

# Considerations for Pricing Long Term Care

International Association of Black Actuaries

August 4, 2006



A MILLIMAN GLOBAL FIRM

**Milliman**

*Consultants and Actuaries*

Dawn E. Helwig, F.S.A., M.A.A.A

Milliman, Inc.

71 S. Wacker Drive, 31<sup>st</sup> Floor

Chicago, IL 60606

(312) 726-0677

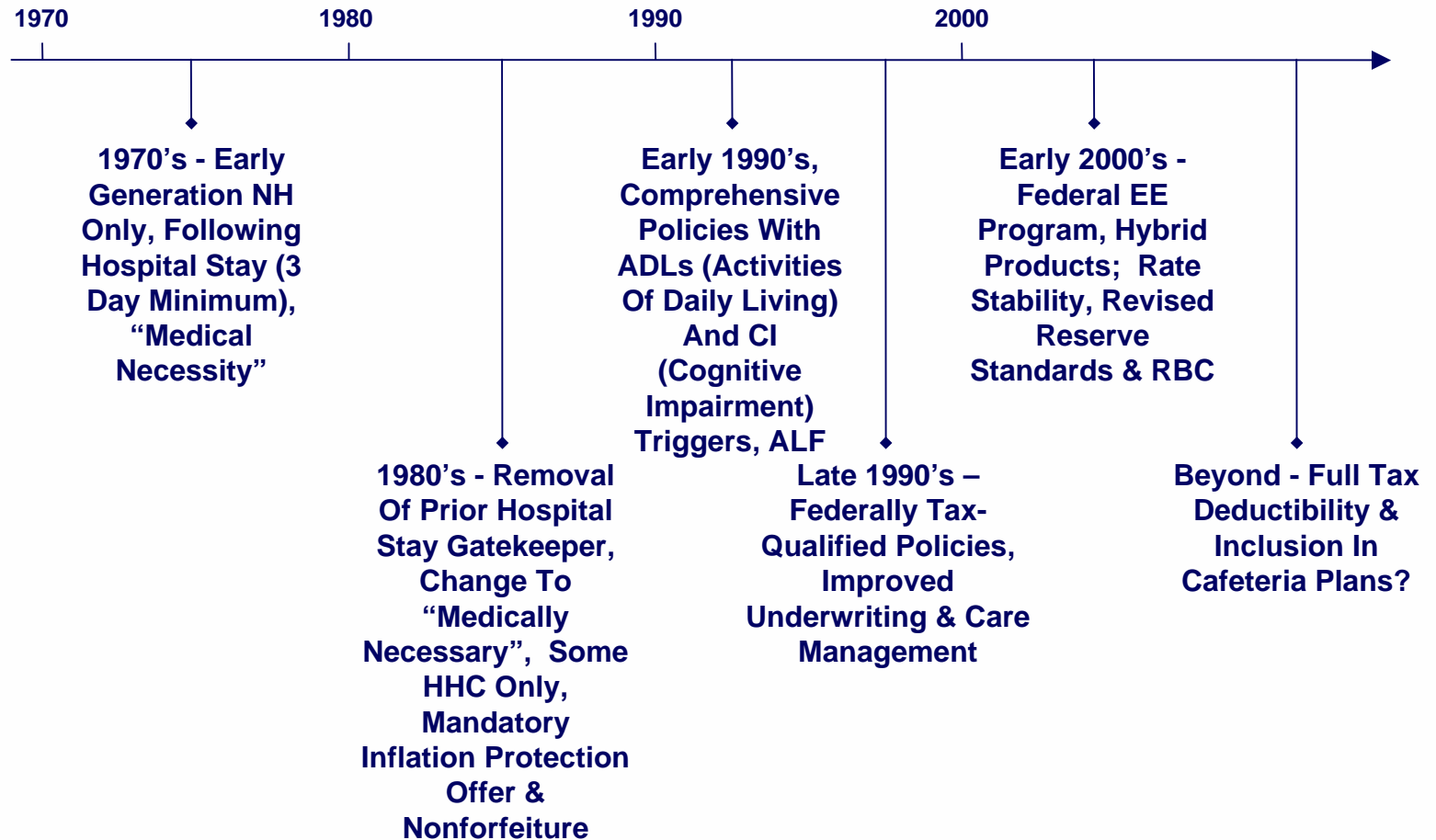
dawn.helwig@milliman.com

# Product Overview



# History of LTC Insurance

Relatively New Coverage - Due To Increasing Life Expectancies & Growing # Of Elderly



# Product Description

- Individual product
  - Even through employers
- Issue age rated
- Guaranteed renewable
  - Carrier can't cancel
  - Can increase premiums by class



# Product Description

- Triggering event
  - Functional disability
  - Cognitive impairment
- Various levels of care covered
  - NH, ALF, HHC



# Product

## Comprehensive Long Term Care Policies

- Skilled/Intermediate/Custodial
- Level of Home Care varies
- ALF/home care benefits sometimes paid with lower daily maximum
- Alternative types of care often included
- Benefits subject to elimination and benefit periods
  - Common elimination periods
  - “Pot of Money”



# Today's Product

## Tax-Qualified Long Term Care Policies

- “Gatekeeper” provisions based on ADL’s and cognitive
- 6 ADL’s: bathing, eating, dressing, transferring (e.g., from a bed to a chair), continence, and toileting
  - most policies require impairment in 2 or more ADL’s
- Use of “care coordinators”
- Must offer 5% compound inflation protection and shortened benefit period non-forfeiture option



# Basic Benefit Approach

Reimbursement



Expenses, up to  
daily, weekly or  
monthly max



When care is given

vs.

