Measuring Social Determinants of Health among Low-Income Populations: Early Insights from State Initiatives

December 13, 1:00 – 2:30 pm ET

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Questions?

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Answers to questions that cannot be addressed due to time constraints will be shared after the webinar.
Today’s Speakers

Tricia McGinnis, Vice President, Programs, Center for Health Care Strategies

Anna Spencer, Senior Program Officer, Center for Health Care Strategies

Pamela Riley, Assistant Vice President, Delivery System Reform, The Commonwealth Fund

Sarah Bartelmann, Metrics Manager, Oregon Health Authority

Arlene Ash, Professor of Biostatistics and Health Services Research, University of Massachusetts Medical School
Agenda

- The Commonwealth Fund Approach to Promoting Integration of Medical And Social Services
- How States and Medicaid are Collecting and Using Social Determinants of Health (SDOH) Information
- SDOH Measures in Coordinated Care Organizations: Lessons from Oregon
- Using SDOH Data in Rate Setting: MassHealth Risk Adjustment Model
- Question & Answer Session
About the Center for Health Care Strategies

A non-profit policy center dedicated to improving the health of low-income Americans.
The Commonwealth Fund Approach to Promoting Integration of Medical And Social Services

Measuring Social Determinants of Health among Low-Income Populations: Early Insights from State Initiatives
December 13, 2016

Pamela Riley, M.D., M.P.H.
Assistant Vice President, Delivery System Reform
DELIVERY SYSTEM REFORM PROGRAM GOAL

Improve outcomes and lower costs for two populations:

High-Need, High-Cost

5% OF THE U.S. POPULATION
accounts for
50% OF HEALTH CARE COSTS

Vulnerable

Economically and socially disadvantaged Americans receive
LOWER-QUALITY CARE
and have poorer
HEALTH OUTCOMES
than other groups
ACA: millions of low-income Americans, many with social needs, now covered

Alternative Payment Models: providers increasingly held financially accountable for patient outcomes

Health care providers exploring ways to integrate health and social services
Produce information to help health care organizations connect health care and social service interventions to advance delivery system reform goals.

- Risk-bearing organizations
- Near-term benefits to the health care system
FUTURE DIRECTIONS: GRANTMAKING STRATEGY

Identify payment & policy strategies to spread successful models

- Prevalence of non-medical needs
- Making the value case

Identify care models to address non-medical needs
- Advance quality measurement
Thank You

For further information, please contact:

Pamela Riley, M.D., M.P.H.

pr@cmwf.org

202-292-6703
How States and Medicaid are Collecting and Using SDOH Information

Anna Spencer,
Senior Program Officer,
Center for Health Care Strategies
Growing recognition that non-clinical factors influence the health and outcomes of Medicaid beneficiaries

Social determinants of health (SDOH) strategies are flourishing under value based purchasing models

Medicaid is in unique position to identify and address social determinants

SDOH data collection underpins efforts to address unmet needs, improve health outcomes, and lower costs

Medicaid can institute policy changes to drive consistent collection and use of SDOH data
**Project Overview**

- **AIM:** To understand what SDOH data states are collecting and how they are using it

- **Environmental scan of state-level efforts**
  - KS, MA, MI, NY, OR, TN, VT, WA; Medicaid managed care organizations; Center for Medicare and Medicaid Innovation; and the Association for Community Affiliated Plans
  - Medicaid, Public Health, metrics staff, program/research staff, HIT

- **Key research questions:**
  - How are states defining and collecting SDOH?
  - How are states selecting measures?
  - How are states using patient and population-level SDOH data?
  - What challenges are states facing in capturing SDOH data?
# Data Collection on Common SDOH Domains* by State

<table>
<thead>
<tr>
<th>SDOH Domains</th>
<th>KS</th>
<th>MA</th>
<th>MI</th>
<th>NY</th>
<th>OR</th>
<th>TN</th>
<th>VT</th>
<th>WA</th>
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<tr>
<td>Housing</td>
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<td>Criminal Justice Involvement</td>
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*Data collected from Medicaid beneficiaries at the individual and/or population levels; data not systematically collected from the entire Medicaid population*
Data Collection: Main Findings

- Lack of agreement on SDOH definitions/domains
  - Variation among states, plans, providers

- At national level, absence of SDOH standardized measures
  - Some states using “homegrown” measures and assessments
  - Creates difficulty aggregating data

- States are in early stages of identifying priorities and associated measures
  - Many states start small with sub-population and assessment tools

- Opportunity for Medicaid to drive consistency, rigor to SDOH data collection
Four Key Uses of SDOH Data

- Patient care management
- Incentive and performance programs
- Risk adjustment and rate-setting
- Surveillance and program quality improvement
Patient Care Management

