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Improving Population Healthcare Through Data Analytics, Visualization, and Reporting Tools

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Improving Population Healthcare Through Data Analytics, Visualization, and Reporting Tools

LTSS Waiver Services in Massachusetts

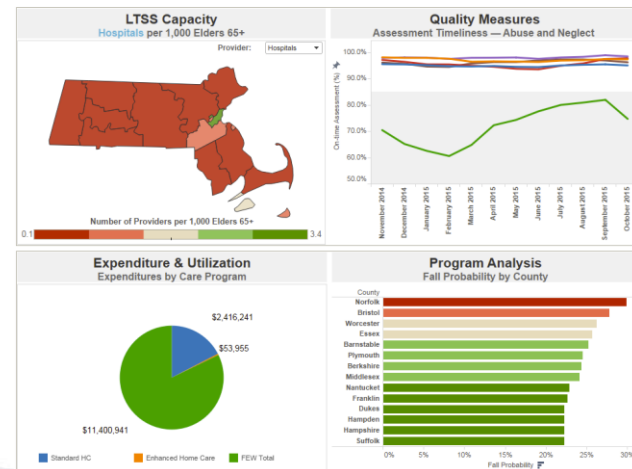
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TrendFinder  **LTSS**
Data Solutions for Health and Human Services

 University of
Massachusetts
UMASS Medical School
umassmed.edu

Massachusetts 1915c Frail Elder Waiver

- Administered by MA Executive Office of Elder Affairs
- Many Services
 - Adult Day Health Skilled Nursing Home Health Aide
 - Chore Service Companion Service Transportation
- Multiple Information Needs
 - Operations monitoring
 - Efficiency opportunities
 - Quality assessment and reporting
 - Program integrity
 - Expanded service planning



Approach

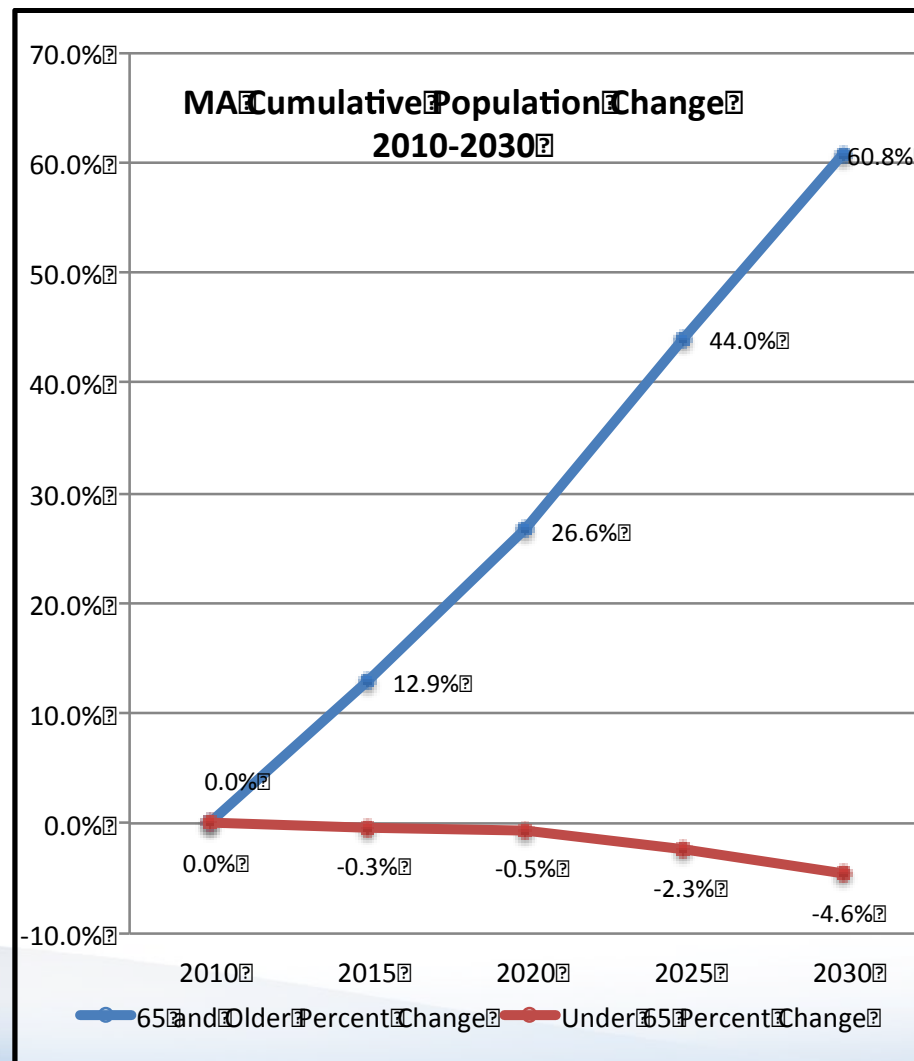
- The University of Massachusetts Medical School has been working with Elder Affairs on analyzing Waiver data since 2012
- Agency Partnership
- Focus on the Data and Analytics
- Low-Touch Implementation
 - Minimize Development of Custom Applications
 - Utilize Commercial and Open Source tools
 - SQL Server
 - Tableau
 - Web Portal
 - R