Disability



Indemnity Payment

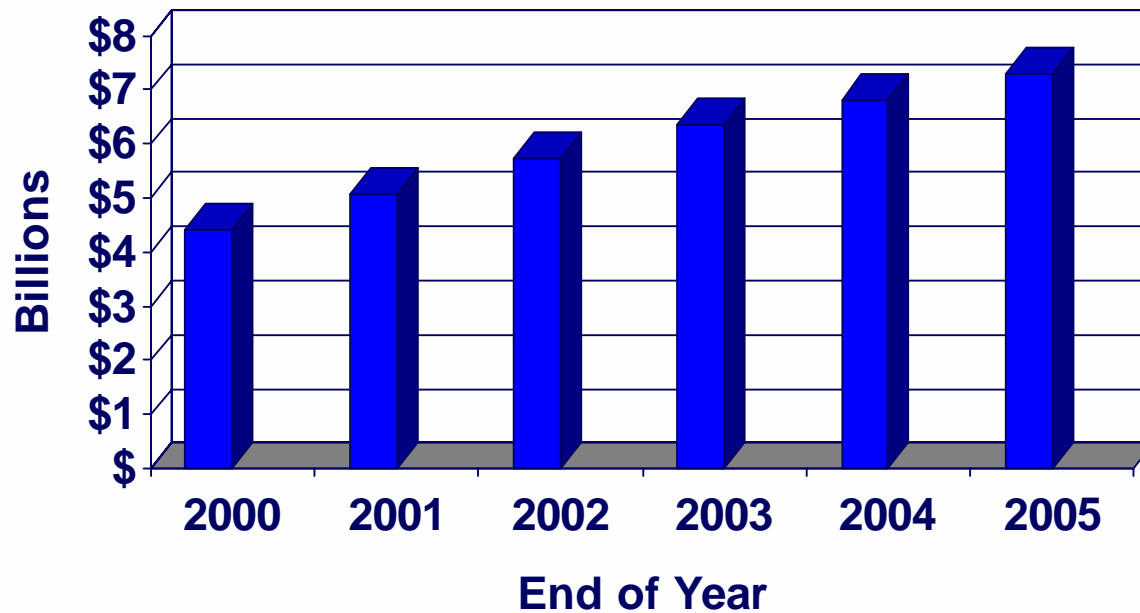


When person meets  
ADL or CI trigger



# Market Size - Premium

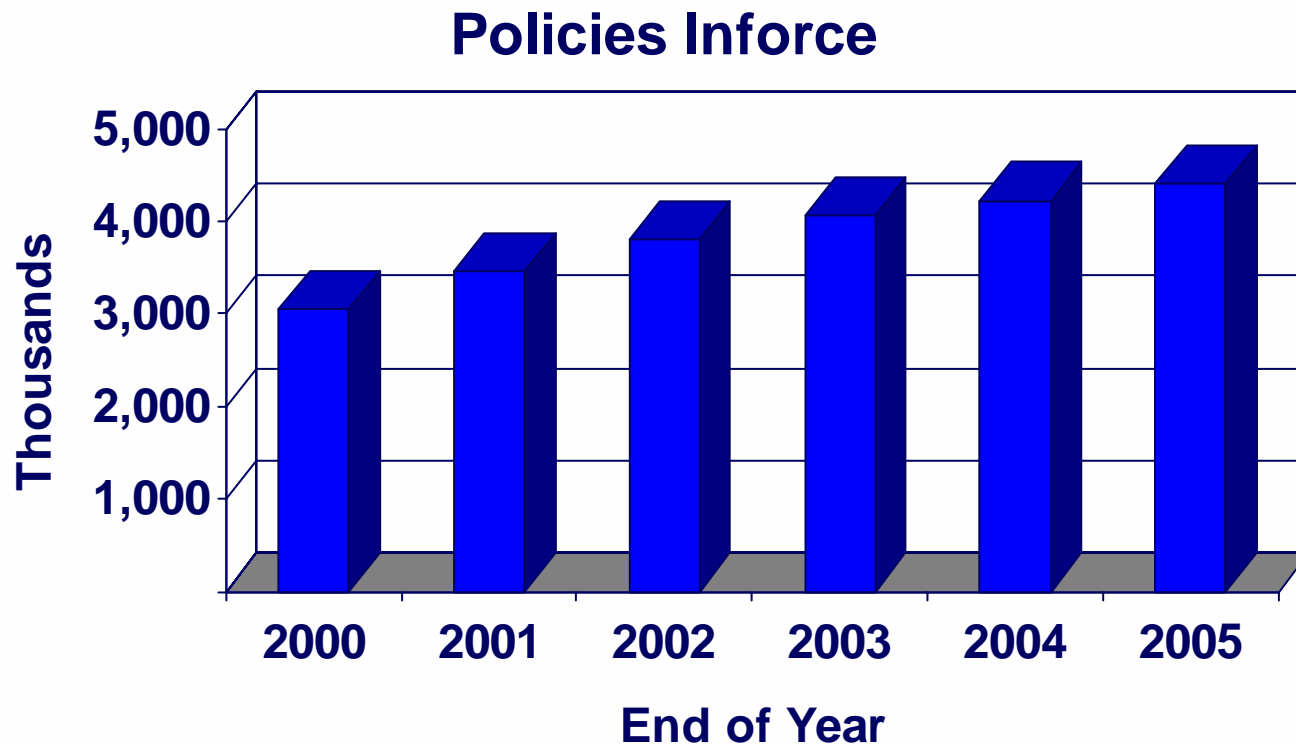
## Annualized Premium Inforce



Source: LIMRA 2005 Individual LTC Insurance Annual Review



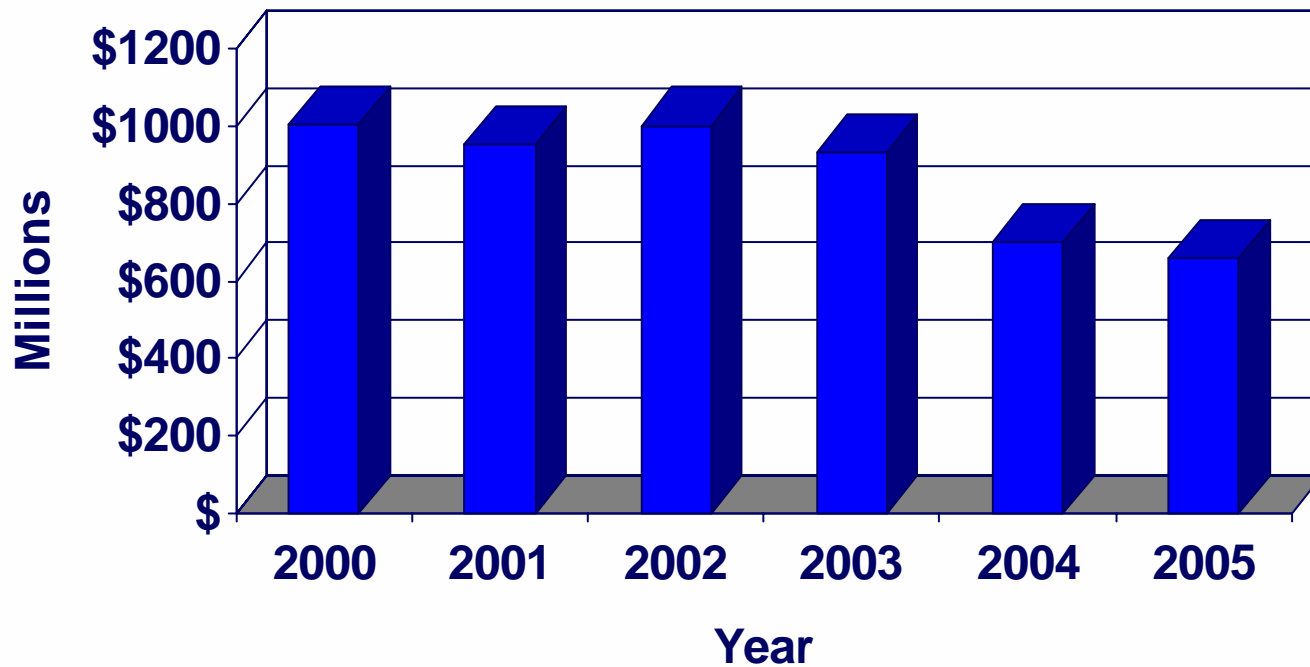
# Market Size - Policies



Source: LIMRA 2005 Individual LTC Insurance Annual Review

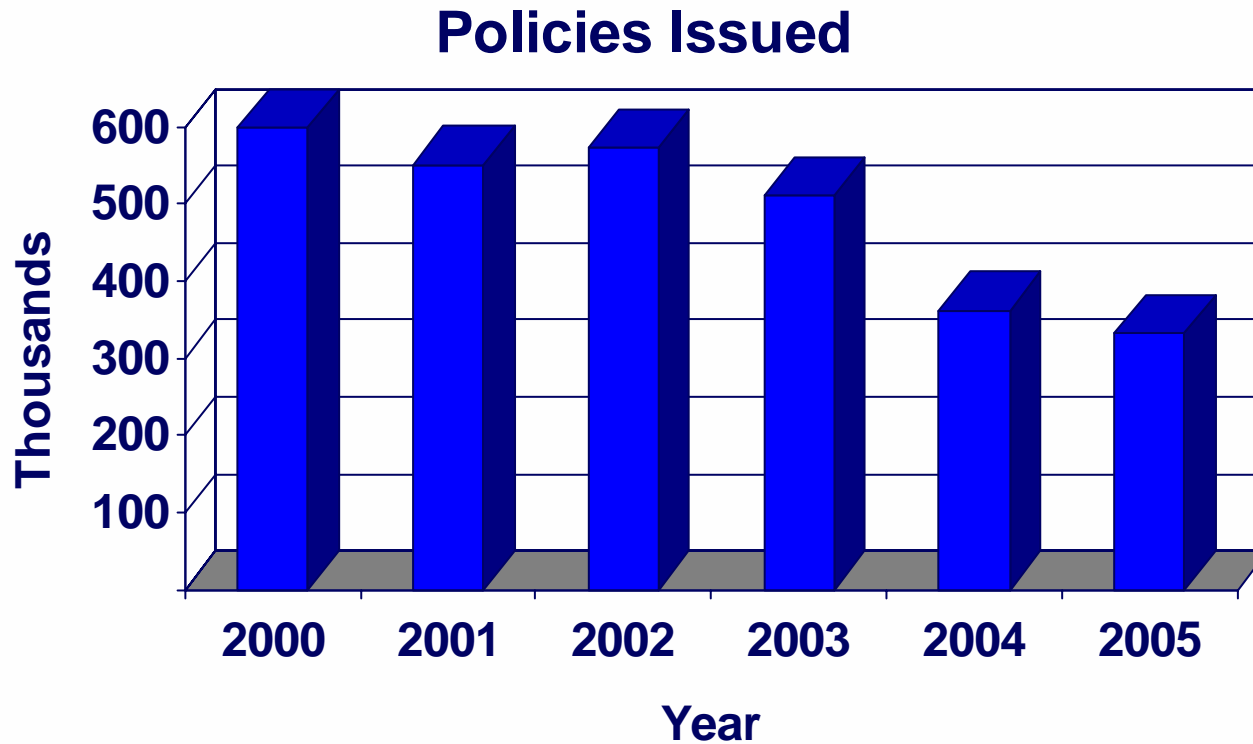
# New Sales - Premium

## Annualized Premium Issued



Source: LIMRA 2005 Individual LTC Insurance Annual Review

