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RISK ADJUSTMENT
for the CMS MEDICARE ADVANTAGE PROGRAM in the US

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OVERVIEW Of Presentation

- What Risk Adjustment Is (In The Context Of The Medicare Advantage (MA) Program)
- Why It Was Developed
- How It Works, in General
  - How It Works For Medical Revenue
  - How It Works For Pharmacy Revenue
- Implementation, Execution, and Evolution
- How & Why Risk Adjustment (RA) Is Evolving
- Conclusion

RA—What It Is

- A method of adjusting revenue paid by the government to private Medicare Advantage Organizations (MAOs) to reflect the health status of their insured populations
- Each enrolled MA member is assigned a risk score based on diagnoses recorded in prior hospital and professional claims
- MAO receives more revenue for unhealthy members, and less for healthy.

What It Is (2)

- Age and Gender are the starting point in calculating the risk score of each member
- Risk Adjustment (RA) is based on diagnoses recorded in **prior** hospital and professional claims; member's A/G base score is then increased to reflect additional costs due to health condition(s)
- Scores were established for four different categories—Community, Institutionalized, ESRD, and New Member.

What It Is (3)

- Key demographic data is captured from eligibility data files—most definitive source
- MA RA is **Individual** (not Aggregate) and **Prospective** (not Concurrent or Retrospctv)
- Thus, broken arm in prior period matters less to future cost than incurable disease
- Payments made for each member on monthly basis several days in advance

Simplified Example

If CMS pays a benchmark MA rate of $800 PMPM revenue in a county for a 1.0 beneficiary, CMS will pay:

- $1,600 for bene. w/ risk score of 2.0
- $720 for bene. w/ 0.9
- $400 for bene. w/ 0.5

Medicare Advantage (MA)

- There are ~ 43 - 44 million people in the US eligible for Medicare—85% are seniors, 15% are disabled, including 0.5% with ESRD
- ~ 9 million in MA (Part C of Medicare). They are a subset of the above, and they **select** MA of their own choice. Guaranteed issue. Not open to ESRD
- ~ 34 – 35 million remain in FFS A/B Medicare

The existence of two population subsets, one of which selects, requires the use of RA in order to quantify the actuarial difference between them.

Why It Was Developed

- Prior to RA, member revenue reflected Age, Gender, & Geog. Region—not health status
- Thus, private companies in Mgd Medicare had an economic incentive to enroll those healthy for their age. Unhealthy members involved more claim risk for same revenue
- However, the gov't was looking to private companies to coordinate & manage health care, esp. for the chronically ill and other less healthy Medicare beneficiaries who are responsible for large share of Medicare cost.

Why (2)

- RA was phased into existence to discourage private plans from “cherry-picking” the healthier members
- If MAO can coordinate care and medically manage cost well (better than competitors), there may be an economic incentive for it to enroll less healthy members—a new game

(FFS A/B Medicare is almost “unmanaged,” but unit cost is highly controlled by the government.)

Why (3)

- Under Medicare Adv, MAOs compete on cost & benefit plan via the management of medical cost, profit, and administrative cost—these are reflected in MA health plans that are “richer” than FFS A/B Medicare at no or low member cost
- RA forces MAO to focus on managing care and admin cost, not on avoiding risk
- Intent of RA is to reward MAO fairly for the risk in the health status of their members.

HOW IT WORKS

- Each member enrolled in MA (Part C of Medicare) is assigned a risk score based first on age/gender and then on the accumulated health conditions recorded as diagnoses in their claims history
- Part D members are also assigned a risk score
- Two different systems for Parts C and D—
    - CMS-HCC (Part C, Medical)
    - RXHCC (Part D, Pharmacy)

This presentation will emphasize CMS-HCC.

HOW IT WORKS (2)

- It is similar in concept to individual or small group medical underwriting using health questionnaires and a debit point manual, except RA uses actual claims data, thus no "liars' club" where everyone is a non-smoker
- With medical UW, additional points are applied for each health condition that applicant reports on health questionnaire, and conditions add up to a total score
- … but MAOs cannot decline MA applicants.