Agency Partnership

- Agency
 - Sets priorities
 - Outlines information needs; clarifies processes and procedures
- Data Analytics Team
 - Provides analytic consultation including:
 - Analytic design
 - Reporting metrics
 - Benchmarking
- Data Management Team
 - Develops data analysis environments
 - Implements data analytics, visualizations and reports

Objectives

- Plan for projected increasing demand for services
- Improve operational efficiency
- Deliver the right services to the right individuals at the right time
- Provide operational and program management with timely, actionable information



Reporting and Analytics

- Transforming the data into actionable information
- Progression of Analytics



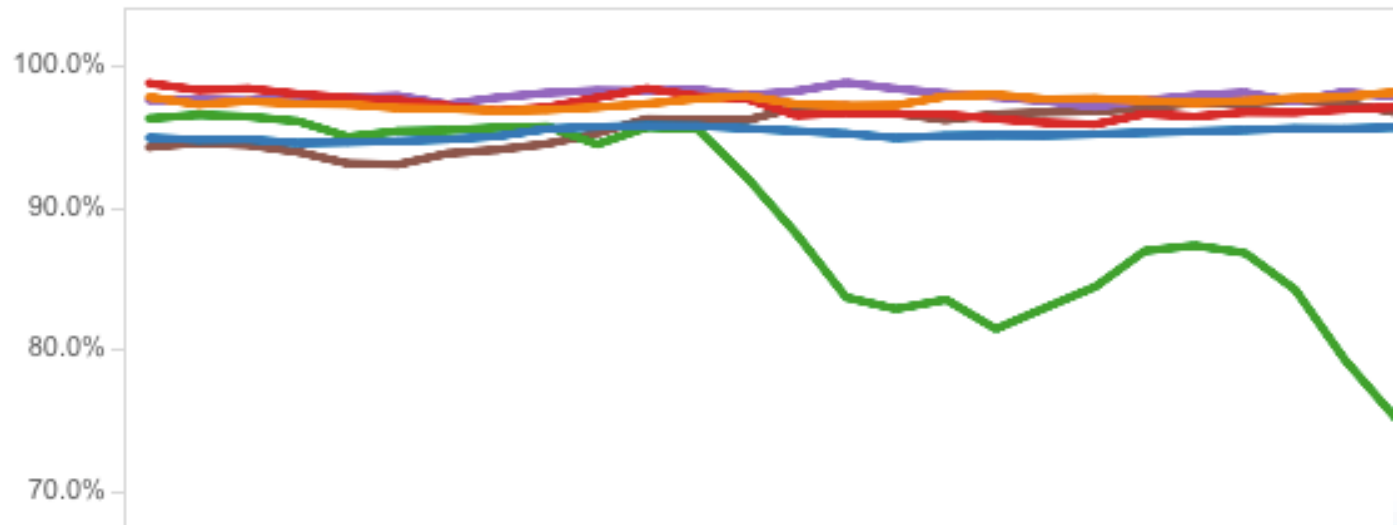
- Reports being delivered to Elder Affairs and Service Delivery organizations