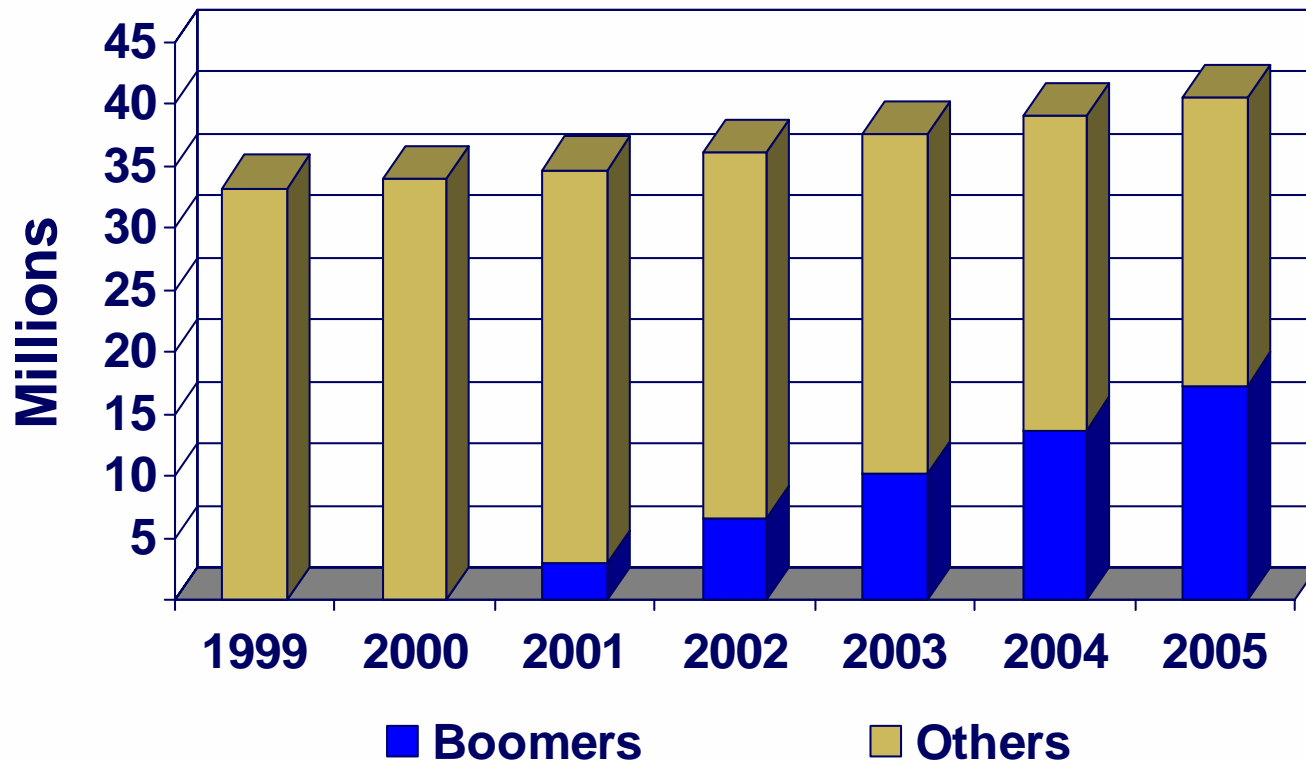
# New Sales – Policies Issued



Source: LIMRA 2005 Individual LTC Insurance Annual Review

# Target Market - Closer Look

## Population Aged 55-69



Source: U.S. Census Bureau

# 2004 Sales Characteristics

## 2005 Broker World Survey

- Sales: \$668 Million (2004) Vs. \$809 Million (2003) – 18% Decrease
- Comprehensive Coverage (90%)
- Tax-Qualified (97%+)
- Average Issue Age 61
- 51% Compound Inflation Protection, 12% Future Purchase Option
- 33% Lifetime Benefit Period
- 66% 90-100 Day Elimination Periods



# Common LTC Features Available

Source: Broker World 2005 Survey of 40 Products\*

- Alternate Plan Of Care (30)
- Care Management (34)
- Caregiver Training (31)
- Endorsed Group Discounts (25)
- Bed Reservation (38)
- Waiver Of Premium For Home Care (34)
- Restoration Of Benefits (30)
- Return Of Premium On Death (20)
- Return Of Premium With NFO Or Cash (7)
- Equipment (30)

\* Numbers in parenthesis give number offering benefit (some with extra charge).



