



Healthy Families, Healthy Communities



So You Want to be a (Health) Actuary

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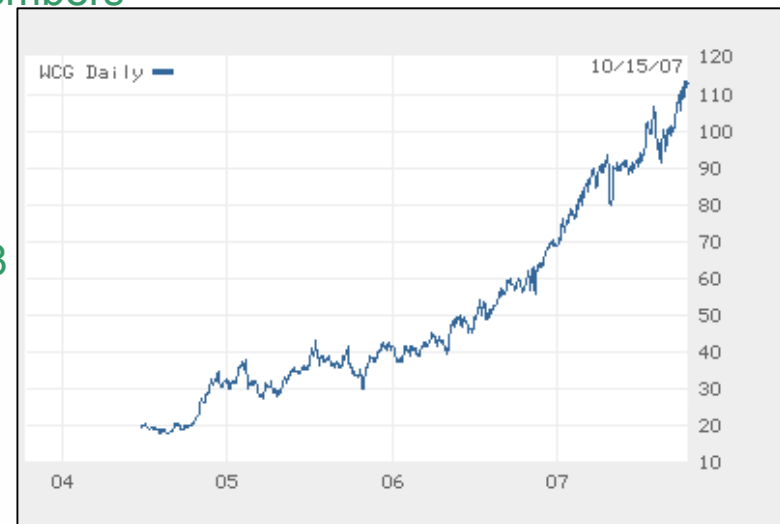
About WellCare Health Plans, Inc.



- Founded in 1985
- Headquarters in Tampa, FL
- Highlights in 2Q 2007
 - Overall membership more than 2,300,000; 15% growth year-over-year
 - Second quarter revenues grew to \$1.34 billion; up 57% year-over-year
 - Second quarter net income grew to \$54.6 million; up 146% year-over-year
 - Medicare Advantage membership grew 72% year-to-date
 - PDP membership grew to over 970,000 members
 - New health plans launched in Georgia with over 435,000 members
 - PFFS launched in 2007 with 50,000 members

- Stock performance (NYSE: WCG)

- IPO in 2004 = \$17.00
- 10/15/2007 close= \$113.03
- Highest price on 10/11/2007 = \$ 115.58



About WellCare Health Plans, Inc.



- Actuarial Department

- Located in Tampa, Corporate HQ
- Some actuarial staff located in Atlanta, GA
- 23 full-time actuaries and students
 - 8 FSA's, 5 ASA's
- Actuarial Development Program
 - Competitive exam assistance program
 - Sponsored study-time
 - Fees for books, exams, seminars
 - Compensation increases for successful results and milestones (FSA and ASA)
- Recruiting for Fall 2007 and Spring 2008 full-time employment
- Exam requirement – 1 SOA exam passed prior to consideration

WellCare's Vision/Mission



- Vision – To be the leader in government-sponsored healthcare programs in partnership with the members, governments, and communities we serve.
- Mission – WellCare will:
 - Enhance our members' health and quality of life;
 - Partner with providers and governments to provide quality, cost-effective healthcare solutions;
 - Create a rewarding and enriching environment for our associates.

Overview of Discussion



- Primary health insurance markets
- Roles for actuaries in health insurance
- Health actuarial application - Reserving
- Why to become a health actuary

Primary Health Insurance Markets



- “Commercial” (State)
 - Group coverage (i.e., through employer or association)
 - Individual
- Medicare (CMS)
 - Medicare Advantage (MA)
 - Prescription Drug (PDP)
 - Combination (MA-PD)
 - Group retiree
- Medicaid (State, CMS)
 - TANF
 - SSI
 - Dual-Eligibles
- CHP (State, CMS)
- Special Products (generally State)

Roles for Actuaries in Health Insurance



- Product development
- Experience monitoring and assessment
- Financial reporting and reserving
- Reinsurance
- Provider contracting
- Underwriting
- Data warehouse and data integrity
- Financial planning and forecasting
- Corporate risk management
- Strategic planning

