Risk Adjustment in Medicaid Using CDPS

Todd Gilmer, PhD

University of California, San Diego

Division of Health Policy, Department of Family and Preventive Medicine

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Overview

- Program and Policy Goals of Risk Adjustment
- Brief History of Risk Adjustment
- Risk Adjustment using CDPS
- Opportunity Frameworks Supported by Risk Adjustment
Program and Policy Goals of Risk Adjustment
What is Risk Adjustment?

- Health based risk assessment – measuring illness burden at the individual or group level using indicators of health status such as diagnoses, pharmaceuticals, cognitive / functional limitations.

- Health based risk adjustment – using estimated illness burden to compare populations, adjust outcomes, or adjust health plan payments.
## Why is Risk Adjustment Necessary?

<table>
<thead>
<tr>
<th>% of Population</th>
<th>% of Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>30%</td>
</tr>
<tr>
<td>10%</td>
<td>72%</td>
</tr>
<tr>
<td>50%</td>
<td>95%</td>
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Goals of Risk Adjustment

- To make **equitable comparisons** among health plans that take the health status of their enrolled members into consideration
- To **minimize the incentives** for plans and providers from selectively enrolling healthier members
- To provide **adequate financing** for those who treat individuals with higher-than-average health needs
Reason for Risk Variation

- A particular health plan’s provider network may predispose it to certain risk selections (e.g., those affiliated with academic medical centers)
- Some geographic regions may include a sicker-than-average mix of enrollees
- Some provider groups may attract specific population subsets (e.g. diabetes, AIDS, children with disabilities)
Benefits of Risk Adjustment

- Allows states to foster competition based on quality and efficiency rather than on risk selection.
- Allows health plans to promote efficiency in care management without the accompanying expenditure risk that results from attracting a sicker population.
- Supports health plans that attract clients with specific service needs.
Key Ingredients for Successful HBP

equitable data
equitable data
equitable data
equitable data
Brief History of Risk Adjustment
History of Risk Adjustment

- Risk adjustment systems developed in academia in the 1990s as a method to adjust capitated payments.
- First models targeted Medicare (DCGs, ACGs).
- Medicare was an early promoter but a late adaptor.
- Medicaid risk adjustment begins in 1997 (ACGs, CDPS).
- Medicare Part C risk adjustment in 2004 (mod-HCC).
- Medicare Part D risk adjustment in 2006 (mod-HCC).
# Medicaid Health-Based Payment Activities

<table>
<thead>
<tr>
<th>State</th>
<th>Population Covered</th>
<th>Year Implemented</th>
<th>Classification System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maryland</td>
<td>SSI + TANF</td>
<td>1997</td>
<td>ACG</td>
</tr>
<tr>
<td>Colorado</td>
<td>SSI + TANF</td>
<td>1997</td>
<td>CDPS</td>
</tr>
<tr>
<td>Oregon</td>
<td>SSI + TANF</td>
<td>1998</td>
<td>CDPS</td>
</tr>
<tr>
<td>Utah</td>
<td>SSI</td>
<td>1998</td>
<td>CDPS</td>
</tr>
<tr>
<td>Michigan</td>
<td>SSI</td>
<td>2000</td>
<td>CDPS</td>
</tr>
<tr>
<td>Minnesota</td>
<td>TANF</td>
<td>2000</td>
<td>ACG</td>
</tr>
<tr>
<td>Delaware</td>
<td>SSI + TANF</td>
<td>2000</td>
<td>CDPS + Rx</td>
</tr>
<tr>
<td>Tennessee</td>
<td>SSI + TANF</td>
<td>2000</td>
<td>ACG</td>
</tr>
<tr>
<td>New Jersey</td>
<td>SSI + TANF</td>
<td>2000</td>
<td>CDPS + Rx</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>SSI + TANF</td>
<td>2003</td>
<td>CDPS + Rx</td>
</tr>
<tr>
<td>Virginia</td>
<td>SSI + TANF</td>
<td>2003</td>
<td>CDPS</td>
</tr>
<tr>
<td>Washington</td>
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<td>2003</td>
<td>CDPS</td>
</tr>
<tr>
<td>Ohio</td>
<td>SSI + TANF</td>
<td>2006</td>
<td>CDPS + Rx</td>
</tr>
<tr>
<td>Florida</td>
<td>SSI + TANF</td>
<td>2006</td>
<td>CDPS + Rx</td>
</tr>
<tr>
<td>California</td>
<td>SSI + TANF</td>
<td>2009</td>
<td>Medicaid Rx</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>SSI + TANF</td>
<td>2009</td>
<td>DxCG</td>
</tr>
<tr>
<td>Arizona</td>
<td>SSI + TANF</td>
<td>2009</td>
<td>ERG</td>
</tr>
<tr>
<td>Louisiana</td>
<td>SSI + TANF</td>
<td>2012</td>
<td>ACG</td>
</tr>
<tr>
<td>New York</td>
<td>SSI + TANF</td>
<td>2012</td>
<td>CRG</td>
</tr>
<tr>
<td>Missouri</td>
<td>TANF</td>
<td>2012</td>
<td>CDPS + Rx</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>SSI + TANF</td>
<td>2014</td>
<td>Medicaid Rx</td>
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Risk Adjustment in Health Care Reform