# Features Available

(Continued)

- Spouse Discounts – 10% To 40% (40)
- Joint Waiver Of Premium (24)
- Limited Pay Options (25)
- Survivorship (26)
- Non-qualified Policies Offered (14)
- Rate Guarantees (6)
- Shared Pool Of Money (17)
- Partial Or Full Cash Benefit (11)
- Ambulance (9)
- Drugs (5)



# Pricing Considerations



# Economics of LTCL

- Lifetime loss ratio target of 55% - 60%
  - Level issue-age premium
  - Steep morbidity curve – similar to mortality
  - Very deferred benefit – much like whole life
  
- Heaped commissions
  - First year cash flow drain
  
- Low lapse rates
  
- Conservative statutory reserve standards (revised in 2004)
  - Required margins for conservatism in persistency (80% years 1-4 (max 6% year 1): 2004 standard – max ultimate lapse of 2%)
  - 1 Year preliminary term
  - 1994 GAM mortality
  - No provision for morbidity improvement allowed (2004)
  - Life valuation discount rate



# Sources of Capital Strain

- Commission Pattern
- Active life reserve and tax reserve patterns
- Punitive capital requirements

## Past RBC:

C2 risk = 5% of claim reserves plus 25% of 1<sup>st</sup> \$50 million of premium and 15% thereafter.

## New RBC (effective 2005)

C2 risk = 5% of claim reserves, plus 10% of 1<sup>st</sup> \$50 million of premium and 3% thereafter, plus 25% of 1<sup>st</sup> \$35 million of claims and 8% thereafter.



# Product “Riskiness” Data Challenges

- 1985, 1995 National Nursing Home Surveys
- 1982, 1984, 1989 National LTC Surveys
- Population Data
- Fully mature insured experience limited & based on older benefit triggers
- “Current generation of products” - insured experience heavily dependent on underwriting
- But – experience database growing in credibility





# Clue Life Insurance Company

## Effect of Various Profit Criteria



Profit Criterion	Annual Premium – No Inflation*				
	Issue Age				
	42	52	62	72	82
10% pre-tax (6% discount)	\$222	\$422	\$847	\$2,308	\$6,707
5% post-tax** (6% discount)	\$220	\$419	\$841	\$2,292	\$6,655
60% loss ratio – excluding reserves (4.5% discount)	\$301	\$539	\$989	\$2,511	\$6,639
15% IRR**	\$280	\$493	\$938	\$2,410	\$6,582

\* 90-day, 4 year option, \$100/day NH, \$100/day HHC; composite of risk classes & marital status

\*\* Uses 2.0 \* RBC of: 2% of claims liability +15% of premium

Reserve Standard: 4.5% discount, '83 GAM





# Clue Life Insurance Company

## Effect of Various Profit Criteria



Profit Criterion	Annual Premium – With Inflation*				
	Issue Age				
	42	52	62	72	82
10% pre-tax (6% discount)	\$1,092	\$1,480	\$2,089	\$3,973	\$9,165
5% post-tax** (6% discount)	\$1,076	\$1,465	\$2,072	\$3,946	\$9,095
60% loss ratio – excluding reserves (4.5% discount)	\$1,714	\$2,064	\$2,595	\$4,479	\$9,196
15% IRR**	\$1,525	\$1,869	\$2,428	\$4,298	\$9,168

\* 90-day, 4 year option, \$100/day NH, \$100/day HHC; composite of risk classes & marital status

\*\* Uses 2.0 \* RBC of: 2% of claims liability +15% of premium

Reserve Standard: 4.5% discount, '83 GAM





# Clue Life Insurance Company

## Expected Policy Year Financials



	Non-Inflationary					
	Year 1	Year 2	Year 5	Year 10	Year 20	Lifetime*
Premium	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Investment Income	<u>-1.0</u>	<u>3.2</u>	<u>16.5</u>	<u>42.3</u>	<u>123.1</u>	<u>40.9</u>
Total Income	99.0%	103.2%	116.5%	142.3%	223.1%	140.9%
Claims Incurred	7.5%	11.9%	28.5%	57.7%	162.4%	60.8%
Δ Active Life Reserves	0.0	63.5	59.2	50.1	.4	34.8
Expenses	<u>126.5</u>	<u>25.0</u>	<u>25.6</u>	<u>23.0</u>	<u>23.3</u>	<u>35.3</u>
Total Outgo	134.0%	100.4%	113.3%	130.7%	186.1%	130.9%
Pre-Tax Profit	-34.9%	2.9%	3.2%	11.6%	37.0%	10.0%

\* Discounted at 6%





# Clue Life Insurance Company

## Expected Policy Year Financials



	Inflationary					
	Year 1	Year 2	Year 5	Year 10	Year 20	Lifetime*
Premium	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Investment Income	<u>-0.6</u>	<u>3.1</u>	<u>20.3</u>	<u>57.8</u>	<u>191.7</u>	<u>75.7</u>
Total Income	99.4%	103.1%	120.3%	157.8%	291.7%	175.7%
Claims Incurred	3.3%	5.4%	14.3%	34.9%	136.4%	62.8%
Δ Active Life Reserves	0.0	84.2	90.4	99.1	95.2	69.0
Expenses	<u>122.6</u>	<u>25.1</u>	<u>25.4</u>	<u>22.3</u>	<u>21.9</u>	<u>34.0</u>
Total Outgo	125.9%	114.7%	130.1%	156.3%	253.5%	165.8%
Pre-Tax Profit	-26.5%	-11.6%	-9.8%	1.5%	38.2%	10.0%

