Purpose of our synthesis

- Summarize state of the art of risk adjustment
- Identify remaining shortcomings
- Suggest possible solutions
Uses of risk adjustment

- Minimize health plans’ opportunities to profit through favorable selection
- Ensure plans have adequate resources to provide for high-risk members
- Adjust quality measures for differences in case mix severity
- Key factor for ACA coverage expansion
Synthesis methods

- Focus on health plan capitation
- Review of literature from past 20 years
- Evidence from
  - Medicare Advantage (MA),
  - Other public and commercial risk adjustment users,
  - Foreign health care systems with managed competition
- Includes scholarly literature, government and industry, interviews
Research questions

- How does risk adjustment work and how can its effectiveness be measured?
- What models and data are used and how do they compare?
- What improvements have been tested and how well do they work?
- How vulnerable is risk adjustment to manipulation and how can it be avoided?
- How can we measure risk for the newly enrolled?
- How effective is risk adjustment overall?
How can effectiveness be measured?

- Risk adjustment begins with risk assessment
- Percentage of variation explained by risk factors
- Mean absolute prediction error
- Predictive ratio for beneficiary groups
- Predictable profits
What models and data are used and how do they compare?

- Most models begin with diagnoses from encounter records
- Conditions can be inferred from prescription drugs
- Episodes of care include information about treatments
- Predictive power similar across models; short of health plans’ underwriting models
Some improvements involve more/better data

- Longer diagnostic history identifies more patients with chronic conditions
- Adding prescription drugs to encounter data is redundant if encounter model is complete, but increases power if it is not
- Survey measures can identify health status and special needs
- Clinical data may make future models stronger
Other improvements involve changes to modeling methods

- Concurrent models fit the data better but do not eliminate predictable profits
- Including prior use or prior expenditures reduces predictable profits
- Truncation of costs reduces influence of unpredictable events
How vulnerable is risk adjustment to manipulation and what can be done about it?

- “Coding creep” increases profits by recording more diagnoses
  - CMS reduces all MA payments to compensate

- Adjustment based on treatment or concurrent diagnoses more vulnerable
  - Gameable diagnoses, prescriptions, treatments are excluded, but that makes models weaker
How can risk be measured for those with no claims history?

- New enrollee models underpredict for chronic conditions
- Group adjustment is based on the prevalence of conditions within a population
- Concurrent adjustment uses post-enrollment information
How effective is risk adjustment overall?

- Broadens risk profile of covered population
  - MA covered population has become more diverse
- Biased disenrollment
  - Group with highest risk-adjusted costs most likely to disenroll
- Biased enrollment
  - MA enrollees have lower pre-enrollment costs within risk adjustment categories
- Other programs with risk adjustment show results similar to MA
Summary/Conclusions

- Improvement continues, but shortcomings remain
  - Predictable profits and losses from all models
  - Benefits designed to attract healthy

- Trade-offs between risk-adjustment effectiveness and incentives:
  - Truncating high-cost cases
  - Including prior-year costs as predictor
Suggestion 1: Better Data

- Add concurrent diagnoses for select conditions to prospective adjuster
- Use diagnosis data from 2 prior years
- Add survey measures of frailty for subsets
- Include lab data to reflect severity
- Challenges: data cost, gaming
Suggestion 2: Include Number of Non-preventable Prior Hospitalizations in Adjuster

- Reflects effects of some prior costs
- Doesn’t reduce reward to plans from reducing costs
- Challenge: coding; “non-preventable” hospitalizations can be reduced by case management
Suggestion 3: Reduce the Returns to Gaming

- Compare risk adjuster to best possible predictor plans could use
- Replace universal reduction for upcoding with plan-specific penalties
- Challenge: devising proper incentives
Suggestion 4: Incentivize Retention of High-Risk Patients

- Reward plans that profit less from disenrollment
- Truncate costs for extreme outliers and provide reinsurance to cover liability
- Challenges: plans’ objections; cost of reinsurance; no incentive for extreme cases