- State health insurance exchanges will use risk adjustment to adjust payments to health plans that are participating in the exchange.
- Medicaid programs may use risk adjustment to adjust capitation payment to managed care plans that provide coverage for their expansion populations.
Risk Adjustment and Long Term Care

- Dual eligible pilot programs are driving an interest in new risk adjustment models:
  - Focus on Home and Community Based Waiver Services
  - Combine Community and Institutional Long Term Care
  - Combine Medicaid and Medicare

- These models will need to include additional measures predictive of HCB and LTC services
  - Functional and cognitive limitations, social support

- Additional data from clinician and self assessments
  - Web based assessment

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Risk Adjustment and SES

- Substantial literature and growing interest in social determinants of health
  - Income, education, race/ethnicity, language proficiency, epigenetics
- SES may affect risk is complex ways
- Effect of SES on health may be different than the effect of SES on risk (i.e. use of services)
  - Latinos and Asians with Limited English Proficiency (LEP) are more likely to access outpatient vs. inpatient or emergency mental health services
  - LEP is associated with higher medication adherence among Latinos
  - LEP is associated with lower medication adherence among Asians
Risk Adjustment using CDPS
Chronic Illness and Disability Payment System

- CDPS is a risk adjustment system for Medicaid that maps diagnoses to 58 CDPS categories corresponding to major body systems or chronic diseases.
- CDPS is similar to the HCC models used for Medicare, but places a greater emphasis on less common, but costly chronic conditions that are more prevalent among disabled Medicaid beneficiaries.
- CDPS models for disabled, TANF Adults, and TANF Children.
Major CDPS Categories

- Cardiovascular, Psychiatric, Skeletal, Central Nervous System, Pulmonary, Gastrointestinal, Diabetes, Skin, Renal, Substance Abuse, Cancer, Developmental Disability, Genital, Metabolic, Pregnancy, Eye, Cerebrovascular, AIDS/Infectious Disease, Hematological
CDPS Hierarchies

- CDPS categories are hierarchical within major categories
- For example, in the major category cardiovascular:
  - CARVH includes 7 diagnoses, eg heart transplant
  - CARM includes 53 diagnoses, eg heart failure
  - CARL includes 314 diagnoses, eg AMI
  - CAREL includes 35 diagnoses, eg hypertension
Hierarchies and Comorbidities

- Weights are additive across major categories
- Within major categories, only the most severe (i.e. expensive) diagnosis counts
- This allows an accounting of comorbidities, but reduces the incentive for upcoding of diagnoses
- For example, if a beneficiary has both diabetes and depression, both count towards the risk score
- However, if a beneficiary has heart failure and hypertension, only heart failure counts towards the CDPS risk score
Medicaid RX Model