Descriptive Analytics

- Current State
- Trend

Health and Welfare 1—Abuse and Neglect Trends

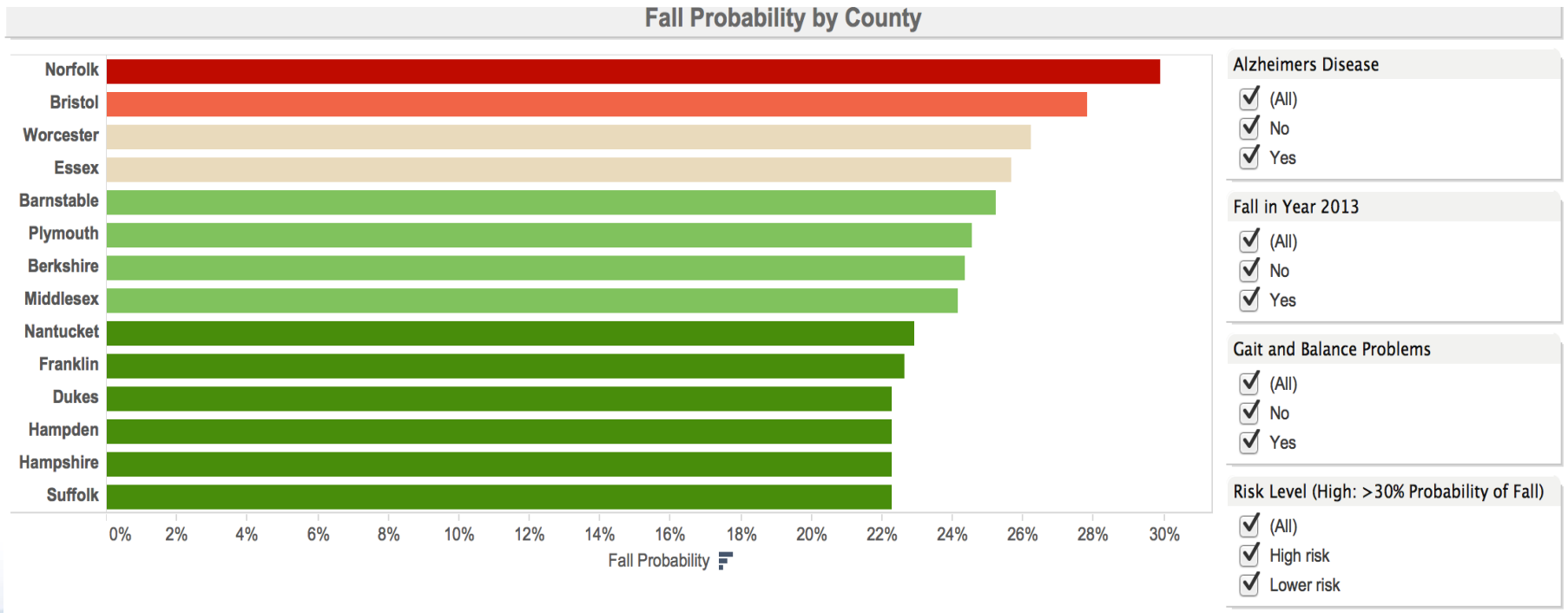
Health and Welfare 1: Home Care consumers were assessed every six months to identify their concerns about Abuse and Neglect. Assessment Status (%): Question answered in required time frame (%)
Program(s): All



Demo Data

Predictive Analytics

- What do we expect to happen?



