Risk Adjustment for ESRD

Mel Ingber

Office of Research,
Development, and Information

July 14, 2003

Risk Adjustment - Basics

The application of a set of underwriting factors to determine premiums

- Prospective model – diagnoses from year prior to payment used, but ESRD status is concurrent
- Model captures systematic risk of populations
- Payment neutral to inpatient/ambulatory diagnosis source
- ESRD system neutral to treatment type except for dialysis, transplant or functioning graft status

CMS-HCC Model – a compromise

- Diagnosis sources: inpatient hospital outpatient hospital, clinical practitioners
- Model has selected significant diseases across body systems - reduced set of diagnoses compared to comprehensive
- Data: Diagnosis lists, encounters optional
- Overall power slightly reduced from more comprehensive version
- Link of diseases and status to payment is clear

CMS-HCC Model – ESRD

- New model using risk adjustment for the ESRD eligibles in M+C and demonstrations

  Three subgroups:

  - Dialysis - recalibrated CMS-HCC model
  - Transplant - special factor for 3 months
  - Functioning graft - regular CMS-HCC model + factor for immunosuppressive drugs and added intensity

Dialysis Status Model – Structure

Additive model: factors for demographic characteristics + factors for diagnoses

Payment = County rate * Risk factor

- Total risk factor for a person =
- factor for an age/sex group
- + a factor for Medicaid (if any)
- + a factor for aged person who was originally eligible due to disability
- + factors for all disease groups that apply
- + factors for certain combinations of diseases or disease and age

CMS-HCC Model – Structure

Additive model: factors for demographic characteristics + factors for diagnoses

Demographics	Diagnoses if present
One of: Female age 0-34 … Female age 85+ … Male age 0-34 … Male age 85+	+ Septicemia
	+ Opportunistic Infections
+ Medicaid	+ *highest group present in a hierarchy:* Diabetes w. renal manif … Diabetes w. neuro. manif.
+ Originally eligible due to ESRD or disability	+ Congestive Heart Failure
	+ ….

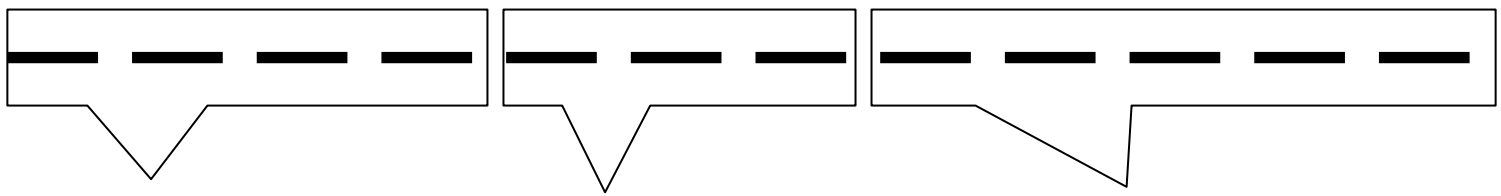
Other Model Components

- Transplant model is a single factor paid for each of three months
  - Constructed from costs of inpatient discharge + 2 months following
- Functioning graft model is the CMS-HCC general population model, plus
  - Factors for over/under 65 and whether over/under 2 years since transplant
- New Enrollee model is for those dialysis patients without at least 1 year Part A and B coverage
  - Factors for age, sex, Medicaid, Originally disabled

Model Development

- All ESRD beneficiaries in 1999 and 2000
- Diagnoses from 1999 collected
- Expenditures for 2000 allocated by month to dialysis, transplant, functioning graft status

Example:



Ratebook Development

- For dialysis and transplant groups, base rates are computed by state.
- The rate is an expenditure standardized for health.

$$\text{Rate} = \frac{\text{Per capita monthly expenditure in area}}{\text{Average risk factor for area}}$$

Numerator: State average total monthly per capita expenditures for persons on dialysis

Denominator: relative health status in state

= (State predicted monthly per capita expenditures)

÷ (National predicted monthly per capita expenditures) for persons on dialysis

Ratebook Development (con'd)

