

National LTCi Producers Summit

October 15-17, 2005

Kansas City

How to “Right-Size” Your Sales
to Match Real LTCi Claims Usage



A MILLIMAN GLOBAL FIRM

Milliman

Consultants and Actuaries

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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.

$(.5 \times 2.4 \times 44,000 = 52,8000)$

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



LTC Urban Legends

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- “4 of 10 who receive LTC are under age 65.”
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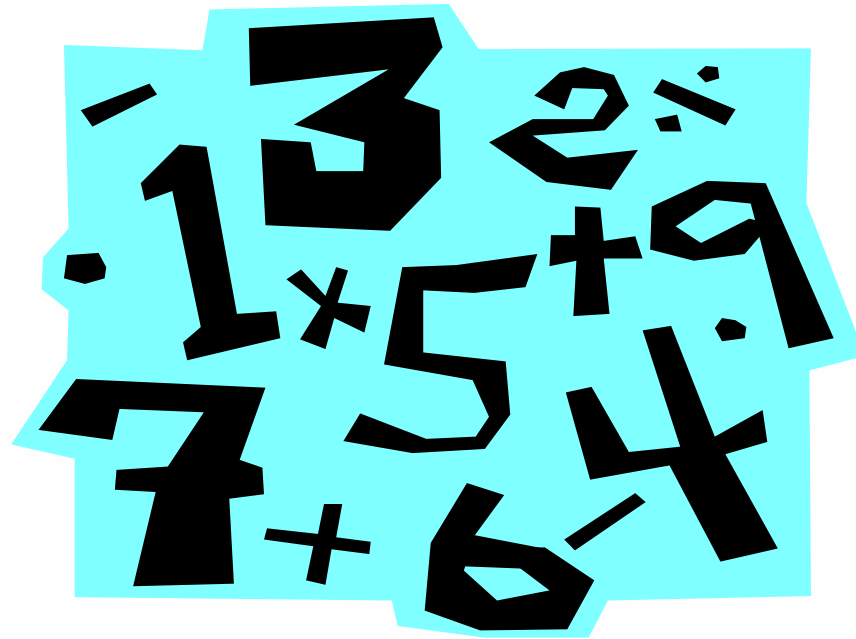
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LTC Grinder Rule #33

If the #'s look funny, dig deeper.



Purpose of this Session

- Address frequency “urban legends” using:
 - Population data
 - 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 set to equal
- 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 (and assuming the entire \$100 is used every day)

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

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

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

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



At Last Year's Summit

- Presented data from a 4-company survey related to length of stay
- Looked at what percent of claimants went over 2, 3, 4, 5, etc. years
 - By “open” vs. “closed”
 - By age, benefit period, etc.



% 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%
Average of Shaded	23.5%	13.1%	7.6%	4.5%

Source: 4-Company Survey



Theoretical Model*

Probability of Person Exhausting Benefit Period (Assuming Integrated Policy, POM & 50% HHC Salvage):

BP	Claimant Sex and Age			
	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

* Milliman LTC Cost Guidelines.

Remember, because of HHC salvage, the benefit period extends in calendar year.



Definitions

Annual frequency = Probability of entering into Nursing Home/ALF or of starting home health care in a given year.

Prevalence = Probability of being in a NH/ALF or on HHC at a given point in time (regardless of when entered/started).



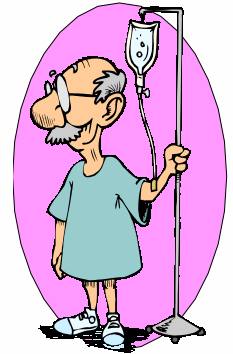
Composite “Prevalence” from Last Year’s Survey (4 Companies)

$$\frac{\text{\# of open claimants}}{\text{\# of policies inforce}} = \frac{30,878}{1,674,003} = 1.8\%$$



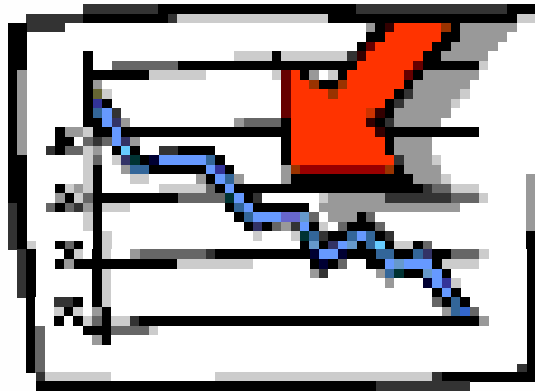
Factors that Affect LTC Frequencies

- Age
- Sex
- Duration since issue/degree of underwriting
- Type of care
- Whether benefit periods are tracked separately 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)



LTC Grinder Rule #45

Probabilities may be low, but that doesn't make them insignificant.



