Supporting Delivery System Transformation Through Data Integration and Analytics

David Mancuso, PhD • January 13, 2017
Analytics in the State Social and Health Service Environment

- Medicaid expenditures are disproportionately concentrated in populations with multiple comorbid physical and/or behavioral health conditions

- Overall social and health service program costs are driven by a relatively small number of persons with overlapping risk factors and service needs, often exacerbated by extreme poverty, trauma, mental illness, substance use disorders, cognitive limitations or functional impairments

- High-cost clients often have significant social support needs such as the need for economic, housing or employment support, or interventions to reduce the risk of criminal justice involvement

- Increased demand to use state agency data to directly inform care

- Increased emphasis on quality/outcome measurement and value-based payment structures
Data Sources in the DSHS Integrated Client Databases

**Internal**
- DSHS Aging and Long-Term Support
  - Nursing Facilities
  - In-home Services
  - Community Residential Services
  - Functional Assessments
- DSHS Children’s Services
  - Child Protective Services
  - Child Welfare Services
  - Adoption
  - Adoption Support
  - Child Care
  - Out of Home Placement
  - Voluntary Services
  - Family Reconciliation Services
- DSHS Developmental Disabilities
  - Case Management
  - Community Residential Services
  - Personal Care Support
  - Residential Habilitation Centers and Nursing Facilities
- DSHS Behavioral Health
  - Mental Health and Substance Abuse Services
  - Assessments
  - Detoxification
  - Opiate Substitution Treatment
  - Outpatient Treatment
  - Residential Treatment
- DSHS Economic Services
  - Food Stamps
  - TANF and State Family Assistance
  - General Assistance
  - Child Support Services
  - Working Connections Child Care
- DSHS Juvenile Rehabilitation
  - Institutions
  - Dispositional Alternative
  - Community Placement
  - Parole
- DSHS Vocational Rehabilitation
  - Medical and Psychological Services
  - Training, Education, Supplies
  - Case Management
  - Vocational Assessments

**External**
- Washington State Patrol
- Department of Corrections
- Department of Health
- Department of Commerce
- Public Housing
- Housing Choice Vouchers
- Multi-Family Project-Based Vouchers
- Washington State Department of Health
- Employment Security Department
- Department of Commerce
- Department of Health
- Housing and Urban Development
  - Public Housing
  - Housing Choice Vouchers
  - Multi-Family Project-Based Vouchers

De-identified

**Integrated Client Databases**
- School Outcomes
  - Preschool – College
- Arrests
- Charges
- Incarcerations
- Community Supervision
- Hospital Inpatient/Outpatient
- Managed Care
- Physician Services
- Prescription Drugs
- Hours
- Wages
- Births
- Deaths
- Dental Services
- Medical Eligibility
- Housing Assistance
- Emergency Shelter
- Transitional Housing
- Homeless Prevention and Rapid Re-housing
- Permanent Supportive Housing
- Housing and Urban Development
  - Public Housing
  - Housing Choice Vouchers
  - Multi-Family Project-Based Vouchers

**DSHS**
- Research Data Center
- Education Data
- Administrative Office of the Courts
- Department of Corrections
- Health Care Authority
- Employment Security Department
- Department of Health
- Department of Commerce
- Department of Commerce
- Department of Health
- Department of Commerce
- Housing and Urban Development
  - Public Housing
  - Housing Choice Vouchers
  - Multi-Family Project-Based Vouchers
How do we use integrated administrative data?

- **Policy analysis**
  - Example: describing the link between ED utilization and prescription narcotic drug-seeking behavior

- **Program evaluation**
  - Example: evaluating the impact of SUD treatment on health care costs and criminal justice involvement

- **Predictive modeling and clinical decision support**
  - Example: dynamic patient-level risk scoring to identify high-risk dual Medicare/Medicaid enrollees for engagement in Health Homes and to support direct patient care