- Patient-level SDOH data
  - Intake/assessment questionnaires
  - Routine care management and coordination

- Common uses
  - Eligibility determination
  - Connect enrollees to community supports and services
Incentive and Performance Programs

- Aggregating patient-level SDOH data for performance accountability
- Embedding SDOH domains into pay for performance measures
  - KS basic performance measures:
    - % of beneficiaries who report being connected to social supports
    - % of beneficiaries who report they are doing what they want for work
  - KS pay-for-performance measures:
    - # and % of beneficiaries with SUD whose employment increased
    - # and % of beneficiaries whose criminal involvement improved
- Performance Improvement Projects
  - OR food security measure
Incorporating patient-level SDOH data in risk adjustment calculations to set reimbursement rates

Provider payments
- NY Health Homes use functional adjustments for incarceration, homelessness, interpersonal violence

MCO and future ACO rate setting
- MassHealth will use risk adjusters that capture homelessness, SUD, neighborhood stress score
Surveillance and Program Quality Improvement

- Analyzing how social factors influence communities and sub-populations, impact interventions, and relate to one another

- Surveillance and monitoring
  - MA Department of Public Health
  - VT Social Vulnerability Index (SVI)

- Program quality improvement and evaluation
  - MI Pathways to Better Health
Challenges to Collecting, Using, and Sharing SDOH data

- Lack of standardized measures and specifications
- Technical barriers
- Administrative barriers
- Data sharing and privacy
- Financial support for SDOH measurement efforts
Key Considerations for Medicaid Agencies to Advance Collection/Use of SDOH Data

- Develop a measurement framework, including:
  - Goals for collection
  - SDOH domains
  - Indicators for measurement
  - Guiding principals for reporting and financing

- Use existing structures to deploy and monitor SDOH data collection (e.g. MCO contracts, quality measurement)

- Involve stakeholders early in measure identification and testing

- Engage SDOH data owners to support data exchange

- Test payment models that incent providers to address SDOH
SDOH Measures in Coordinated Care Organizations: Lessons from Oregon

Sarah Bartelmann, MPH
Metrics Manager
Oregon’s Coordinated Care Model

- Best Practices to manage and coordinate care
- Paying for outcomes and health
- Transparency in price and quality
- Sustainable rate of growth
- Shared responsibility for health
- Measuring Performance

Better Health
Better Care
Lower Costs

Oregon’s 1115 Medicaid Demonstration Waiver, 2012-2017
http://www.oregon.gov/oha/hpa/Medicaid-1115-Waiver

OFFICE OF HEALTH ANALYTICS
Health Policy & Analytics
CCO Incentive Measure Program

• Annual assessment of CCO performance on 18 measures selected by legislatively-established Committee.

• Compare annual performance against prior year (baseline) to see if CCO met an established benchmark, or demonstrated a certain amount of improvement.

• CCO performance tied to ‘quality pool’ (incentive payment); for CY 2016, 4 percent of annual capitation payments are at risk.

http://www.oregon.gov/oha/analytics/Pages/CCO-Baseline-Data.aspx
Moving Incentive Measures Upstream

Process Measures
- Access to care
- Adolescent well care visits
- Colorectal cancer screening
- Dental sealants
- Developmental screening
- ED utilization
- Medical home enrollment
- Timely prenatal care

Population Health Measures
- Childhood immunizations
- Effective contraceptive use
- Tobacco prevalence

Outcomes Measures
Future state
Stakeholder Survey: What would tell you that Health System Transformation in Oregon was successful (and how should we monitor)?

“Healthcare plays a “necessary but not sufficient” role in achieving health system transformation because many of the contributors to improvement will involve changing communities and people’s lives in other ways. Living in poverty, struggling to meet basic needs, living in settings with violence, and social isolation may contribute far more to a population’s health…”

Health status, housing, employment, QALY/mortality, incarceration, kindergarten readiness, built environment, food insecurity, and more

Developing a Food Insecurity Measure

Key Advocates

- Oregon Food Bank
- Primary Care Assn.
- Elders in Action / Older Oregonians Hunger Coalition
- Childhood Hunger Coalition
- Partners for a Hunger-Free OR Provider / Clinic champions
- Health Plans that had already prioritized food insecurity / SDOH WIC
In an ideal world, a food insecurity measure would include...?
Developing a Food Insecurity Measure

Conceptual Considerations

• Are we measuring providers (panel), or health plans (population)?

• Are we measuring screening (process) or results of screen (outcomes)?

• Food insecurity, or food insecurity + malnutrition?

• Community resource availability?

Technical Considerations

• Should the measure be:
  – Survey-based
  – Claims-based
  – EHR-based

• Who is included?
  – Ages
  – Continuous enrollment
  – Exclusions

• Standardized screening tools?