Annual Frequencies of “Insured Events”

- Probability of going into a hospital (Milliman Med/Surg.):

	<u>Males</u>	<u>Females</u>
Age 45	4.92%	5.45%
Age 65	21.04%	19.26%
Age 85	61.73%	54.93%

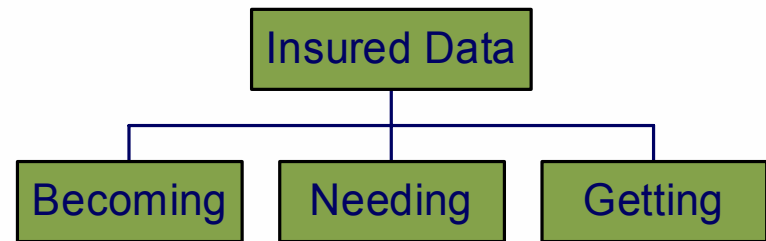
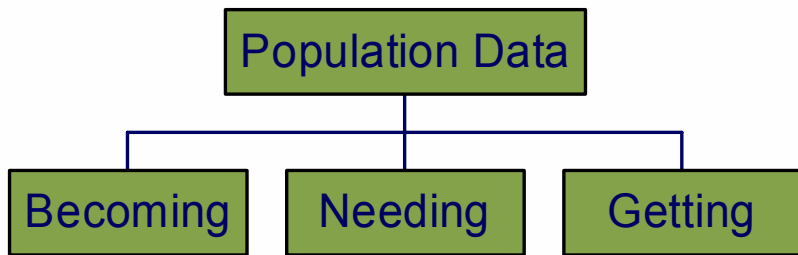
- Probability of having a house fire = 0.30%
- Probability of having your car totaled = 2.33%
- Probability of going into NH/ALF or starting HHC (insured population) (Milliman):

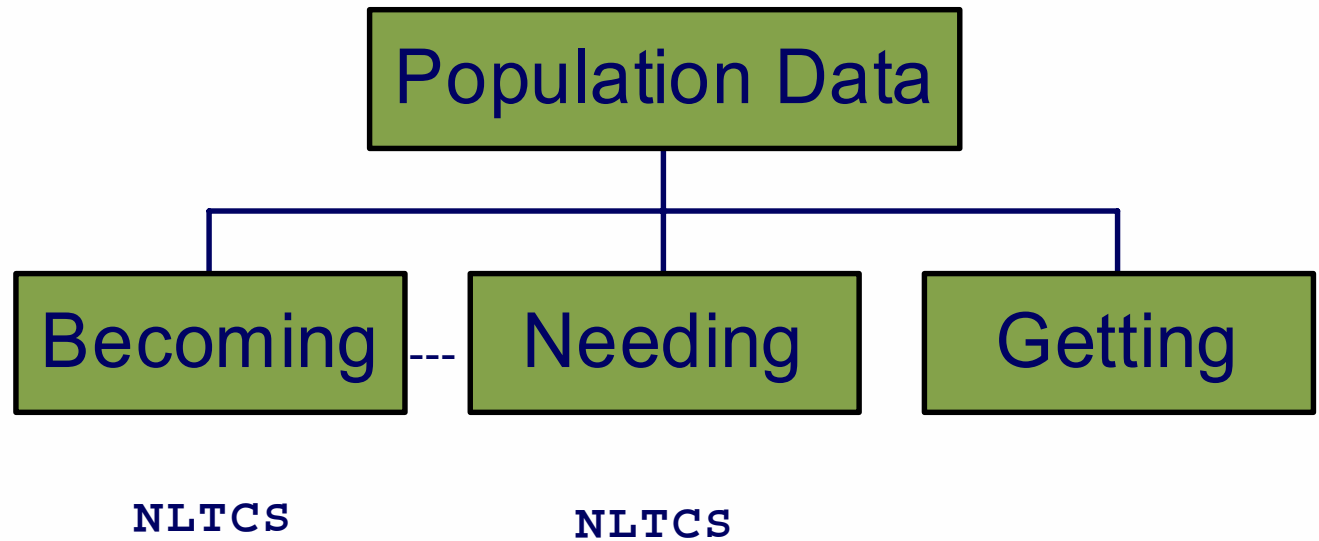
	<u>Males</u>	<u>Females</u>
Age 45	0.08%	0.06%
Age 65	0.46%	0.53%
Age 85	9.10%	11.00%