\* Discounted at 6%



# 2005 Broker World Survey

## 18 Comprehensive Products

**\$100 Daily Benefit – *Lifetime Benefit Period***  
**90-100 Day Elimination Period – Inflation Protection**

	Single - Preferred				
Issue Age	Minimum	<b>Average</b>	Maximum	Maximum/ Minimum	2004 Ave/ 2001 Ave
55	\$1,266	<b>\$1,939</b>	\$2,894	229%	145%
60	\$1,485	<b>\$2,427</b>	\$3,473	234%	136%
65	\$2,147	<b>\$3,200</b>	\$4,419	206%	139%
70	\$3,251	<b>\$4,593</b>	\$6,031	186%	126%
	Married Couple - Preferred				
55	\$1,538	<b>\$2,726</b>	\$4,335	282%	116%
60	\$2,140	<b>\$3,423</b>	\$5,188	242%	114%
65	\$3,160	<b>\$4,549</b>	\$6,579	208%	110%
70	\$4,548	<b>\$6,548</b>	\$8,692	191%	108%



# 2005 Broker World Survey

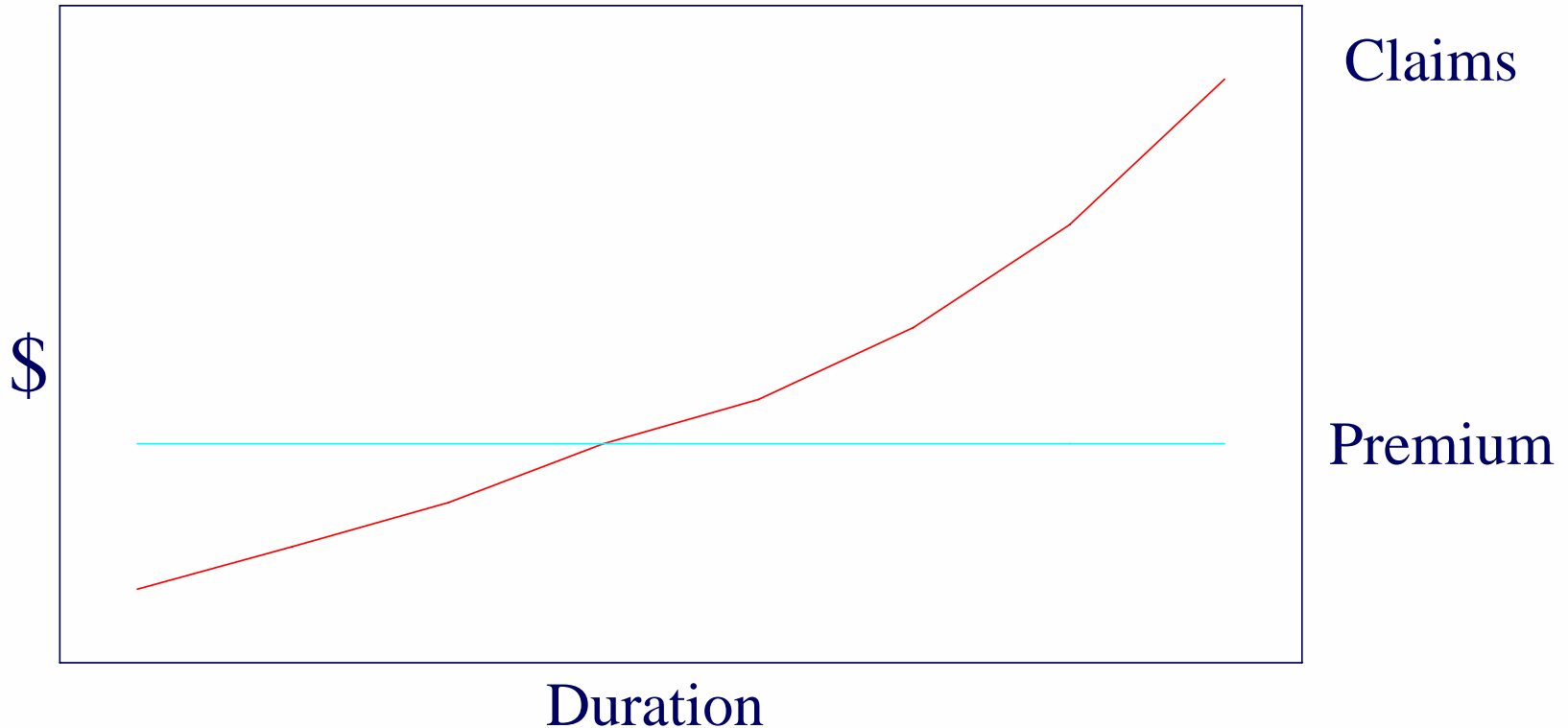
## 18 Comprehensive Products

**\$100 Daily Benefit – 3 Year Benefit Period**  
**90-100 Day Elimination Period – Inflation Protection**

	Single - Preferred				
Issue Age	Minimum	Average	Maximum	Maximum/ Minimum	2004 Ave/ 2001 Ave
55	\$868	<b>\$1,086</b>	\$1,647	190%	124%
60	\$1,040	<b>\$1,346</b>	\$1,992	192%	120%
65	\$1,420	<b>\$1,778</b>	\$2,549	180%	116%
70	\$1,885	<b>\$2,596</b>	\$3,493	185%	114%
	Married Couple - Preferred				
55	\$1,216	<b>\$1,559</b>	\$2,425	199%	111%
60	\$1,414	<b>\$1,922</b>	\$2,935	208%	108%
65	\$1,727	<b>\$2,528</b>	\$3,766	218%	103%
70	\$2,263	<b>\$3,687</b>	\$5,010	221%	102%



# Importance of Lapse Rates



$$\text{PV of Premiums} = \text{PV of claims} + \text{PV of expenses}$$

(All with lapse assumption)

# Lapse Rate Trends

## Pricing Assumptions – Age 65-69

Early Policy Generations			
Policy Year	Company A	Company B	Company C
1	18%	20%	40%
2	14	15	20
3	10	10	8
4	7	8	8
5+	7	6	8