- Base rates were first computed for CY 2000
- Actuary then projected base rates to CY 2004 by increasing state rates each year by the National Growth Rate
- Dialysis ratebook is the basis for Dialysis, Transplant and New Enrollee payments
- General population ratebook is used for functioning graft enrollees

ESRD Disease Management Demonstration Risk-Sharing

Rich Coyle

Office of the Actuary

July 14, 2003

Discussion Outline

- Risk-sharing Overview (capitation option)
- Example
- Support for Medical Loss Ratio Target
- Reconciliation

Risk-sharing Overview

- Establish a target & CMS shares gains / losses with organization
- Target medical loss ratio (MLR) = projected net medical expenses / projected net revenues
- Organization will take 100 percent risk for a minimum 2 percent corridor
- Symmetrical

Net Revenues & Net Medical Expenses

Net Revenues =

- CMS capitation
- less 5 percent withhold for quality
- plus premium (enrollee or third-party)

Net Medical Expense =

- provider reimbursement (net of cost-sharing)
- less recoveries for coordination-of-benefits (COB), pharmacy rebates, reinsurance, etc.

Example: Target MLR Development

Projected net revenues (PMPM)	
Capitation	$5,000
less quality withhold	-$250
plus premium	$75
equals net revenue	$4,825
Projected net medical expense (PMPM)	$4,473
Target medical loss ratio	92.7%

* For example:
  2 percent full risk-corridor / 50% risk-sharing thereafter

Example: Calculation of gain (loss)

- Actual net revenues (500 enrollees)

  $4,825 * 12 * 500 = $28,950,000
- Actual net medical expense = $25,765,500
- Actual MLR = 89.0%
- Gross gain = $1,071,150

  [$28,950,000 * (.927 - .890) = $1,071,150]
- Gain to be shared with CMS = $246,075

  {$28,950,000 * [(.927 – .02) - .890] * (.5)}

Support of MLR Target: Enrollment & Revenues

- Enrollment by state
- Projected characteristics of enrollment
  - Modality distribution
  - Age / sex distribution
  - Risk scores
- Resulting average capitation (PMPM)

Support of MLR Target: Medical Expenses

- Projection of PMPM medical expenses
  - Gross costs, cost-sharing, & resulting net costs
  - Reported by benefit category
  - Utilization & per-service cost assumptions
  - Illustration of in-network & out-of-network reimbursement

Support of MLR Target: Medical Expenses (cont'd)

- Actuarial assumptions
  - Prices relative to fee-for-service (FFS) Medicare (by benefit category)
  - Utilization and case-mix relative to FFS Medicare (by benefit category)
  - Actuarial certification

Risk-sharing Reconciliation

- Actual results will be reported to CMS 12 months after close of contract year
  - Allows for reasonable claims “run-off”
- CMS reserves the right to audit results

Risk-sharing Example: Fee-for-Service (FFS) Model

Sid Mazumdar

Office of Research, Development, and Information

July 14, 2003

Risk-sharing Example (FFS)

Monthly risk-adjusted capitation rate	$5,500.00
Annual risk-adjusted capitation rate	$66,000.00
1% Medicare savings deduction	- $112.32
($72.35-$71.63) * 13 * 12 = $112.32	
Target	$65,887.68

Risk-sharing Example (FFS) (con'd)

Target	$65,887.68
2% Corridor Below	$64,569.93
$65,887.68 * 0.98 = $64,569.93	
2% Corridor Above	$67,205.43
$65,887.68 * 1.02= $67,205.43	

Savings Scenario

- Medicare payment incurred by patient $60,000.00
- Savings $4,569.93

  $64,569.93 – $60,000.00 = $4,569.93
- 50/50 Risk sharing

  CMS reimburses organization $2,284.97

Loss Scenario

- Medicare payment incurred by patient $70,000.00
- Losses $2,794.57

  $70,000.00 – $67,205.43 = $2,794.57
- 50/50 Risk sharing

  Organization reimburses CMS $1,397.29

Maximum Risk

- Maximum Gain or Loss = amount of the add-on expanded bundle payment per patient per year

$71.63 * 13 * 12 = $11,174.28