- Probabilities of:
 1. Developing ADL's/cognitive impairment
vs.
 2. Needing assistance with ADL's/CI
vs.
 3. Needing assistance and getting paid help
- Differ for general population and insured population







Probability of Developing a Disability

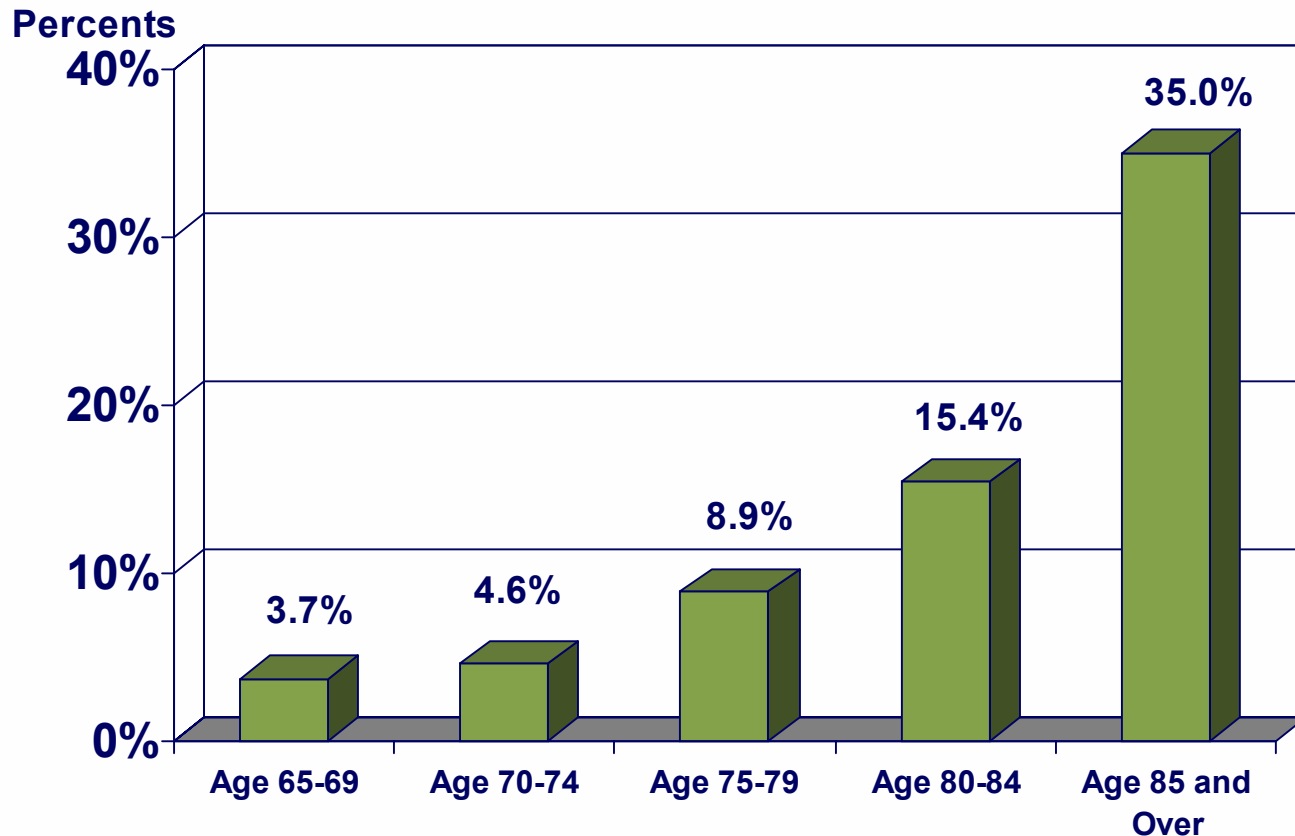
(2+ ADL's or CI):

Using Population Data

- National Long Term Care Surveys:
 - Collect data, over time, on 65+ population
 - Measure disabilities by ADL status, IADL status, and cognitive functioning
 - Can be used to develop both prevalences and frequency rates of population



