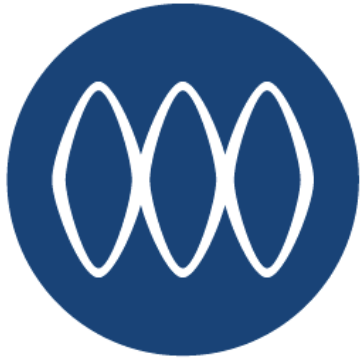


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Consultants and Actuaries

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San Francisco

“Is Short(er) Term Protection Really Enough?”

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- NOTE from Speakers. Some "Company A" results seemed out of line with other contributors. The company has discovered an error in its data and has sent some revised numbers, which result in fewer proportions of claims going into the later durations. This PowerPoint presentation incorporates the Company A changes



LTC Urban Legends:

- “Half of all Americans will need long term care in their lifetimes.”
- “The average length of stay in a nursing home is 2.4 years.”
- “The average NH cost is \$44,000 per year (2000). This is projected to increase to \$190,600/year by 2030.”
- “4 of 10 who receive LTC are under age 65.”
- “The risk of needing LTC is 120 times the risk of losing your home to a fire, and 9 times the risk of an auto accident.”



Possible conclusions from blind belief in urban legends:

- Never sell more than 3 year benefit period (maybe even 2).
- Average LTC premium should be \$52,800/year.

Because: 50% need LTC; average length = 2.4 years; average cost = \$44,000/year.

(.5 x 2.4 x 44,000 = 52,8000)

- Drop homeowners. Drop car insurance. Buy long term care instead.
- Never sell less than \$120/day with inflation.



Purpose of this session:

- Address length of stay “urban legends” using actual insurance company data.
- “Substitute facts for impressions.”



Act. Sci. 101

Price at given age:

Present value (including interest, lapse & mortality) of all future premiums and investment income equals

PV of all future claims, expenses, reserve changes and profits.



Claim cost at age $x =$

- Probability of going on claim at age x (i.e., frequency – including probability of using services),
- Times length of claim (based on continuance curve & benefit period),
- Times average cost of claim (cost per service times # of services/mo.)



Example of claim cost calculation for
67 year-old Female, home care only
(0 day EP, 3 yr. BP, \$100/day, No Salvage)

Frequency = 0.27% (.0027) claims/person/year
(ignoring underwriting)

Length of stay = 59 weeks (aver. with 3yr. B.P.)
(LOS) (412 days)

Benefit = \$100/day (equal to max) for
7 days/week

Annual Claim Cost = $.0027 \times 412 \times 100 = \111.24



Salvage

The savings achieved by a combination of daily charges being less than the daily maximum and fewer than 7 services/wk. being given

$$\text{Salvage} = \frac{(\text{aver. daily charge}) \times (\# \text{ of services/wk.})}{(\text{daily max.}) \times 7}$$



Example of salvage

Daily max = \$100

Actual Charges = \$70 day for 5 days/wk.

$$\text{Salvage} = \frac{70 \times 5}{100 \times 7} = \frac{350}{700} = 50\%$$

On pool of money product, benefit period will be doubled with 50% salvage.



Revised example, using 50% salvage:

Freq. = .0027 claims/person/year

LOS = 77 weeks (aver. with 6 yr. B.P.)

(537 days)

(3 years is doubled, due to salvage but aver. LOS does not double)

Daily benefit = \$100/day x 50% salvage

(aver. charge = \$70/day, for 5 days/wk)

Annual CC = .0027 x 537 x 100 x .5 = \$72.50



Factors that affect claim costs:

- Age
- Sex
- Duration since issue/degree of underwriting
- Type of care
- Whether benefit period is separate by type of care or integrated
- Marital status
- Area of country and daily maximum chosen
- Elimination and benefit period chosen
- Benefit triggers (medically necessary vs. ADL's , TQ vs. non-TQ)



Average length of stay (LOS) component of
claim cost:



Benefit period (BP)

Each affects the other.



But average LOS does not tell the whole story...

we need to know:

How many policyholders will exhaust benefits
with various benefit periods?