Some terminology



- PMPM (per member per month)
 - for claims $PMPM = (U \times C) / 12,000$ where:
 - U = annual utilization per 1,000 members
 - C = average cost per utilization
 - for revenue $PMPM = \text{Total Dollars} / \text{Total Member Months}$
- MBR (medical benefits ratio. AKA “loss ratio”)
 - percent of revenue that is paid out in claim dollars
 - $MBR = (\text{claims} / \text{revenue})$
- CF (completion factor)
 - percent of estimated ultimate claims that have been paid
 - used in reserving to estimate ultimate incurred claims
 - incurred claims represent claims attributable as a liability for a particular time period
 - different from paid claims which may be paid in a certain time period but are liabilities for multiple time periods

Illustration of incurred vs. paid claims



<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
Sep	100	215	475	280

- The chart above is referred to “claims triangle” and illustrates the claim payment pattern observed over time.
- The payment runout in the claims triangle will differ by type of service (i.e., hospital, physician, RX) and business characteristics of population (i.e., Medicare, Medicaid).
- Paid claims for Aug are 875 (=200+450+225).
- Incurred claims (paid so far) for Aug are 700 (=225+475).
- Claims incurred and paid in Aug are 225.
- Triangle construction is used in reserving.

Application – Reserving



- Each month, an **estimate** of total claim expense must be “booked.”
- Known paid claims are a portion of this expense, but there are also claims that exist but have either **not been paid or have not been reported** to the company.
 - These liabilities must be accounted for to estimate the true medical expense.
 - Example: New Year’s Eve injury may not be reported until after company has closed its books for the year.
 - Actuaries estimate these IBNR (Incurred But Not Reported) claims as a **liability on the balance sheet**.

Application – Reserving



- Let's revisit claims triangle from before and estimate the IBNR liability to book for the Sept 30, 2007 quarter-end balance sheet:

<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
Sep	100	215	475	280

- Suppose we know from prior experience that **all claims are paid out after 4 months from incurred period**. Therefore, we can say that June is “complete”, there is no outstanding claims liability and **no IBNR for June**. The completion factor for June is then 1.00.
- Total Paid claims for June Incurred = 1,050.
- Total Incurred claims for June Incurred = 1,050 (=1050/1.00).
- June IBNR as of Sept 30 = 0.

Application – Reserving



- Now look at July:

<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
<u>Sep</u>	<u>100</u>	<u>215</u>	<u>475</u>	<u>280</u>
Est. Incurred	1050			

- We can use information from June to estimate July incurred.
- See that after 3 months June was 90.5% (= $950/1050$) “complete,” so the completion factor is 0.905.
- So can use this to estimate July incurred claims.
- Estimate July incurred to be $(275+450+215)/(.905) = 1,039$.
- Total Paid claims to date for July Incurred = 940.
- July IBNR as of Sept 30 = 99.

Application – Reserving



- Now look at August:

<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
<u>Sep</u>	<u>100</u>	<u>215</u>	<u>475</u>	<u>280</u>
Est. Incurred	1050	1039		

- We can use information from June and July to estimate August incurred.
- See that after 2 months June and July were 70.6% “complete” (= $1475/2089$).
- Estimate August incurred to be $(225+475)/(.706) = 991$.
- Total Paid claims to date for August Incurred = 700.
- August IBNR as of Sept 30 = 291.

Application – Reserving



- Now look at September:

<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
<u>Sep</u>	<u>100</u>	<u>215</u>	<u>475</u>	<u>280</u>
Est. Incurred	1050	1039	991	

- We can use information from June to August to estimate September incurred.
- See that after 2 months June and July were 24.3% “complete” (= $750/3080$).
- Estimate September incurred to be $(280)/(.243) = 1150$
- Total Paid claims to date for September Incurred = 280.
- September IBNR as of Sept 30 = 870.