NLTCS Prevalence of Being Disabled*, by Age

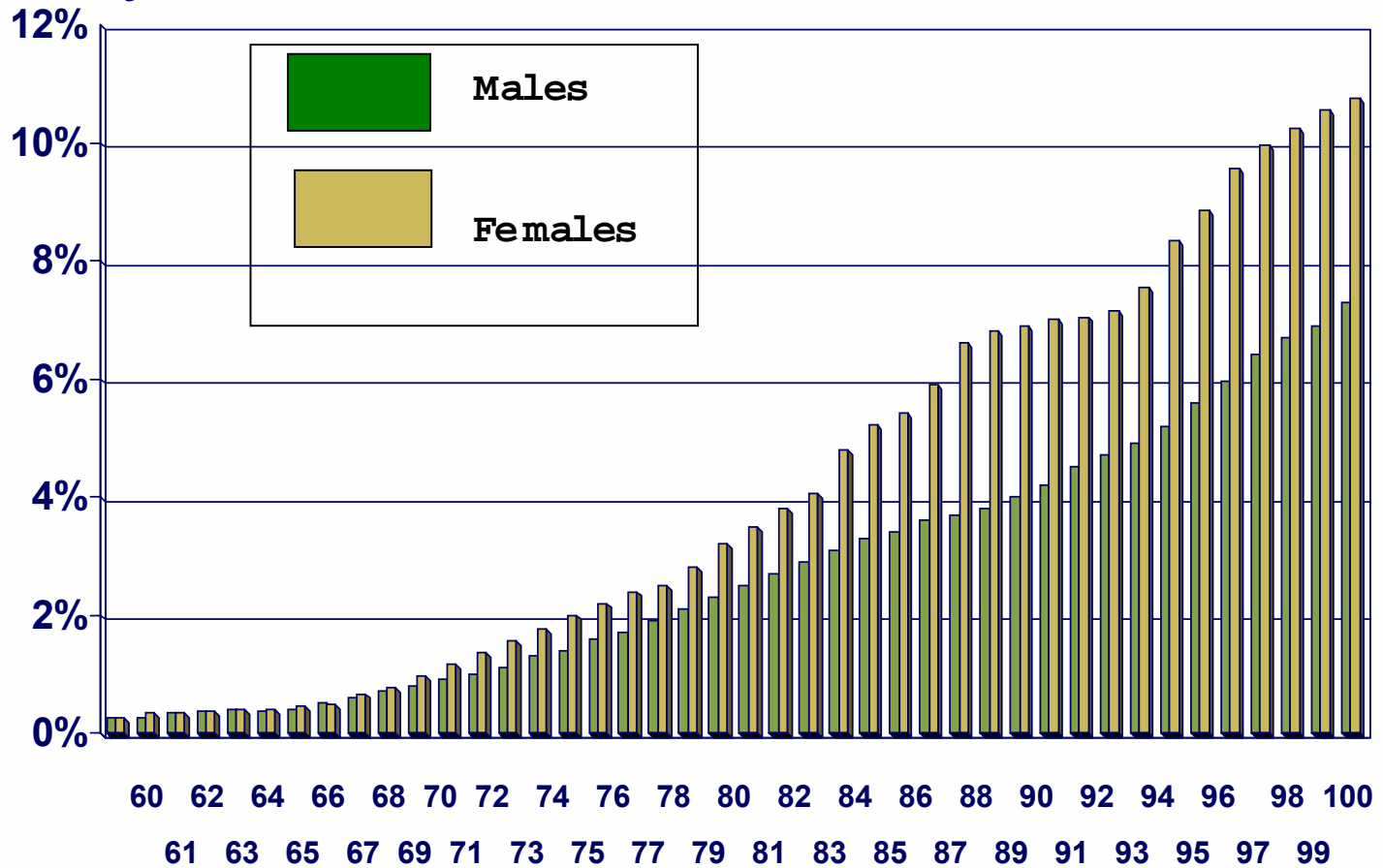


Source: Stallard, 2001; AARP Public Policy Institute, "Becoming Disabled After Age 65..."