# Recent Lapse Experience

Policy Year	Company D	Company E	Company F	Company G
1	2.0%	4.0%	7.0%	6.5%
2	1.5	2.5	4.2	4.5
3	1.0	2.0	2.7	3.5
4	1.0	1.5	2.1	2.5
5	1.0	1.5	2.0	1.5
6+	1.0	1.0	1.5	1.5





# Clue Life Insurance Company

## Effect of Lower Lapse Rates



	Priced Lapses	Revised Lapses
Year 1	5%	4%
Year 2	4	3
Year 3	3	2
Year 4+	2	1



<u>Item</u>	<u>Age 42</u>	<u>Age 62</u>	<u>Age 82</u>	<u>TOTAL</u>
Pre-Tax Profit (No Inflation)	-1.5	5.1	9.5	5.1
Premium Change Needed	17.9	8.0	0.9	8.1
<hr/>				
Pre-Tax Profit (with Inflation)	-7.8	2.9	9.2	0.5
Premium Change Needed	27.8	11.6	1.5	15.3





# Clue Life Insurance Company

## Effect of Change in Investment Income

Priced Investment Rate = 6%  
Revised Investment Income Rate = 5%

<u>Item</u>	<u>Age 42</u>	<u>Age 62</u>	<u>Age 82</u>	<u>TOTAL</u>
Pre-tax Profit (No Inflation)	-1.8	4.2	8.6	4.4
Premium Change Needed	18.5	9.4	2.7	9.4
<hr/>				
Pre-Tax Profit (with Inflation)	-7.5	2.1	8.3	0.2
Premium Change Needed	27.5	12.9	3.3	16.0





# Clue Life Insurance Company

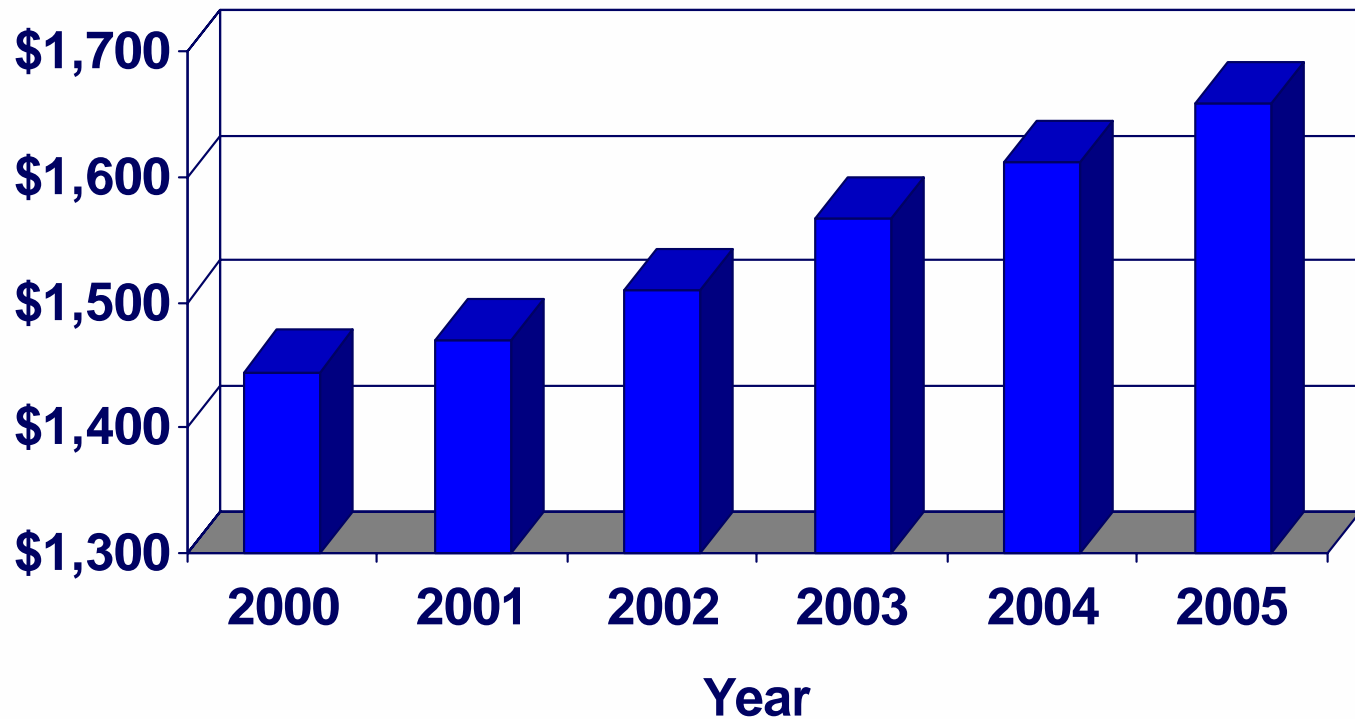
## Other Factors Impacting Profits

- Male/female split assumed/where it's applied
- Age distribution
- Distribution by BP/EP
- Percent of insureds that are married
- Spouse/preferred risk discounts
- Average policy size
- Expenses varying by age
- Reserve assumptions
- Margins for adverse deviation
- Salvage on maximum benefits