Application – Reserving



- Balance Sheet Liabilities as of Sept 30 are as follows:

<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
<u>Sep</u>	<u>100</u>	<u>215</u>	<u>475</u>	<u>280</u>
Est. Incurred	1050	1039	991	1152

- Estimated Incurred Claims through Sept 30 = 4,230.
- Paid Claims through Sept 30 = 2,970.
- IBNR liability estimate as of Sept 30 = 1,260.
- Our completion factor for the entire period is 0.702 (= 2,970 / 4,230).
- Total medical expense in the income statement for Jun-Sep period is 4,230, while 1,260 is booked as an outstanding claim liability (i.e., medical claims payable) on the balance sheet.

Application – Reserving



- Previous illustration is very simplistic. In practice also consider:
 - Service type (i.e., IP, OP, RX, etc.)
 - Seasonality (including monthly, seasonally, and annually)
 - Trends (both utilization and unit cost)
 - Benefit changes
 - Population mix
 - Large claims in triangle
 - Changes in processing speed
 - Changes in receipt patterns
 - Non-system liabilities
 - Capitated payments
 - Type of model (prior month dependency)
 - Most-recent month volatility – use PMPM for these months
 - Loss Adjustment Expenses (LAE)
 - SOX Control guidelines

Application – Reserving



- Note that in practice the most recent months of estimation do not use completion factors due to the reliance on past historical patterns and inherent volatility.
 - Most recent months will divide by a lower percentage CF, therefore, a small increase in the paid claims to date gets magnified by this small percentage
 - For example, suppose that claims processing was faster for the current month by 20%, but you base your estimate off of historical payment patterns. Look at the results for the example:

Before: Paid=280 , CF=24.3% => Incurred=1,152 => IBNR= 870

Now : Paid=336 , CF=24.3% => Incurred=1,382 => IBNR=1,046

But nothing has really changed regarding actual claims incurred, just how fast they are paid. By not factoring this into account, we overstate our IBNR by 176.

Application – Reserving



- To account for this volatility, utilize PMPM estimates for most recent month estimate by introducing membership into equation:

<u>Paid Months</u>	<u>Incurred Months</u>			
	<u>June</u>	<u>July</u>	<u>August</u>	<u>Sep</u>
June	250			
July	500	275		
Aug	200	450	225	
<u>Sep</u>	<u>100</u>	<u>215</u>	<u>475</u>	<u>336</u> [= 280 * 120%]
Est. Incurred	1050	1039	991	
Membership	10	10	9	10
PMPM	105	104	110	106 [= (105+104+110)/3]

Can use an average PMPM of last 3 months of 106 as estimate for Sept incurred. Then IBNR = Incurred – Paid = (10 x 106) – 336 = 724. Note this is significantly different than the estimate of 1,046 using the 24.3% CF. If all that is happening is that payment is faster, we would expect that our IBNR goes down, since incurred is the same. **The real challenge is that you don't know for sure if it faster processing or that you will have higher incurred claims for the month. This is where actuarial judgment is necessary,**

Computer and Mathematical Applications



- Computer applications:
 - Excel, Access, SAS, Visual Basic
- Mathematical applications in forecasting:
 - Credibility
 - Weighting of actual experience to blend with projection
 - Fitting Distributions
 - Fit both a frequency (utilization) and severity (cost) distribution to actual experience or a benchmark
 - The fit at higher severity is very important – i.e. reinsurance
 - Distributions may need to be fit piecewise
 - Simulation
 - Using the fitted distribution to simulate and arrive at percentiles and confidence intervals – Monte Carlo (methods)
- Data manipulation and validation
 - Before any analysis can be done:
 - The data must be in a usable format
 - The user must understand the data – where it is coming from and what it means

Why become an Actuary?



- Growth and career opportunities
 - You choose the path
- Continued learning opportunities
 - Through the exams
 - On-the-job training
 - Very complex industry – Learn something every day
- Expert in an very complex industry
- Great benefits and compensation

Insurance or Consulting?