Benefit exhaustion answered by looking at theoretical models called “continuance curves”

Example: 67-year-old female, home care only

Duration from claim (months)	# of Claimants Remaining (out of 1000)
0	1,000
1	869
2	780
3	729
4	660
5	599
6	546
12	383
24	257
36	169
48	140
60	90
72	55
108	13
360	0

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Question of benefit exhaustion also can be answered by looking at real company data.

Four contributors (thanks!)

- John Hancock
- GenWorth
- Conseco (former American Travelers block)
- CNA



Survey Questions:

- (1) # of LTC policyholders & # of claimants by BP?
- (2) What % of claims lasted 24+ , 36+, 48+, 60+ calendar months?
- (3) What % of claimants, by BP, totally exhausted benefits?
- (4) For policyholders whose policy has terminated due to exhaustion, what is BP distribution?
- (5) Actual salvage %?
- (6) Top claims diagnoses, by length of claim?
- (7) Average claim paid by BP?
- (8) What % transfer from NH to HHC or vice versa?



Questions 2-4 results were kept separate by open vs. closed claims, by type of care, and by age.

Some complexities in responding to survey (i.e., why this isn't done every day)

- Benefit period definitions – separate for NH/HHC vs. integrated, calendar year, pool of money, combined pools for spouses.
- Separation of results by NH, ALF, & HHC: use initial care site, current/ending site, primary site?
- Claims lasting 24+, 36+, etc: need to track thru multiple care sites, due to transference
- When is a claim “closed”? How do you handle open claims?



Definitions used:

- Closed claim – one for which there was no payment in the last 6 months.
- For measuring whether claim lasted 24+, 36+, etc. months, we looked at time from first service date through last/most recent service date.
- Kept open and closed claims separate.



Total Volume of Data Included in Survey Response (All Companies Combined)

BP (year)	# Policies Inforce	# of Open Claimants	# of Closed Claimants
<2	19,927	695	11,217
2	156,709	5,704	35,597
3	307,751	6,709	17,270
4	354,985	5,309	9,711
5	96,863	2,448	9,590
6	161,474	2,361	4,119
7-20	83,575	622	947
Lifetime	492,799	7,367	11,772
Total	1,674,003	31,215	100,223

$$\frac{\text{\# open claimants}}{\text{\# inforce}} = 1.9\%$$



% of LTC Policyholders Inforce by BP

Company					
BP (years)	A	B	C	D	Total
2 or less	7.5%	5.0%	13.3%	27.7%	10.6%
3	17.1	19.2	16.4	25.0	18.4
4	24.6	22.3	19.4	10.2	21.2
5	0.4	5.2	13.6	11.7	5.8
6	10.1	20.0	2.6	0.5	9.6
7-20	8.4	6.1	0.0	0.1	4.9
<u>Lifetime</u>	<u>32.0</u>	<u>22.2</u>	<u>34.8</u>	<u>24.8</u>	<u>29.4</u>
Total	100.0%	100.0%	100.0%	100.0%	100.0%



% of Open Claims by BP and Company

BP (years)	Company				Total
	A	B	C	D	
2 or less	12.7%	5.2%	19.0%	30.9%	20.6%
3	22.3	13.4	20.3	21.9	20.7
4	26.3	20.0	24.1	7.3	17.2
5	0.0	0.2	6.2	15.9	7.9
6	8.8	32.6	5.1	1.0	7.6
7-20	1.0	13.4	0.0	0.5	1.9
<u>Lifetime</u>	<u>28.9</u>	<u>15.3</u>	<u>25.3</u>	<u>22.5</u>	<u>23.9</u>
Total	100.0%	100.0%	100.0%	100.0%	100.0%



% of Claims Lasting Exactly X months by Open vs. Closed Claims

Claim Duration in Months						
	0-24 months	25-36 months	37-48 months	49-60 months	60+ months	Total
Closed Claims	85.6%	8.9%	3.4%	1.3%	0.8%	100.0%
Open Claims	<u>66.8%</u>	<u>17.1%</u>	<u>8.5%</u>	<u>4.1%</u>	<u>3.5%</u>	<u>100.0%</u>
Total	81.3%	10.7%	4.6%	1.9%	1.4%	100.0%



% of Claims Lasting X or More Months by Open vs. Closed Claims

Claim Duration in Months				
	24+	36+	48+	60+
Closed Claims	14.4%	5.6%	2.1%	0.8%
Open Claims	33.2%	16.2%	7.6%	3.5%
Total	18.7%	8.0%	3.4%	1.4%



