NASCIO

☆ State IT Recognition Awards

**Sharing Data to Inform Policy, Reduce Costs, and Better Serve Citizens
as States Prepare for the Silver Tsunami**

Category: Open Government and Data, Information and Knowledge Management

Commonwealth of Massachusetts

Executive Office of Elder Affairs

Project initiated: August 2012

Project completed: January 2014

Contact:
Sandra Edler
Massachusetts Office of Information Technology
One Ashburton Place, Room 804
Boston, MA 02108
617.626.4620
sandra.edler@mass.gov

MassIT

Executive Summary

Over the last several decades, the provision of publically-funded long-term services and supports for elders has undergone a significant transition – from being primarily offered in institutional settings, such as nursing facilities, to a much greater emphasis on delivery via home- and community-based service (HCBS) alternatives.

The goal of these initiatives is to provide services and supports that improve individuals' quality of life while potentially decreasing costs. Managing publicly-funded resources dedicated to HCBS and understanding the impact of HCBS requires access to data; however, service fragmentation, lack of system standardization, and insufficient data on the provision of these services has made it very challenging for state agency leaders and local service providers to assess quality, outcomes, utilization patterns, and demand.

In Massachusetts, our Executive Office of Elder Affairs (Elder Affairs) and the University of Massachusetts Medical School (UMass Medical) leverage the cloud and commercial off-the-shelf (COTS) software to manage and analyze data about HCBS service delivery, assessment information, and claims to produce customizable reports and data visualizations.

The system, called HBCS Explorer, pulls assessment information and metrics regarding service delivery and cost from a multitude of programs – at the federal, state, and local levels – out of their silos and into a common place to associate and correlate with ease.

As a result, at the click of button, authorized users can easily manipulate the information and immediately see cost differentials and other key metrics for various kinds of care and consumers.

Through analyses, Elder Affairs has demonstrated that the state can benefit from cost avoidance while improving quality of life for elders through the provision of HCBS and successfully enabling elders to remain in their own homes as they age.

Elder Affairs also has enhanced transparency around the provision of services coordinated and provided through a statewide network of non-profit Aging Service Access Points.

With this greater visibility, Elder Affairs engenders buy-in from the ASAPs, and together we can easily identify issues and pursue quality improvements.

The HCBS Explorer makes readily available to decision-makers an incredible wealth of information about costs and other key factors to inform policy, reduce costs, and better serve citizens.

This information is critical to our success as we work to improve services and gain the benefits associated with keeping elders in their homes

To the best of our knowledge, this level of functionality and insight has simply not existed in the public sector until now. As such, Massachusetts is eager to share this winning approach with our peers.

Exemplar

The Commonwealth of Massachusetts coordinates delivery of home- and community-based services to elders through a network of 26 non-profit Aging Service Access Points, known as ASAPs.

Since 2006, Elder Affairs has captured and managed information from these 26 independent entities via a cloud-based model in a single Senior Information Management System (SIMS).

Because SIMS is first and foremost a case management system used to coordinate information and referrals, eligibility determinations, assessments, care planning, service authorizations, and service deliveries of HCBS to elders across Massachusetts, it contains a substantial amount of data, including information on 661,762 consumers, 1,571,957 standardized assessments, nearly 43 million hours of homemaker services, and over 66 million home-delivered meals.

Thanks to this single system of record, Elder Affairs possesses what may be the largest dataset of its kind in the country; however, until creation of the HCBS Explorer, we lacked the ability to use it in a way that was meaningful for program operations or research to inform policy decisions. Building on a strong historic relationship with UMass Medical, Elder Affairs reached out for help to develop the web-based platform now known as the HCBS Explorer.

The HCBS Explorer uses a COTS product to develop customizable reports and analyses. The reports and analyses are easy for end-users, including state decision-makers and the staff of service providers, to understand and act upon.

The system architecture and business intelligence tools use algorithms to generate data patterns and analyses that help Elder Affairs and its network of care providers understand the provision, quality, and impact of home- and community-based services.

The data is updated every day, enabling delivery of nearly real-time insight. As a result, Elder Affairs can quickly address concerns that arise in the course of day-to-day business.

Concept

According to AARP (formerly the American Association of Retired Persons), in 2010 there were 910,000 adults over the age of 65 living in Massachusetts, representing 14% of the total population.

By 2030, older adults are projected to comprise 27% of the state's population. This dramatic demographic shift will drive incredible demand for health services and create a significant impact on the Commonwealth's finances.