Food Insecurity Measurement: Current State

As of July 2016, the Technical Workgroup recommended that the food insecurity measure be used as an optional PIP measure for additional testing, before moving to the incentive program.

CCOs are exploring different approaches, including provider-level data collection in EHRs, and community-based surveys.
Food Insecurity Measurement:
Technical Assistance

- Building food insecurity screening into an EHR: 15
- How to talk sensitively and effectively with patients about food and nutrition issues and resources: 12
- Identifying available community and partner resources: 12
- Developing and implementing new screening workflows: 12
- Provider and/or health plan staff education: 12
- What are appropriate and effective follow-up options: 11
- Developing community or on-site programs (e.g., veggie Rx): 10
- How to screen to get the most reliable information: 9
Alternate SDOH Data Collection Options

• Medicaid BRFSS Survey

- Twice as many adult Medicaid members reported food insecurity and hunger than all Oregon adults.

- Medicaid: Hunger 22.3%, Food Insecurity 48.6%
- General Population: Hunger 8.2%, Food Insecurity 21.8%

• Integrated Client Services data warehouse
• ICD-10 codes for socioeconomic and psychosocial circumstances
• Annual Health Risk Assessment at enrollment (conceptual)
For More Information

- Metrics & Scoring Committee [http://www.oregon.gov/oha/analytics/Pages/Metrics-Scoring-Committee.aspx](http://www.oregon.gov/oha/analytics/Pages/Metrics-Scoring-Committee.aspx)


- Contact us at metrics.questions@state.or.us
USING SDOH DATA IN RATE SETTING: MASSHEALTH RISK ADJUSTMENT MODEL

Arlene S. Ash, PhD
University of Massachusetts Medical School

SDOH Measurement Webinar
December 13, 2016
Who am I? What is my interest in this?

- Math PhD, Health Services Research methods focus
  - Began HSR work at Boston University (Medicine & Public Health) in 1984
- Since 2009, Professor and QHS Division Chief at UMass Med School [http://www.umassmed.edu/QHS](http://www.umassmed.edu/QHS)
- Developer of models that CMS uses to make risk-adjusted capitation payments for Medicare Advantage
  - Founded DxCG, Inc. (now Verscend), a predictive modeling company, that licenses DxCG software
- Through UMass, am working with MassHealth to expand their DxCG-based model for paying managed care organizations
Outline of the talk

- Objective
- Modeling approach
- The model
- Summary
Objective

- MassHealth (Medicaid) wanted a “total cost of care” model to set rates for accountable care and managed care organizations (ACOs and MCOs)
- MassHealth had been using a claims-based medical-risk model (DxCG) to pay MCOs
- **Goal:** refine the model by adding predictors
  - Especially, *social determinants of health* (SDOH)
(Broadly) what did we add?

- Age-sex categories to ensure proper payments for children
  - Payments for those under age 18 are 33% higher than with the old model

- Disability categories
  - Eligibility reason and agency relationships

- Separately recognized: serious mental illness and substance use disorders

- Housing issues (personal & neighborhood)
Modeling

- The key (interim) product of this work is a new model

- The model predicts COST from:
  - DxCG relative risk score (RRS) and age-sex indicators
  - Markers for unstable housing, disability, serious mental illness, and substance use disorder
  - A summary measure of “neighborhood stress” based upon residence in a census block group

- For now, COST excludes long-term support services (LTSS)

- We continue to conduct research to improve the model
Data

- Calendar year 2013
  - Claims from the (indemnity-based) Primary Care Clinician (PCC) program and “dummy claims” from MCOs
  - Administrative records

- Members enrolled for 183+ days

- Use relationship between member characteristics and costs in the PCC data to determine the relative costliness of each person who enrolls in an MCO
How the model is used (simplified)

- The model assigns a relative risk score (RRS) for each person
  - Someone with RRS = 1 is expected to have average costs; 2 → twice average cost, etc.
- MassHealth determines (separately) how much to pay, on average: say, M = $5000
- The MCO receives RRS*M for each enrollee
- If an MCO’s enrollees have average RRS = 1.1, then it receives 1.1*M = $5,500 per enrollee
Analytic choices

- **Concurrent modeling:** Use risk factors measured in one year to predict costs that same year
  - Weighted regression: weight = fraction of the year enrolled
  - Model is actually *applied* prospectively

- **Outcome:** 2013 costs* to be included in 2017 “global” payments, annualized** then top-coded at $125,000
  * LTSS costs are excluded
  ** $6,000 spent in 6 months = $12,000 annualized
**Population costs and characteristics**

