Risk Adjustment: Implications for Community Health Centers

Todd Gilmer, PhD
Division of Health Policy
Department of Family and Preventive Medicine
University of California, San Diego
Overview

- Program and Policy Goals of Risk Adjustment
- Brief History of Risk Adjustment
- Mechanics of Risk Adjustment using CDPS
- Risk Adjustment and Primary Care
- Opportunities for Community Health Centers to Demonstrate Value Added
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 – comparing populations, adjusting outcomes, or adjusting health plan payments using health status.
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>
</tr>
</tbody>
</table>
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
Reasons 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)
Risk Adjustment Applications

- To adjust capitation payments for expected future expenditure based on health status
- To risk profile and/or identify persons for disease or high risk case management
- To adjust observed differences in performance measures, utilization, and/or cost based upon observed differences illness burden
Benefits of Risk Adjustment

- Allows states to foster competition based on quality and efficiency rather than on risk selection
- Supports health plans that attract clients with specific service needs
- Allows health plans to promote efficiency in care management without the accompanying expenditure risk that results from attracting a sicker population
History of Risk Adjustment
Risk Adjustment in Medicaid and Medicare

- 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, DPS)
  - 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>Date Implemented</th>
<th>Classification System</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Implemented</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>SSI + TANF</td>
<td>1997</td>
<td>ACGs</td>
</tr>
<tr>
<td>Colorado</td>
<td>SSI + TANF</td>
<td>1997</td>
<td>DPS</td>
</tr>
<tr>
<td>Oregon</td>
<td>SSI + TANF</td>
<td>1998</td>
<td>DPS</td>
</tr>
<tr>
<td>Utah</td>
<td>SSI</td>
<td>1998</td>
<td>Marker Diagnosis</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>ACGs</td>
</tr>
<tr>
<td>Delaware¹</td>
<td>SSI + TANF</td>
<td>2000</td>
<td>CDPS</td>
</tr>
<tr>
<td>Tennessee</td>
<td>SSI + TANF</td>
<td>2000</td>
<td>CDPS</td>
</tr>
<tr>
<td>New Jersey</td>
<td>SSI</td>
<td>2000</td>
<td>CDPS</td>
</tr>
<tr>
<td>Utah¹</td>
<td>SSI</td>
<td>2000</td>
<td>CDPS</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>SSI + TANF</td>
<td>2003</td>
<td>CDPS</td>
</tr>
<tr>
<td>Washington</td>
<td>TANF</td>
<td>2003</td>
<td>CDPS</td>
</tr>
<tr>
<td>Virginia</td>
<td>SSI + TANF</td>
<td>2003</td>
<td>CDPS</td>
</tr>
<tr>
<td>Ohio</td>
<td>SSI + TANF</td>
<td>2006</td>
<td>CDPS</td>
</tr>
<tr>
<td>Oregon Mental Health</td>
<td>SSI + TANF</td>
<td>2006</td>
<td>CDPS-MH</td>
</tr>
<tr>
<td>Florida</td>
<td>SSI + TANF</td>
<td>2006</td>
<td>MedicaidRx</td>
</tr>
</tbody>
</table>

¹ No longer contracting with MCOs on a risk basis.
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 diving and interest in risk adjustment models that span Medicare and Medicaid, and home and community based and institutional long term care

- 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
  - WI uses web based assessment
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 LEP are more likely to access outpatient vs. inpatient or emergency MH services
  - LEP is associated with higher medication adherence among Latinos
  - LEP is associated with lower medication adherence among Asians
Mechanics of Risk Adjustment Using CDPS
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 models used for Medicare (ie HCCs), 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.
Estimating CDPS Weights

- National Medicaid claims data, 2005-2007
- Linear regression is used to regress expenditures on the vector of CDPS categories
- Weights are resulting regression coefficients, also the marginal expenditure effects for each category
- For example, when expenditure $= Y$ (mean=1.0):
  - $Y = \text{Intercept} + b1*CDPS1 + b2*CDPS2 + \ldots + b58*CDPS58$
  - CDPSi are indicator variables (0,1 s) and bi are the estimated coefficients
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 .798
  - $0.225 + 0.121 + 0.322 + 0.130$

- If the same female also had bipolar disorder, her risk factor would be 1.424
  - $0.225 + 0.121 + 0.626 + 0.322 + 0.130$
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 its 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
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
Results of Risk Adjustment

- In CO, for PWDs, a University and Children’s Hospital has a case-mix of 1.35
- In OR, a plan that uses Oregon Health Sciences University has a case-mix of 1.13
- In MD and NJ, implementation errors created major problems requiring retroactive adjustments; problems have been corrected and the states are moving forward
Results of Risk Adjustment

- Risk adjustment appears to get more money to plans that serve sicker people
- Equitable data is key technical challenge
- Not much evidence yet that plans or providers respond by developing systems of care to attract sicker people
- Risk adjustment models are also widely used to profile illness burden and to identify beneficiaries with multiple chronic conditions for complex case management
Risk Adjustment and Primary Care
Risk Adjusted Primary Care

- Risk adjustment models have been primarily used to adjust premium payments
  - Acute care (sometimes with carve-outs)
  - Pharmacy coverage (i.e. Part D)

- Risk adjustment models have not been widely used to pay for primary care
  - Primary care is more likely to be integrated (e.g. Kaiser) or paid by fee-for-service

- There is a growing interest in capitated payment for primary care
  - Either fully capitated (and risk adjusted) or partial capitated with FFS component
Risk Adjustment and Scope of Primary Care Services

- It can be a challenge to identify the appropriate scope of services
  - In Medicare, this might be part B
  - In Medicaid, there is wide use of ‘other providers’ and ‘other services’

- Under health care reform, the appropriate scope of services may be changing
  - Medical health care homes, care management, electronic health records, community integration
Data Available to Primary Care Providers

- May be limited to services provided in primary care / primary care clinic
- Missing inpatient diagnoses, diagnoses from other providers and other services, pharmacy data
- Clinical profiles may be incomplete without these data
- Might be possible to obtain these data from the health plan.
Care Coordination and Cost Offsets

- It is often difficult to coordinate care across primary care and other providers such as hospitals and specialists.

- Improved care coordination and health promotion activities may result in reduced costs in other sectors.

- This might justify a rebalancing of payments to primary care and other providers.
Diabetes Management

- Diabetes case management and self management training was provided to newly insurance adults
- Participants were compared to non-participants
- Improved clinical risk factors (eg A1c, BP, lipids)
- Increased costs related to care coordination and pharmaceuticals
- Reduced costs for inpatient and emergency services
- Cost neutral, quality improvement
Opportunities for Community Health Centers to Demonstrate Value Added
Opportunity Frameworks

- 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
Conclusions

- Risk adjustment does not currently impact primary care directly, although there may be indirect effects operating through the health plans
- Opportunities and risk in capitated primary care
- Multiple avenues for community health centers to demonstrate value through improved care coordination and improved quality of care
- Also an opportunity to expand the scope of primary care / clinic services