To make the most efficient use of resources while ensuring high-quality care and outcomes, it is imperative that Massachusetts – like all states – make the best use of all available data.

The HCBS Explorer directly meets this need by providing interactive consumer, enrollment, assessment, utilization, cost, quality, and outcome reports to decision-makers and program managers at the state and local level.

Use of the tool also advances the Commonwealth's policy of "community first," which aims to empower and support people with disabilities and elders to live with dignity and independence in the community by expanding, strengthening, and integrating systems of community-based long-term supports that are person-centered, high in quality, and provide optimal choice.

Further leveraging the HCBS Explorer research tool and data set will be instrumental in helping to solve an emerging public policy challenge: the unprecedented growth in the older adult population.

Significance

In January 2014, Elder Affairs provided care providers in the ASAP network access to the HCBS Explorer via customizable dashboards. The HCBS Explorer allows users to access appropriate levels of information based on their credential level via a secure web-based portal. Elder Affairs provided training and education about the tool to ASAP Executive Directors and their staffs across the state.

Use of the HBCS Explorer dramatically expands our ability to utilize all available data for program development, quality, outcomes, and research to impact future policy decisions. State leaders and care providers alike use the information made available via the system to improve outcomes, ensure quality, better understand the delivery of HCBS, and continuously prepare for the aging of the Baby Boomer generation.

In addition to the state's own data set, additional data sets, including U.S. Census data and Medicaid claims data, have been integrated into the platform to help users better understand the demographic needs around aging and acquire a more complete picture of the publically-funded services this population is utilizing.

Through this data integration, Elder Affairs can better understand the utilization of publically-funded services among elders which has implications beyond Massachusetts' borders.

Understanding the costs and demand for publically-funded long-term services and supports is important for both the state and other payers – including the federal government and private citizens – of these services. To make the tool even more valuable to users, UMass Medical and Elder Affairs plan to integrate additional data sets, including information on food stamps, housing, and Medicare services.

The tool also provides transparency across the network of care providers. With the exception of identifiable data, all users can see all available data, so ASAPs can compare their performance with other agencies across the state. As no providers want to underperform their peers, this visibility helps encourage high quality in management and delivery of HCBS across the network.

A critical advantage of the Commonwealth's tool is that this approach and model can be adopted by other states. Elder Affairs and UMass Medical have presented this project at

a multitude of national conferences. The National Association of States United for Aging and Disabilities (NASUAD) holds this project out as model for other states to emulate.

Impact

The HCBS Explorer enables executive-level policy makers and program managers at Elder Affairs to understand and validate the value of home- and community-based services, as well as monitor the provision of services to elders.

Through analyses made possible by the tool, Elder Affairs has been able to clearly and decisively demonstrate to decision- and policy-makers the value of home- and community-based services for elders.

Cutting the Commonwealth's Costs in Half

The cost of providing service to elders in the community is approximately half of what the cost would be in a nursing home. Each day, Elder Affairs provides services to over 17,000 elders who meet the criteria for nursing facility care but are able to live at home with supports. Through analysis of data on these consumers and the services they receive, the Commonwealth saves an estimated hundreds of millions of dollars each year by delaying or preventing nursing home admission.

Better Quality of Life

Through effective use of home- and community-based services, elders can remain in their own homes and communities for approximately two to three years longer than they might otherwise be able to. Their length of stay in their communities is important not just for minimizing the cost of publically-provided long-term care, but also for enhancing their quality of life, as it meets the common desire of older adults to remain in their homes.

Crunching the Consumer Numbers to Inform Service Delivery

Elder Affairs and UMass Medical have analyzed differences in cost and utilization due to consumer characteristics. By linking administrative claims data with health status assessment data, the HCBS Explorer highlights how an individual's functional and cognitive status, disease diagnosis, and informal supports has an impact on health care service utilization, costs, and outcomes.

As an example, among elders served by the Elder Affairs' Frail Elder Waiver program, the average per member per month cost in 2013 was $1,600. Individuals assessed as having dementia, who represent 21% of participants, have an average per member per month of $2,265.

Elder Affairs is utilizing this data to understand the costs of care and the needs of the population. This analysis is assisting Elder Affairs in preparing for the projected growth in long-term services and supports. This analysis can also inform other payers of long-term care and the long-term care insurance market by suggesting the cost of care given the characteristics of the elder population.