Part C of Medicare (MA)

- RA of medical revenue was phased in at:

2000	2001	2002	2003	2004	2005	2006	2007
10%	10%	10%	10%	30%	50%	75%	100%

PIP-DCG: 2000 – 2003. Based on inpatient claims only. (Unintentionally penalized HMOs that reduce or eliminate unnecessary hospital admissions)

CMS-HCC: 2004 – today. Based on hospital and ambulatory claims. Developed from DCG/HCC model

CMS-HCC
(Hierarchical Condition Categories)

- 15,000 + ICD-9-CM Diagnosis Codes → that map to
- 804 mutually exclusive Dx Groups →
- 189 Condition Categories → (hierarchies imposed such that member is coded only for most severe manifestation among related disease categories)
- 70 HCC Disease Groups (reflect hierarchies for similar diseases, but accumulate for unrelated)

Diagnoses to establish HCCs from 5 sources (using hospital and professional claims on UB-2004 and CMS-1500 forms):

1) Principal diagnosis from inpatient claim
2) Secondary "
3) Hospital outpatient
4) Physician
5) Non-Physician Medical Professional claims.

CMS-HCC (2)

Ten principles established to guide the creation of the diagnostic classification system; Diagnostic Categories should:

1. Be clinically meaningful
2. Predict medical cost
3. Have adequate sample size
4. Use hierarchies to characterize person's illness level
5. Encourage specific coding
6. Not reward proliferation of diagnosis codes by providers
7. Not penalize providers for recording additional diagnoses
8. Comprise a system that is internally consistent (rankable)
9. Assign each and every one of the 15,000 + ICD codes
10. Exclude discretionary DCs from payment models

PROSPECTIVE means that Past Diagnosis Implies Future Cost

- 2008 revenue ultimately based on diagnoses reported on claims incurred in 2007
- Data is “lagged”
- Initially, the payments for Jan – June 2008 are based on Jul 2006 – June 2007 claims
- July to Dec 2008 based on Cal Yr 2007, and Jan – Jun 2008 revenue is re-stated to reflect the full 2007 Cal Yr—this is called the “mid-year sweep.”

Predictive Accuracy of CMS-HCC

- CMS-HCC is ~ 12x better than A / G only
- R-squared is the percentage of variation from the mean that is explained the RA method; it is ~ 10% for individual prediction
- As group size increases, variance from the mean decreases—there is less variation to explain
- Must predict well at MAO and bid level
- CMS-HCC performs well at aggregated level, but its primary advantage is that it obviates MAO's selection bias to enroll healthy members—that's the point.

Example of a Member Risk Score based on 2009 CMS-HCC Risk Adjustment Factors

(Note: These numerical values were somewhat different in the 2007 calibration.)

83 YEAR OLD FEMALE

		Residing in Community	Residing in Institution
Age / Gender		0.544	0.775
Diabetes w/out complication, HCC 19		0.162	0.248
+ Inflamatory Bowel Disease HCC 33		0.241	0.205
+ Congestive Heart Failure, HCC 80		0.410	0.228
RISK SCORE		1.357	1.456
County Rate for Comm. or Inst.	x	$800	$800
PAYMENT	=	$1,085.60	$1,164.80

Example 2, Member Risk Score

Community Dwelling 87 YEAR OLD MALE with ESRD
(End Stage Renal Disease)

Age / Gender			**0.692**
+	**Diabetes w/out complication, HCC 19**		**0.162**
+	**Inflamatory Bowel Disease HCC 33**		**0.241**
+	**Congestive Heart Failure, HCC 80**		**0.410**
RISK SCORE			**1.505**
County Rate for ESRD		**x**	**$6,220**
PAYMENT		**=**	**$9,361.10**

Source: 2009 CMS-HCC Risk Adjustment Factors

Example 3 of a Member Risk Score

NEWLY ENROLLED 65 Year Old Female

Not Medicaid Elig		Medicaid Elig	
Not Originally Dis	Orig. Disabled	Not Originally Dis	Orig. Disabled
0.497	1.096	0.958	1.557

2009 CMS-HCC Model for New Enrollees

County Rate is $800 PMPM, as for Comm. & Inst.--
multiply (risk score) x (county rate)

$397.60	$876.80	$766.40	$1,245.60

RXHCC

- Part D program began on Jan 1, 2006—biggest change to Medicare since inception
- RA was 100% phased-in on 1/1/2006
- Algorithm to establish RXHCC risk score:
  - Age / Gender base score is established,
  - add points for diagnoses,
  - add points if member is Medicaid eligible,
  - add points if member is Institutionalized.