% of Claims Lasting X or More Months by Company

Claims Duration				
Company	24+	36+	48+	60+
A	21.7%	10.0%	4.2%	1.5%
B	33.0%	17.7%	8.0%	4.1%
C	23.0%	9.6%	4.7%	2.0%
D	15.3%	6.0%	2.4%	1.0%
Total	18.7%	8.0%	3.4%	1.4%



% of Claims Lasting X or More Months by Benefit Period

Claims Duration in Months				
Benefit Period	24+	36+	48+	60+
<2	1.4%	1.4%	0.2%	0.1%
2	14.0%	1.4%	0.4%	0.1%
3	25.0%	10.9%	1.4%	0.3%
4	23.9%	12.1%	6.0%	1.0%
5	15.9%	10.2%	6.1%	2.9%
6	30.0%	17.1%	8.3%	4.5%
7-20	30.5%	19.1%	10.9%	6.3%
Lifetime	23.3%	13.9%	7.9%	4.3%
Total	18.7%	8.0%	3.4%	1.4%



% of Claims Lasting X or More Months by Benefit Type

Claims Duration in Months				
Benefit	24+	36+	48+	60+
NH	23.4%	9.4%	3.7%	1.5%
ALF (Co. A & B only)	40.5%	18.4%	7.2%	2.5%
HHC	13.2%	5.9%	2.7%	1.2%
Total	18.7%	8.0%	3.4%	1.4%



% of Claims Lasting X or More Months by Claimant Age

Claims Duration in Months				
Claimant Age	24+	36+	48+	60+
<60	13.1%	7.9%	4.5%	2.7%
60-74	17.3%	9.8%	5.2%	2.6%
75+	19.1%	7.5%	2.9%	1.1%
Total	18.7%	8.0%	3.4%	1.4%



Back to Act. Sci. 101...

Salvage: the savings achieved by a combination of daily charges being less than the daily maximum and fewer than 7 services/wk. being given

$$\text{Salvage} = \frac{(\text{aver. daily charge}) \times (\# \text{ of services/wk.})}{(\text{daily max.}) \times 7}$$



- Amount of salvage affects average cost of claim.
- On pool of money products: low cost today results in benefit period being extended.
- So, 3 year BP (for example) can extend beyond 3 years.



Example of Salvage Effect

\$100/day, 3 yr. BP

\$70/day paid for 5 days/wk. →

50% salvage

Assuming no inflation, BP extends to 6 years before pool of money is used up.

Ave. LOS with 3 calendar yr. max = 59 wks.

Ave. LOS with 6 calendar yr. max. = 77 wks.





Salvage %'s of Companies

	NH	HHC
Co. A	N/A	N/A
Co. B*	76.3%	76.3%
Co. C	52.5%	89.3%
Co. D	96.0%	66.6%

* Only available in aggregate

% of Claims Closed Due to Benefit Exhaustion by Benefit Period

Company					
BP	Co. A	Co. B	Co. C	Co. D	Total
2	33.8%	21.0%	12.5%	7.9%	9.7%
3	12.6%	15.0%	5.5%	7.4%	8.0%
4	5.0%	13.8%	5.3%	4.1%	5.1%
5	-	-	5.7%	1.1%	1.5%
6	1.0%	9.2%	2.3%	0.6%	5.2%
7-20	-	2.6%	-	-	1.9%
Lifetime	0.0	0.0%	0.0%	0.0%	0.0%



For policyholders who exhausted benefits, distribution by BP:

BP	A	B	C	D
2	50.0%	11.5%	46.5%	43.8%
3	33.2%	20.5%	16.0%	16.9%
4	15.5%	27.8%	12.7%	3.2%
5	-	-	3.3%	1.5%
6	1.0%	36.8%	1.1%	0.1%
7-20	-	3.4%	-	-
Lifetime		0.0%	0.0%	0.0%



Top 5 claims diagnoses – Company X

Open Claims			
Rank	Duration of Claim (Years)		
	<2	2-5	>5
1	Dementia	Dementia	Dementia
2	Stroke/Brain Hemorrhage	Stroke/Brain Hemorrhage	Stroke/Brain Hemorrhage
3	Parkinson's	Parkinson's	Osteoarthritis
4	COPD, Emphysema	Osteoarthritis	Heart, Congestive Failure
5	Memory Loss	Heart, Congestive Failure	Parkinson's