AARP Public Policy Institute: “Becoming Disabled After Age 65: the Expected Costs of Independent Living”*

Annual Probability

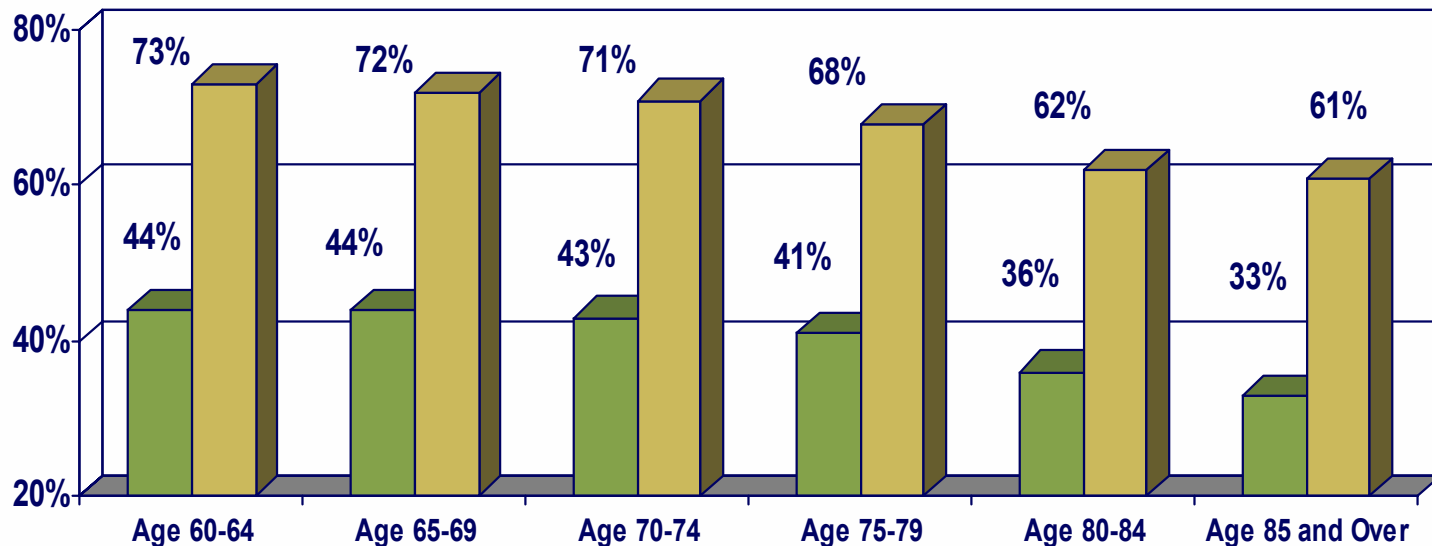


* June 2005; Cohen, Weinrove, Miller, Ingoldsby

Age
Milliman

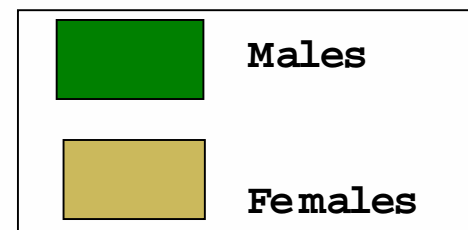


Probability of Developing a Disability in Remaining Lifetime, by Attained Age and Gender



Source: AARP Public Policy Institute

“Becoming Disabled After Age 65...”, June 2005



AARP Report: Expected Lifetime Costs

Age 65+	Lifetime Costs	Disabled Life Expectancy*
	Mean	
Home Health Care	\$174,000	5.3 years
Nursing Home	\$179,000	3.7 years

* Projected by clinicians based on health evaluation.

Note: Does not reflect length of time paid services are received.



From NLTCS

- 73% of those with disability are in community setting.
- \therefore The composite of all disabled from the population data has a mean life expectancy of 4.7 years and a mean cost of \$175,000.



LTC Grinder Rule #2

Only one stat matters: the insured's probability of having a claim.