<table>
<thead>
<tr>
<th></th>
<th>PCC CY2013</th>
<th></th>
<th>MCO CY2013</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Members</td>
<td>357,660</td>
<td></td>
<td>524,607</td>
<td></td>
</tr>
<tr>
<td>Member years (11.2 mos. PMPY in each program)</td>
<td>326,501</td>
<td></td>
<td>480,389</td>
<td></td>
</tr>
<tr>
<td>The population</td>
<td>Mean 26.1</td>
<td>SD 18.6</td>
<td>Median 22.0</td>
<td>Mean 21.6</td>
</tr>
<tr>
<td>Age in years</td>
<td>COST* 5,590</td>
<td>SD 11,684</td>
<td>Median 1,719</td>
<td>COST* 4,694</td>
</tr>
<tr>
<td>DxCG Relative Risk Score</td>
<td>1.16</td>
<td>SD 2.29</td>
<td>Median 0.42</td>
<td>0.89</td>
</tr>
</tbody>
</table>

* Top-coding (at $125,000) removes 1.8% and 3.9% of total costs in the PCC and MCO populations, respectively. COST excludes money for services that are not “in the bundle” at this time, including most long-term supportive services.
Model Details (1 of 2)

- **DxCG v4.2 concurrent Medicaid relative risk score (RRS)**

- **Age Specific Indicators**
  - 10 age categories (0-1, 2-5, 6-12, 13-17, 18-24, 25-34, 35-44, 45-54, 55-59, 60+), each for male and female

- **Disability**
  - Department of Mental Health client (DMH)
  - Non-DMH, Department of Developmental Services client (DDS)
  - All others entitled to Medicaid due to disability
Model Details (2 of 2)

- **Behavioral Health**
  - Serious mental illness, substance use disorder

- **Housing Issues**
  - People with 3 or more addresses in a single calendar year **OR** with an ICD code for homeless indicated on a claim or encounter record

- **Neighborhood Stress Score**
  - A composite measure of “financial stress” from census data associated with addresses geocoded to the census block group
Neighborhood Stress Score (NSS7)

- A measure of “economic stress” summarizing 7 census variables identified in a principal components analysis:
  - % of families with incomes < 100% of FPL
  - % < 200% of FPL
  - % of adults who are unemployed
  - % of households receiving public assistance
  - % of households with no car
  - % of households with children and a single parent
  - % of people age 25 or older who have no HS degree

- NSS7 is standardized (Mean = 0; SD = 1)
## New Model Illustrative Numbers

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>% of MCO members in this group (CY13)</th>
<th>Model coefficient, as compared to 1.00 average risk</th>
<th>Dollar increment for members in cohort</th>
<th>Mean overall dollars predicted</th>
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</thead>
<tbody>
<tr>
<td>All Managed Care</td>
<td>100.00</td>
<td></td>
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<td>$5,000</td>
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<tr>
<td>NSS7, per SD unit</td>
<td></td>
<td>0.01</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td>DxCG RRS, per unit</td>
<td></td>
<td>0.66</td>
<td>3,300</td>
<td>-</td>
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<tr>
<td><strong>Risk Group</strong></td>
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<td></td>
<td></td>
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<tr>
<td>DMH client</td>
<td>0.4</td>
<td>2.73</td>
<td>$13,650</td>
<td>$29,700</td>
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<tr>
<td>Not DMH but DDS client</td>
<td>1.1</td>
<td>0.51</td>
<td>2,550</td>
<td>11,450</td>
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<tr>
<td>All other disabled</td>
<td>10.7</td>
<td>0.28</td>
<td>1,400</td>
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<td>Homeless, by ICD code</td>
<td>0.02</td>
<td>0.11</td>
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<td>3+ addresses in a year</td>
<td>11.5</td>
<td>0.11</td>
<td>550</td>
<td>7,400</td>
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<td>10.2</td>
<td>0.45</td>
<td>2,250</td>
<td>16,900</td>
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<tr>
<td>Substance use disorder</td>
<td>6.2</td>
<td>0.40</td>
<td>2,000</td>
<td>15,300</td>
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</tbody>
</table>
Long Term Support Services

• We have no good measure of need for these services (e.g., personal care assistance and adult day health)

• We can predict the costs of occasional LTSS users
  • But, we seriously underestimate both LTSS and other costs of “persistent” LTSS users

• Current “fix”:
  • We removed LTSS costs from both the model and the payment bundle

• We are exploring better ways to address LTSS costs in future bundled payment models
Read more at:

  Under “Previous meetings – 2016”
  October
  UMASS Modeling SDH Summary Report

Direct link

THANK YOU

Arlene.Ash@umassmed.edu
on behalf of the UMass Medical School research team
Question & Answer
Questions?

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Answers to questions that cannot be addressed due to time constraints will be shared after the webinar.
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