RXHCC (2)

- Part D did not exist before 1/1/06, so the model was calibrated to pharmacy claims for retirees in the FEHBP
- For first few years, risk scores based on Part A and B data
- RXHCC uses 84 disease groups that help predict drug utilization.

Implementation, Execution, and Evolution of RA for MA

- Two decades of research went into MA RA
- Operational cost & effort to implement RA was also high for private players
- MAOs now work harder to assure that their providers submit claims that are fully coded to the highest level of specificity
- Some providers may initially see it as more work for same pay. (FFS doc must record only 1 diagnosis to get paid for an office visit).

Imp., Exec., & Evolution (2)

- Some MAOs with capitated physicians were initially concerned about their revenue because capped docs were notorious for incomplete coding of encounters, procedures, and thus diagnoses.
- Providers that are paid on a percentage of revenue basis tend to quickly learn the value of complete diagnosis coding (all diagnoses)
- Some MAO's risk scores have increased more than others and they have received the largest revenue increases—the reward for capturing all diagnoses.

I, E, & E (3)

- CMS-HCC is recalibrated biennially to reflect the shifts in average relative expenditures among disease groups—it is revenue neutral across the nation, but not for each MAO
- Coincides w/ the biennial rebasing of FFS rates
- Example—for '07, CMS reduced diabetes factors; increased points for cancer. Diabetes decreased again for '09, metastatic cancer factor increased
- DRA permits reduction to MA risk scores to reflect the increase in intensity of provider coding for MA relative to FFS Medicare.

Evol. (4)—Checks and Balances

- Gaming of the system will prompt reform
- CMS will audit medical records from sample of MA plans to determine the accuracy of the diagnosis code information they submit
- If coding errors detected in audit, payments will be reconciled at the plan level
- If significant difference between MA and FFS Medicare can be attributed to coding patterns, rates will be adjusted in 2010.

RECAP

We covered Risk Adjustment for Med Adv:

- What It Is
- Why It Was Developed
- How It Works
  - for Medical Revenue
  - for Pharmacy Revenue
- Implementation, Execution, and Evolution
- How and Why RA Is Evolving

CONCLUSION

- RA is necessary in a multi-payer system in which members can select between 2 or more payers, such as MA vs FFS Medicare
- CMS-HCC is an Individual, Prospective system based on hospital and professional claims. It's intended to promote fair payment from gov't. to private plans participating in MA, regardless of member health status.
- CMS is continually evaluating RA—both its accuracy, equity, and effect on stakeholders.

CONCLUSION (2)

- RA for MA helps to match public health care resources to the public's medical needs
- RA for MA has finally enabled MedPAC to understand the efficiency of Medicare Advantage (as a system to finance and deliver health care) relative to traditional FFS A/B Medicare, thus enabling the gov't to make more informed public health care policy decisions involving hundreds of billions of 2008 dollars in annual spending.

THANK YOU

- Enjoy your stay in Boston!

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Appendix—
Links to More Info on RA for MA

- The CMS website—there's a lot of info there—surf it if you can:
  http://www.cms.hhs.gov/
- Article on the CMS website on the subject of CMS-HCC
  http://www.cms.hhs.gov/HealthCareFinancingReview/Downloads/04Summerpg119.pdf
- Article on the CMS website on the subject of RXHCC
  http://www.cms.hhs.gov/HealthCareFinancingReview/PastArticles/itemdetail.asp?filterType=none&filterByDID=-99&sortByDID=3&sortOrder=descending&itemID=CMS1206483&intNumPerPage=10

Also see articles on Predictive Models, RA for MA and Medicaid in back issues of *Health Watch* magazine, the newsletter of the Health Section of the Society of Actuaries:

http://www.soa.org