- **Performance measurement**
  - Example: monitoring health care quality, utilization and “social determinant” outcome measures
Examples of Policy Analyses (and Other Content) Published in 2016

https://www.dshs.wa.gov/sesa/rda/research-reports
<table>
<thead>
<tr>
<th>OVERALL Savings</th>
<th>Cost Detail</th>
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<tr>
<td>$-$248</td>
<td>+$23</td>
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<tr>
<td>$+$23</td>
<td>Nursing Home</td>
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<tr>
<td>$-$18</td>
<td>All Long-Term Care Costs</td>
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<tr>
<td>$-$318</td>
<td>Inpatient Hospital Admission</td>
</tr>
</tbody>
</table>

**Program Evaluation**

*Peer-Reviewed Journal Quality Is Possible on a Rapid-Cycle Timeline*

- Example: “Care Coordination Program for Washington State Medicaid Enrollees Reduced Inpatient Hospital Costs” published in April 2015 Health Affairs
  - Statistically significant reduction in hospital costs
  - Promising reduction in overall Medicaid medical costs

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http://content.healthaffairs.org/search?submit=yes&fulltext=care+coordination+program+for+washington+state+medicaid+enrollees+reduced+inpatient+hospital+costs&x=0&y=0
Predictive Modeling and Clinical Decision Support
Achieving Profound Savings Supporting Direct Client Care

Washington State’s PRISM predictive modeling and clinical decision support application supports a Medicare-Medicaid Dual Eligible Demonstration that produced $21.6 million in Medicare savings in its first year.

Washington MFFS Preliminary Evaluation Report

By Patrick Conway, M.D., CMS Principal Deputy Administrator and Chief Medical Officer

Today we released a report summarizing preliminary results from the Washington Health Homes demonstration under the Medicare-Medicaid Financial Alignment Initiative. This demonstration, which began serving enrollees in July 2013, seeks to leverage Medicaid health homes to improve service quality and integration while reducing costs of care for high-risk, high-cost Medicare-Medicaid enrollees (sometimes referred to as “dual eligibles”) in Washington State.

More than 10.7 million Americans are enrolled in both the Medicare and Medicaid programs. A longstanding barrier to improving quality and reducing costs of care for Medicare-Medicaid enrollees has been a lack of alignment and cohesiveness between the two programs, including misaligned incentives for payers and providers. The Washington Health Homes demonstration tests new mechanisms to coordinate services across Medicare and Medicaid for Washington State Medicare-Medicaid enrollees, and allows the State and the Federal governments to share in savings resulting from quality improvements.

The preliminary results in this report are based on experience during the first demonstration performance period, from July 2013 – December 2014. Despite the relatively short time period, estimates show a reduction of $21.6 million in Medicare spending relative to a comparison group, representing more than 6% savings. Future analysis will include Medicaid spending estimates as the data become available.

The report also includes early quality and utilization results, eligibility and enrollment data, characteristics of the population eligible for the demonstration, beneficiary focus group findings, and a discussion of the initial implementation experience.

While these findings are preliminary, they provide an encouraging first look at how efforts in Washington to improve quality of care by focusing on the needs of high-risk, high-cost members can reduce Medicare spending.

continued
Lessons Learned: Keys to Washington State’s Success

- Senior agency leadership recognizing potential for integrated data analytics to support improved service delivery
- Maintaining connection between analytic staff and program operations
- Supporting service delivery systems rather than “academic” interests
- Maintaining a commitment to analytical integrity to build trust with other agencies, the Legislature, and external stakeholders
- Commitment to engage data owners in timely review of sensitive results before public release
- Initial development occurred within a single large umbrella agency
- Integration of new sources dependent on external partner agency interest
Lessons Learned: Data Integration Challenges

- Obtaining the necessary financial resources
- Establishing effective cross-agency governance structures
- Building and maintaining trust among data owners, including addressing privacy concerns
- Conscripting time from state agency subject matter experts
- Maintaining support of constantly evolving state agency leadership
- Maintaining an analytical data infrastructure in a constantly evolving policy, program and IT system environment
- Recruiting and retaining internal staff with analytical expertise, or finding external contractors with relevant subject matter expertise
- Data are plentiful – analytical skills informed by policy and program expertise are scarce
Questions?

https://www.dshs.wa.gov/sesa/rda/research-reports