- Consulting

- More task oriented
- Compensation tied to billed hours
- Extremely large firms
- Top 10 firms employ 54% of SOA actuaries*

- Insurance

- Complete project involvement
- Highly visible
- Highly regarded
- Always in demand

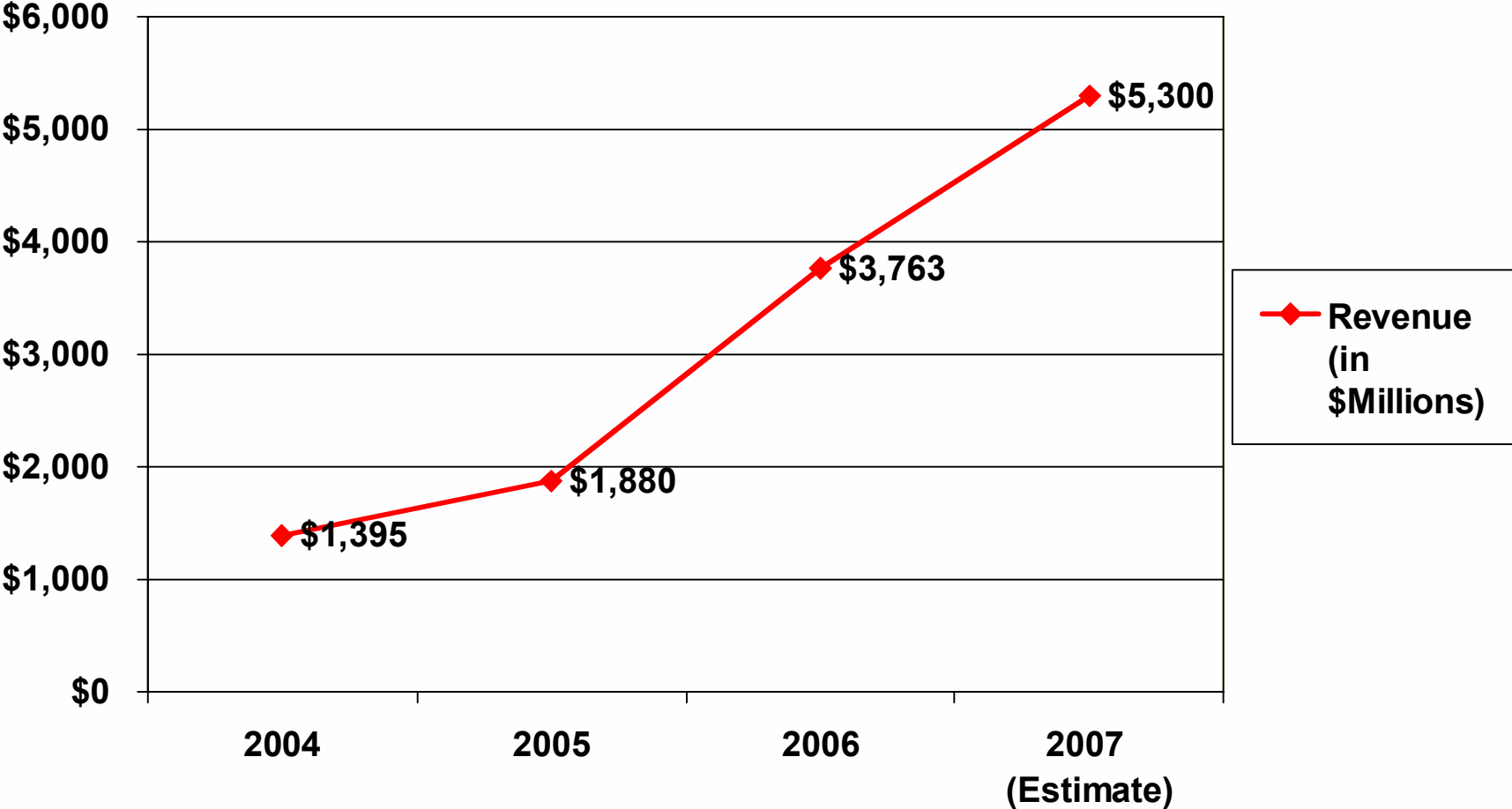
*Source: <http://www.beanactuary.org/find/firms.cfm>

Why Health Insurance?