Enhancing Effectiveness through Preventative Care

Future analyses will focus on which services and supports are most effective at preventing adverse events like hospitalization or nursing facility placement given the

needs of an elder. Through our home care programs, case managers can design a tailored care plan from a menu of home care services including homemaker, personal care, home delivered meals, home health aide, adult day care, and supportive home care aide. Elder Affairs analyzes which services or combination of services produce the desired outcomes based on the needs or characteristics of the elder to design an optimal care plan.

Enhanced Transparency and Quality Measurement

The HCBS Explorer provides enhanced transparency around quality measurement to Elder Affairs and the ASAP network. For example, Elder Affairs and federal requirements necessitate that ASAP case managers assess all consumers enrolled in the home care program to identify concerns about abuse and neglect.

Prior to the deployment of the HCBS Explorer, Elder Affairs and the ASAPs struggled with tracking this measure. Through the tool, Elder Affairs and ASAPs now have access to an interactive report to view their current performance, historical performance, identify consumers who have not been assessed within the past 6 months, and identify consumers when there are concerns about abuse and neglect.

Elder Affairs utilizes this information to ensure that all ASAPs are assessing their consumers on a timely basis and follows up with underperforming ASAPs.

In addition, Elder Affairs reviews the consumer's record within SIMS when abuse and neglect is indicated in the HCBS Explorer report to ensure appropriate and necessary follow-up actions were taken.

Ensuring Timely and Appropriate Care

Elder Affairs, in collaboration with UMass Medical, is working on many quality reports to ensure that consumers are assessed in a timely way and have an appropriate care plan.

The HCBS Explorer includes reports to monitor whether new consumers are assessed within ten days of the referral, eligibility determinations are conducted annually, and care plans are updated at least annually.

In addition to improving the quality of care provided to elders, these reports assist Elder Affairs and the ASAPs in meeting the federal Centers for Medicare and Medicaid Services' (CMS) reporting requirements.

While CMS requires that states only report on a sample of consumers for these quality measures, Elder Affairs is able to report on 100% of consumers as a result of the HCBS Explorer.

Ground-Breaking Predictor – to Help Prevent Falls

A major research deliverable from the HCBS Explorer analysis is an algorithm that predicts whether an elder is likely to experience a fall within the next year. Falling is a common occurrence among elders and it has serious consequences for their well-being.

An estimated 25% of community-dwelling elders fall each year in Massachusetts, at an estimated cost of $674 million in direct medical costs – in addition to associated pain

and suffering. Mitigating the risk of falling has important implications for elders, their families, and the health care system.

Analysis of assessment data revealed that elders with a fall in the previous year, activity of daily living impairment, Alzheimer's disease or related dementia, and environmental hazards in the home among other factors were at increased risk of falling.

Elder Affairs is currently developing a report to identify consumers most at risk of falling so that case managers and nurses can implement interventions to reduce this risk. Within the next 6 months, case managers and nurses will have a report listing their consumers who are most likely to experience a fall and guidelines for the types of actions to take such as promoting falls prevention education or making changes to the home environment to reduce the risk of falling.

Elder Affairs and UMass Medical plan to expand upon this first research project by utilizing the data in the HCBS Explorer to predict the risk of other adverse consumer events such as hospitalization, nursing facility placement, and caregiver burnout.

This type of predictive analysis will assist providers in coordinating care for elders and contribute to improved outcomes for elders and their caregivers.

Going Beyond Home- and Community-Based Services

The data in the HCBS Explorer is not limited to HCBS; it also covers other programs Elder Affairs operates. Through the ASAP network, Elder Affairs manages an Adult Protective Services program that investigates and remedies reports of abuse and neglect against elders.

The HCBS Explorer includes aggregated, comparative data including ASAPs' case screened-in rates, screened-out reasons, reporter types, allegations, and length of investigation time. With this information, Elder Affairs monitors the ASAP operation of the protective services program to ensure consistency and conformity with statues and regulations.

For example, Elder Affairs can easily observe when an ASAP is screening-in cases at a rate lower than the state average or that of other ASAPs within the region. This observation would prompt a follow-up with the protective services director at the ASAP to ensure cases are being screened-in or out as appropriate.

In short, the HCBS Explorer makes actionable information readily available to decision-makers to inform policy, reduce costs, and better serve citizens.

Massachusetts is already finding the HCBS Explorer indispensable as we continuously work to improve services for elders, gain the benefits associated with keeping elders in their homes, and reduce the total cost of care to state government. We look forward to sharing our approach and insight with other states.