Demo Data

Moving from Predictive to Prescriptive

Lists of individuals that should be monitored more closely

Falls Risk Assessment for Agency AAA 19

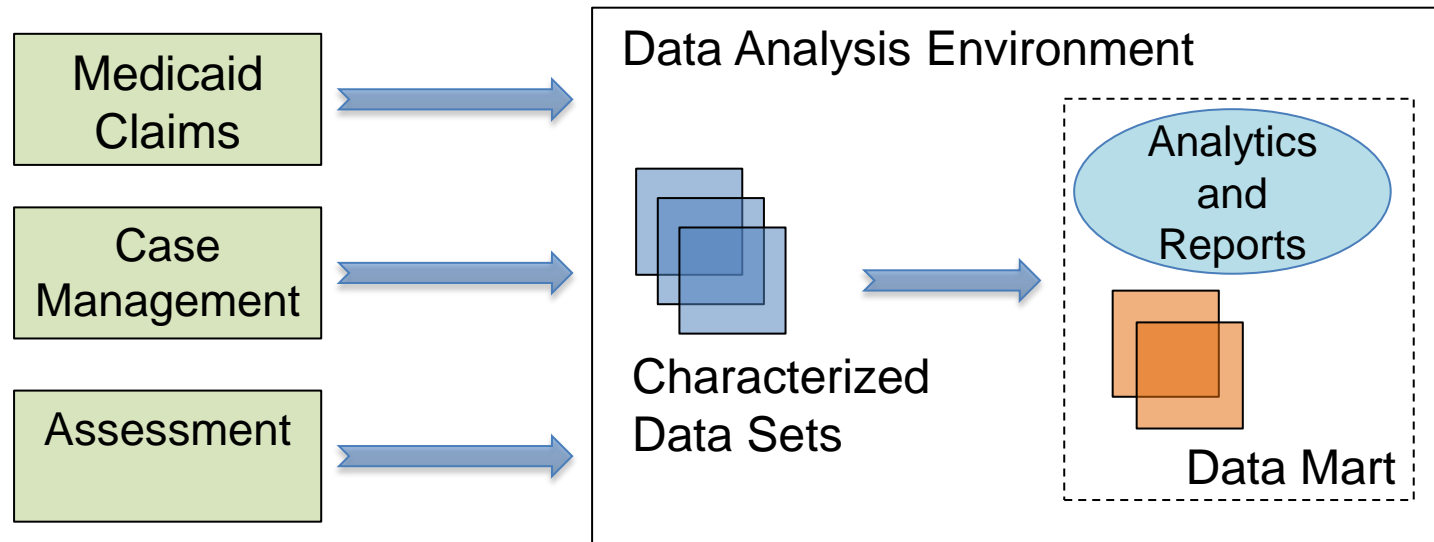
Person Id	Fall in Year 2013	Gait and Balance Problems	Alzheimers Disease	Assessment Date	Case Manager	Risk Level (High: >30% Probability of Fall)	Fall Probability
1623	No	Yes	No	2/17/2015	C. Testcase	High risk	0.3111
1628	Yes	Yes	No	1/11/2016	C. Testcase	High risk	0.4205
1705	Yes	Yes	No	12/29/2015	E. Tester	High risk	0.3546
1717	Yes	Yes	Yes	2/10/2016	A. Test	High risk	0.4529
1799	Yes	Yes	No	11/4/2015	C. Testcase	High risk	0.4141
1893	Yes	Yes	No	2/2/2016	C. Testcase	High risk	0.3935

Demo Data

Data Management

- Multiple Sources
 - Medicaid claims and enrollment
 - Waiver case management
 - MDS Assessment
- Time spent in the data, far less on visualization
- Characterization
 - Data: Two Components
 - Value
 - Meta/Quality Information
- Transformation (Business Rules)
 - What was done
 - Traceable

Implementation



- Moved from building data warehouses to data marts
- Moving to on-demand data and transformations

Next Steps

- Continue low-touch implementation approach
- More data integration
 - Consumer profiles combining Medicaid claims and HCBS data
 - Currently working with the MA Department of Transitional Assistance, integrating SNAP data with the Waiver data
- More predictive and prescriptive analytics

Thank you

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