Closed Claims			
Rank	Duration of Claim (Years)		
	<2	2-5	>5
1	Dementia	Dementia	Dementia
2	Fractures	Stroke/Brain Hemorrhage	Stroke/Brain Hemorrhage
3	Stroke, Brain Hemorrhage	Fractures	Fractures
4	Cancer/Metastatic, Primary Known	Hip Fracture	Hip Fracture
5	Cancer/Trachea/Bronchia/Lungs	COPD, Emphysema	Heart, Congestive Failure



Top 5 claims diagnoses – Company Y

Open & Closed Combined			
Rank	Duration of Claim (Years)		
	<2	2-5	>5
1	Dementia	Dementia	Dementia
2	Neoplasms	Stroke	Circulatory diseases
3	Stroke	Nervous system diseases	Nervous system diseases
4	Fractures	Circulatory diseases	Stroke
5	Nervous system diseases	Musculoskeletal diseases	Musculoskeletal diseases



Average claim paid by BP

BP	A	B	C	D
2		\$27,309	\$18,109	\$18,853
3		31,343	27,241	29,644
4		34,907	31,358	31,219
5	N/A	-	41,221	29,820
6		46,529	43,024	25,910
7-20		52,907	-	29,088
Lifetime		54,830	37,514	37,663





% of Claimants that Transfer from One Site to Another	
Co. A	N/A
Co. B	13% used NH/ALF & HHC 14% used both NH & ALF
Co. C	6.0% of claimants transferred 3.5% of claimants who started in NH transferred to HHC 11.5% of claimants who started in HHC transferred to NH
Co. D	4.1% of claimants transferred 1.8% transferred from NH to HHC 2.3% transferred HHC to NH

Theoretical Modeling

Source: Milliman LTC Cost Guidelines
Based on population data and \$2 billion of
industry claims data

Four sample policy holders

Male, age 55

Female, age 55

Male, age 70

Female, age 70



Modeled Probability of Person Exhausting Benefit Period (assuming integrated policy & no salvage):

BP	M, 55	F, 55	M, 70	F, 70
1	52.8%	54.8%	43.0%	45.7%
2	39.7	39.7	27.5	29.1
3	33.5	33.2	17.8	20.6
4	28.5	28.1	12.7	12.9
5	21.5	21.7	8.1	8.6
6	17.2	17.7	5.8	6.7
8	6.7	10.1	2.0	4.1
10	6.1	9.4	1.5	3.7
Lifetime	0.0	0.0	0.0	0.0
Ave. LOS	2.4 yrs.	2.7 yrs.	1.4 yrs.	1.6 yrs.



Modeled Probability of Person Exhausting Benefit Period* (assuming integrated policy, POM & 50% HHC salvage):

BP	M, 55	F, 55	M, 70	F, 70
1	52.5%	54.3%	42.2%	45.0%
2	36.5	36.3	22.6	24.0
3	30.5	30.6	15.1	15.3
4	24.2	24.3	11.0	11.0
5	18.9	18.6	7.2	7.6
6	13.5	13.2	4.9	5.5
8	5.1	8.1	1.6	3.6
10	4.1	7.1	1.3	3.4
Lifetime	0.0	0.0	0.0	0.0
Ave. LOS	2.4 yrs.	2.7 yrs	1.4 yrs	1.6 yrs

* remember, because of HHC salvage the benefit period is extended



LOS (in years) Remaining at end of Benefit Period (no salvage)

BP	M, 55	F, 55	M, 70	F, 70
1	3.5	3.8	2.0	2.4
2	3.6	4.2	2.1	2.7
3	3.3	4.2	2.2	2.8
4	3.0	4.0	2.1	3.4
5	2.9	4.3	2.2	4.1
6	2.7	4.3	2.1	4.3
8	3.4	5.0	2.5	4.7
10	1.9	3.6	1.3	3.4
Lifetime	0.0	0.0	0.0	0.0



Conclusions:



Depends on each person's personal situation

- his risk tolerance
- his support system
- perceived alternatives upon benefit exhaustion
- financial situation