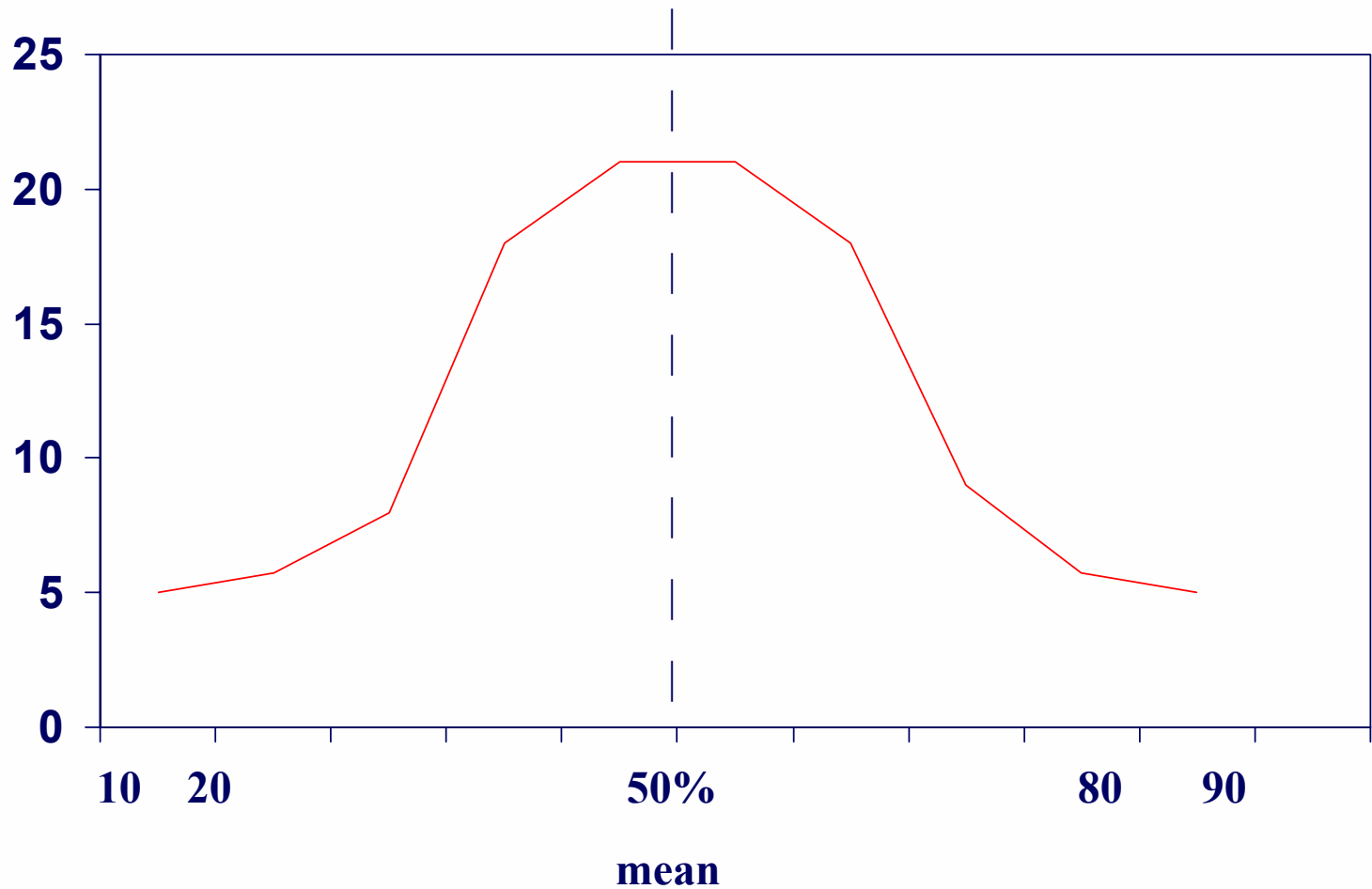


For any given individual, his/her probability of needing LTC over his/her lifetime is either:

- 0%
- or
- 100%



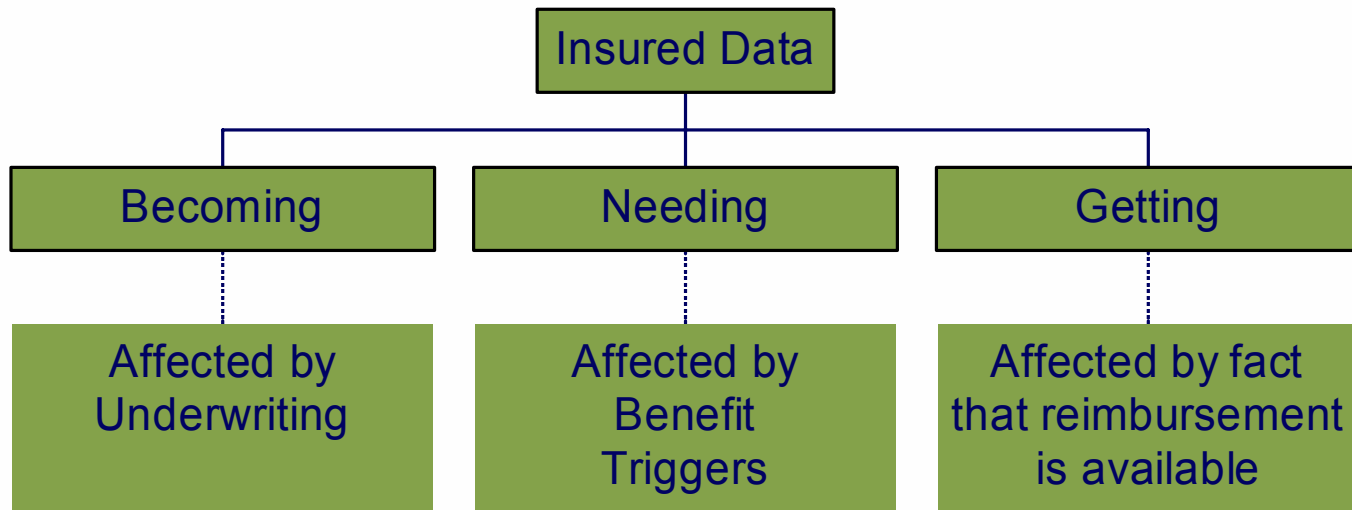
Averages are misleading...



- Rather than looking at averages, we need to look at probabilities of getting paid care and exhausting assets.
- Lifetime risk of using LTC Services is 24% or 42% (males, females) for healthy 65-year-old, using population mortality.
- In order to be 95% certain that a person's LTC costs are covered, a 65-year old needs to have saved:
 - Males – \$373,000
 - Females – \$404,000

Source: Eric Stallard, 2002. Based on NLTCS's.





Insured Data from Society of Actuaries LTC Experience Studies

■ Caveats:

- Mixture of “apples” and “oranges” as far as companies included over time and company underwriting, markets, products, etc.
- Experience reflects wide timeframe (1984-1999) with many changes in policy benefits and underwriting
- Frequency rates reflect different elimination periods
- Majority of claims in this study are on NH only policies.



Comparison of SOA Experience Study Insured Frequencies to NLTCS Disability Frequencies

Age	SOA*		NLTCS**	
	Male	Female	Male	Female
62	.27%	.29%	.40%	.40%
67	.60	.58	.50	.50
72	1.07	1.02	1.00	1.40
77	1.91	1.85	1.70	2.40
82	2.82	2.93	2.70	3.80

* 0-day elim; predominantly in early durations.

** Estimated from bar-graph in AARP study.



Conclusions from SOA Experience Study

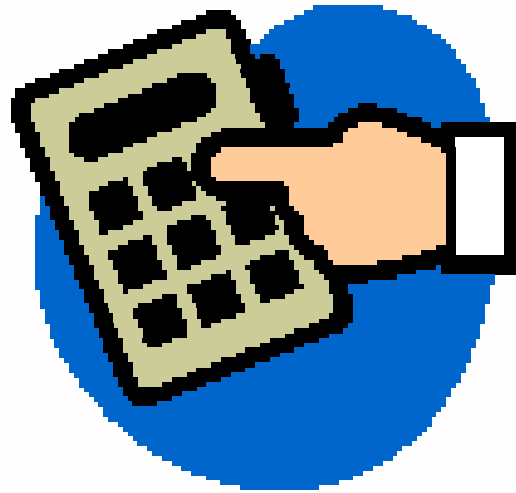


- Effect of underwriting is significant...frequencies are 50-75% less than “ultimate” in first year after issue.
- All studies, other than SOA, have female frequencies significantly higher than male.
- Incidence rates have been improving over time.
- Experienced frequency is less than, and length of stay is great than, population data shown in 1985 National Nursing Home Surveys.



LTC Grinder Rule #1

Crunch numbers or die trying.



Second Source of Insured Usage: Milliman LTC Cost Guidelines

Has adjusted for variation in frequency by multiple variables.
Assumes tight underwriting.

Age	Sex	Marital Status	Policy Duration	Annual Frequency
40	M	S	1	.11%
40	M	M	1	.03
40	F	S	1	.01
<u>40</u>	<u>F</u>	<u>M</u>	<u>1</u>	<u>.03</u>
70	M	S	10	.82
70	M	M	10	.35
70	F	S	10	.93
70	F	M	10	.45



Comparison of SOA Exp. Study Insured Frequencies to Milliman LTC Guidelines Frequencies

Age	SOA*		Milliman**	
	Male	Female	Male	Female
62	.27%	.29%	.31%	.40%
67	.60	.58	.60	.65
72	1.07	1.02	1.19	1.39
77	1.91	1.85	3.21	3.60
82	2.82	2.93	6.04	7.20

* Predominantly in early durations.