# Average Premium Inforce

## Average Annualized Premium Inforce

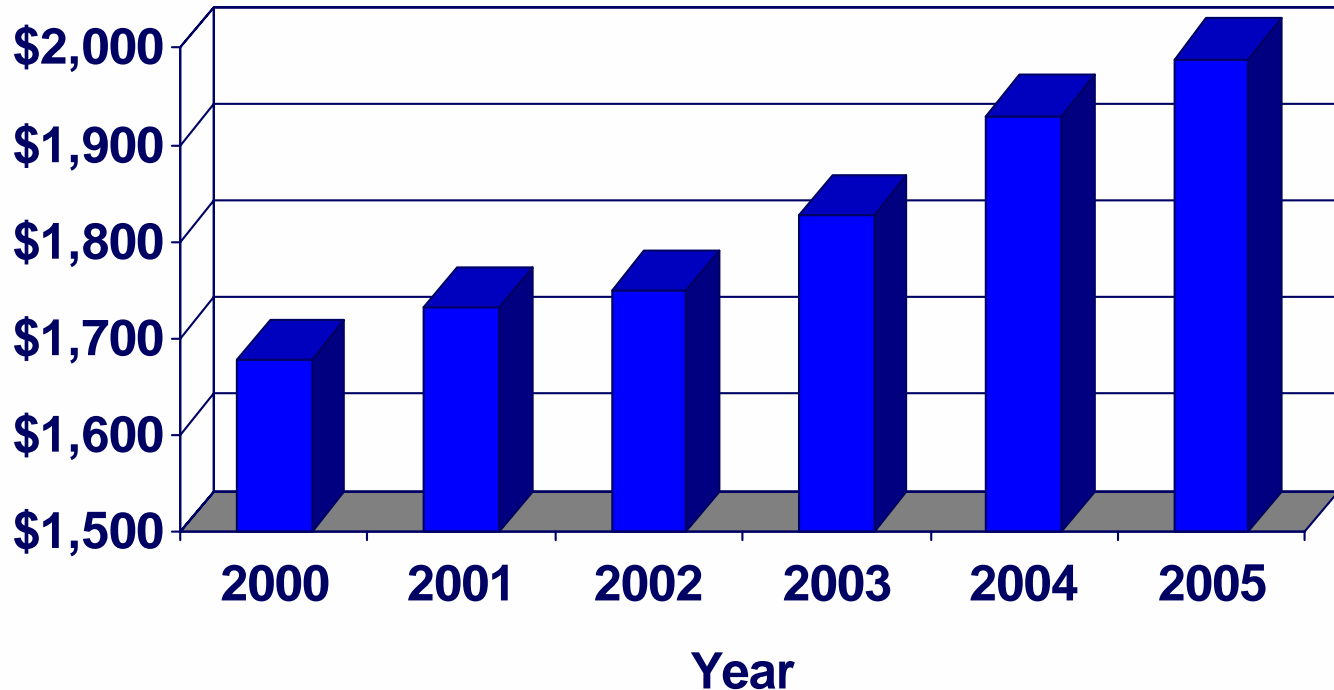


Source: LIMRA 2005 Individual LTC and Medicare Supplement Insurance Survey



# Average New Business Premium

## Average Annualized Premium Issued



Source: LIMRA 2005 Individual LTC and Medicare Supplement Insurance Survey



# Top 20 Individual Writers In 2004

<u>Rank</u>	<u>Company</u>	<u>Production (\$millions)</u>
1	Genworth	153
2	John Hancock	114
3	MetLife	86
4	Bankers L&C	62
5	MassMutual	25
6	Allianz	24
7	UNUM	20
8	Lincoln Benefit	19
9	Prudential	19
10	Penn Treaty	18
11	New York Life	18
12	State Farm	15
13	Physicians Mutual	13
14	MedAmerica	11
15	Mutual of Omaha	9
16	Equitable L&C	8
17	State Life	8
18	Knights of Columbus	4
19	Kanawha	4
20	AFLAC	3

Source: 7<sup>th</sup> Annual LTC Insurance Survey, Broker World Magazine



# Changes To Top 20

## ■ Off List:

- LTC Partners
- AF&L
- Northwestern Mutual
- Monumental
- Life Investors

## ■ New To List

- Penn Treaty
- Physicians Mutual
- Equitable L&C
- Knights Of Columbus
- Kanawha
- AFLAC

Source: 6<sup>th</sup> & 7<sup>th</sup> Annual LTC Insurance Surveys, Broker World Magazine



# Universal Life/LTC

## Combo Products Market Statistics

- Sales Information
  - Lincoln National MoneyGuard Golden Rule Asset Care, John Hancock Performance UL, and New York Life Asset Preserver are leading products
  - Total industry estimated sales for 2004: \$400 – 600 Million
  - 80-90% of sales (in dollars) are single premium



# Universal Life/LTC

## Product Positioning

- Consumers: Pre-retired and retired adults
  - Self-insure LTC risk; have not purchased LTC
  - Ages: 40 – 80; with focus on 50 – 70
  - Gender: Women are majority of purchasers (55-70%)
  - Assets: \$300,000 - \$500,000 in invested assets
- Producers: “Transactional” Life Producers
  - Comfortable with life insurance sale
  - Asset repositioning sales track



# Basic Models of UL/LTC Plan Designs

- Three variables: pool of money, monthly maximum, benefit period. Knowing any two will determine the third.
- Model A: Pool of money = face amount  
Benefit period = 2, 3, etc. years  
Monthly max =  $\text{pool}/(\text{BP} \times 12)$
- Model B: Pool of money = face amount  
Monthly benefit = % of face amount (e.g. 2%)  
Benefit period =  $(\text{pool}/\text{monthly benefit})/12$



# Annuity + LTC Combinations

- Base product is single premium deferred annuity
- Annuity account value funds initial LTC costs
- Rider provides LTC benefits afterwards at a multiple of annuity account value

