PDMP Insight (PDMPI)

Data Tier—Data Dictionary Documents and Defines Meaning

Florida Department of Health
Information Data Warehouse Requirements
EFI Unified, Standardized Healthcare Data Elements

Fiscal Year: **2020-21**
Business System Data Source: **ASAP via PDMS Vendor**
Definition Basis: **Native**
Data Element Number: **101005**
Data Element Name: **Date Sold (Situational)**



Description

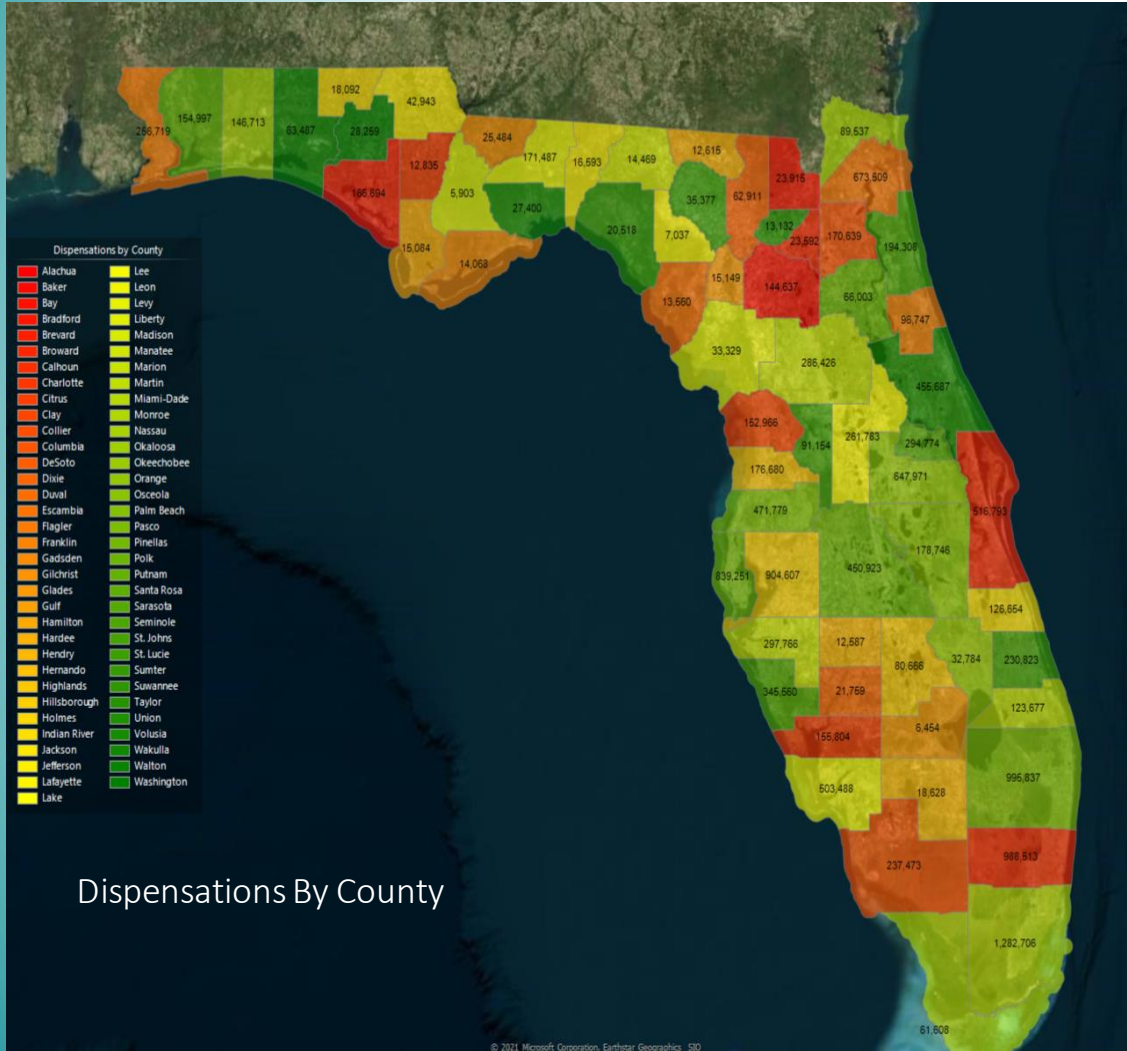
This field is used to determine the date the prescription was dispensed (left the pharmacy), not the date it was prepared. This date could be captured from the point-of-sales (POS) system, if the pharmacy has a POS system, and there is a bidirectional flow with the pharmacy management system in order to capture and report this date. Or it could be captured and reported from a will-call management system, integrated with the pharmacy management system.

Code	Definition/Example
N/A	

Length:	8				
Data Type:	Date				
Year Implemented:	2019-20				
Format:	YYYYMMDD				
DW Instantiation Points: (Schema.Table.Column) (Red = Origin)	asap.DispensingRecord.DateSold dbo.FactDispensing.DateSold				
EFI Notes:	Specify additional subject matter expertise here....				
Extended Reference Data:	{/ Links to Full Code Table }				
Sample Query:	select datesold, count(*) as 'Dispensing' from dbo.factdispensing group by datesold order by dispensings desc				
Change Log:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Purpose</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">9/1/2019</td> <td>Data element added</td> </tr> </tbody> </table>	Date	Purpose	9/1/2019	Data element added
Date	Purpose				
9/1/2019	Data element added				

PDMP Insight (PDMPI)

Drill Down Data Visualization Example From E-FORCSE Data Warehouse



Outcome 2: Reduction of the quantity of pharmaceutical controlled substances obtained by individuals

Performance Measure: Characteristics of controlled substances reported to the PDMS.

** Miami-Dade County **

Data Characteristics	RY21	RY20-21 Change (%)
Prescription (Rx)	1,271,825	
Days Supply	33,532,102	
Patient	355,998	
Pharmacy	1,663	
Prescriber	20,814	
Population 18 years and over	2,188,432	

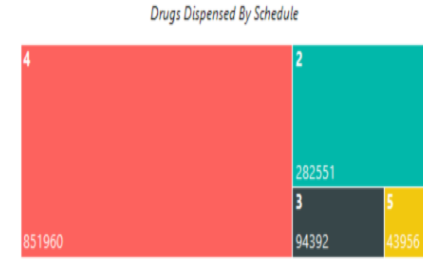
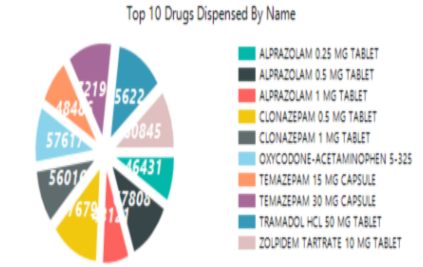


Table 2. Characteristics of schedule II through schedule V prescriptions dispensed to Florida residents 18 years of age and older.