** Ultimate, after selection wear-off.



Estimate of Lifetime Probabilities of Getting LTC, Using Milliman Guidelines, Measured from Time of Purchase of LTC (tight underwriting)

	Sex	Age at Issue	Marital Status	Lifetime Probability (1994 GAM)
1	M	40	S	38.2%
2	M	40	M	36.4
3	F	40	S	54.5
4	F	40	M	53.1
5	M	65	S	39.5%
6	M	65	M	30.2
7	F	65	S	55.5
8	F	65	M	47.6

Assumptions: 1994 GAM mortality, no voluntary lapse.



Estimate of Lifetime Probabilities of Getting LTC, Using Milliman Guidelines, Measured from Time of Purchase of LTC (tight underwriting)

	Sex	Age at Issue	Marital Status	Lifetime Probability (1994 GAM)	Lifetime Probability (1983 GAM)
1	M	40	S	38.2%	33.6%
2	M	40	M	36.4	31.7
3	F	40	S	54.5	54.3
4	F	40	M	53.1	52.9
5	M	65	S	39.5%	35.0%
6	M	65	M	30.2	26.1
7	F	65	S	55.5	55.2
8	F	65	M	47.6	47.2

Assumptions: 1983 GAM mortality & 1983 GAM mortality, no voluntary lapse.



Estimate of Lifetime Probabilities of Getting LTC, Using Milliman Guidelines, Measured from Time of Purchase of LTC (tight underwriting)

	Sex	Age at Issue	Marital Status	Lifetime Probability (1994 GAM)	Lifetime Probability (1983 GAM)	Lifetime Probability (Annuity 2000)
1	M	40	S	38.2%	33.6%	46.3%
2	M	40	M	36.4	31.7	44.7
3	F	40	S	54.5	54.3	60.0
4	F	40	M	53.1	52.9	58.7
5	M	65	S	39.5%	35.0%	48.3%
6	M	65	M	30.2	26.1	39.0
7	F	65	S	55.5	55.2	61.3
8	F	65	M	47.6	47.2	53.5

Assumptions: 1983 GAM mortality, 1983 GAM mortality, & Annuity 2000 mortality; no voluntary lapse.



Tying it all Together

Based on our 2004 survey on length of stay and theoretical data of getting services in remaining lifetime (1994 GAM)

- Out of 1,000 65-year-olds
 - 449 will get LTC services
 - 106 will get LTC for >2 years
 - 59 will get LTC for > 3 years
 - 34 will get LTC for > 4 years
 - 20 will get LTC for > 5 years



% 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%
Average of Shaded	23.5%	13.1%	7.6%	4.5%

Source: 4-Company Survey (Repeated Handout # 11)



Tying it all Together

Based on the theoretical probability of a 70 year-old exhausting BP (at age 70) and theoretical data of getting services in remaining lifetime^(1994 GAM)

- Out of 1,000 70 -year-old Males
 - 351 will get LTC services
 - 68 will get LTC for >2 years
 - 46 will get LTC for > 3 years
 - 33 will get LTC for > 4 years
 - 22 will get LTC for > 5 years
- Out of 1,000 70 -year-old Females
 - 517 will get LTC services
 - 72 will get LTC for >2 years
 - 46 will get LTC for > 3 years
 - 33 will get LTC for > 4 years
 - 23 will get LTC for > 5 years



Theoretical Model*

Probability of Person Exhausting Benefit Period (Assuming Integrated Policy, POM & 50% HHC Salvage):

BP	Claimant Sex and Age			
	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

* Milliman LTC Cost Guidelines.

(Repeat of handout #12)



Tying it all Together

Based on theoretical probability of ever getting services AND theoretical length of stay over remaining lifetime

- Out of 1000 65-year-old males, married
 - 302 will get LTC services
 - 20 will get LTC for >2 years
 - 12 will get LTC for > 3 years
 - 7 will get LTC for > 4 years
 - 4 will get LTC for > 5 years

- Out of 1000 65-year-old females, single
 - 555 will get LTC services
 - 70 will get LTC for >2 years
 - 51 will get LTC for > 3 years
 - 35 will get LTC for > 4 years
 - 23 will get LTC for > 5 years