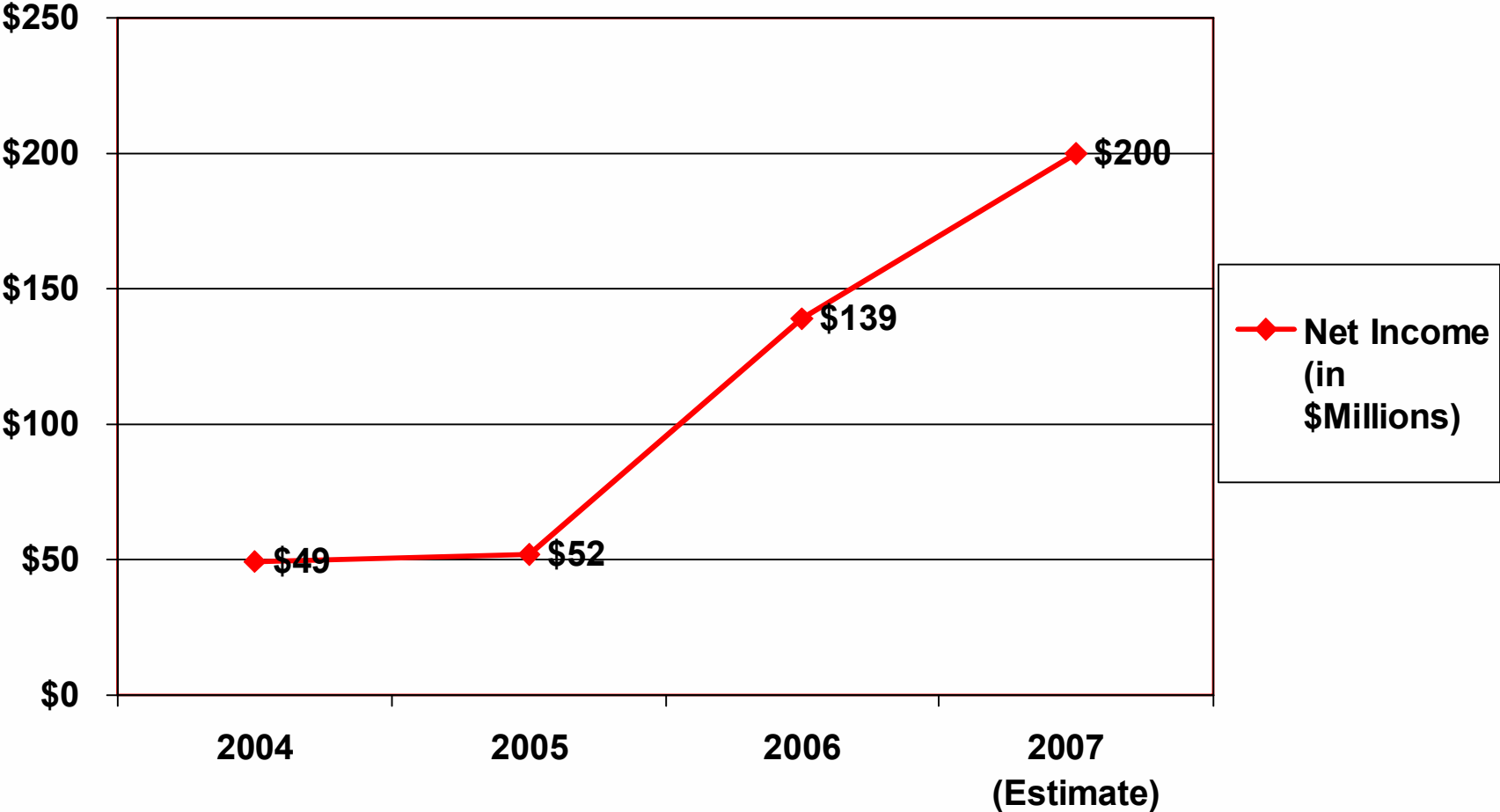


- Dynamic
- Ever changing
- Political focus
- Economic and Social spotlight
- Job Opportunities
- Growth Opportunities
- Risky business

WellCare = Growing Company



WellCare = Growing Company



WellCare = Growing Company



WCG Complete History Stock Price



Questions?



- Comments or Questions?
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