- Pharmaceutical based model uses National Drug Codes (NDC) to assign 45 therapeutic categories
- Developed as an alternative to diagnosis based models when the health plan encounter data is low quality
- Pharmacotherapy vs clinical diagnosis
- Combined CDPS + Rx model using 15 MRX categories that were considered to be the least affected by practice patterns
Options for Payment Weights

- Customized weights
  - Can be specific to utilization/expenditure patterns in the population being risk adjusted
  - Can be specific to the benefit package
  - Requires a large sample size to estimate weights reliably

- Weights ‘off-the-shelf’
  - Readily available
  - Can be applied to smaller populations
  - Less sensitive to small sample errors
Concurrent or Prospective Weights

- Prospective weights predict the cost of care next year for someone with a diagnosis this year
- Concurrent weights predict the cost of care this year for someone with a diagnosis this year
  - Weight on most diagnoses is larger and the weight on ‘no diagnosis’ is smaller, than in prospective weights
  - As a result, the spread of plan risk scores is larger using concurrent weights than prospective weights
Prospective CDPS Weights

- Cardiovascular, very high 2.037
- Cardiovascular, medium 0.805
- Cardiovascular, low 0.368
- Cardiovascular, extra low 0.130

- Psychiatric, high 0.955
- Psychiatric, medium 0.626
- Psychiatric, medium low 0.325
- Psychiatric, low 0.206
Calculating CDPS Scores

- Multiply the CDPS category vector by the weight vector (and sum the factors)
- Include the intercept and age and gender factors
- A 50 year old female with type 2 diabetes and hypertension has a risk factor of 0.798
  - 0.225 + 0.121 + 0.322 + 0.130
- If the same female also had bipolar disorder, her risk factor would be 1.424
  - 0.225 + 0.121 + 0.626 + 0.322 + 0.130
Adjustment at Individual or Plan Level

- Medicare calculates a case-mix score for each beneficiary
  - The case-mix score is multiplied by a county base rate, and separate payment amounts are computed for each member

- Most Medicaid programs calculate an average case-mix score for each plan
  - The same amount is paid for every plan member

- Benefits of plan based adjustment include:
  - Reduced burden on IT, easier to account for new members, and easier to monitor (and adjust) total plan payments
Calculating Payments for Health Plans

- Average the risk scores of all plan enrollees with eligibility in the ‘observation’ period
- Calculate weighted average of all plans; normalize to 1.0 to assure budget neutrality
  - If FFS is included as a ‘plan’ – HBP is not budget neutral in those states
- Pay each plan it’s normalized risk score multiplied by the base rate (eg: $800 PMPM for disabled)
Actuarial Adjustments

- Partial capitation
- Partial risk adjustment
- Risk corridors
- Reinsurance
- Carve-outs (with weight options)
  - Behavioral health carve-outs
  - Pregnancy / delivery carve-outs
  - Pharmacy carve-outs
Opportunity Frameworks Supported by Risk Adjustment
Opportunity Frameworks to Improve the Quality and Efficiency of Health Care

- Chronic Care Model
- Accountable Care Organizations
- Primary Care Medical Homes
- Integration of Physical and Mental Health and Substance Abuse Services
- Disease Care Management
- Complex Chronic Disease Case Management
Common Elements

- Team based care
  - Reorientation from the physician centric model
  - Collaboration and communication is essential
  - Expanded workforce

- Care management
  - Nurses focused on complex chronic conditions
  - Social workers focused on mental health, care transitions, social issues
  - Pharmacists focused on complex pharmacotherapy
  - Peers focused on education and self management training

- IT needed to support the above efforts
Summary

- Risk adjustment is necessary to promote efficiency and to reduce incentives for risk selection
- Risk adjustment appears to get more money to plans that serve sicker people
- Equitable data is a key challenge
- Opportunities for health plans to improve the quality and efficient of health care while supported by risk adjustment