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Long-Term Care (LTC) Terminations Work Group

Update to LTC Actuarial Working Group

August 15, 2014

Warren Jones, MAAA, FSA, FCA

Chairperson, LTC Terminations Work Group

Tables Used

- Actual–to–expected mortality calculated for:
  - 1994 Group Annuity Mortality
  - 2012 Individual Annuity Mortality (IAM) Basic Table (without margin)
  - Both tables are age-near-birthday basis. LTC is sold on age-last-birthday basis.

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2012 Individual Annuity Reserving

- Generational mortality table includes:
  - Margin (2012 Individual Annuity Mortality period table)
  - Projection factors scale G2 (mortality improvement factors)
  - Projection factors developed from the Social Security Administration data
  - LTC data too limited to validate projection factors

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Data

- LTC intercompany experience data 1984-2007

- Work group specified data that was compiled by the Medical Information Bureau (MIB)

- Data summarized and company de-identified by SOA

- Limited to top 9 companies by exposures and experience years 1993 - 2006 to address data quality

- Work group feels comfortable that the resulting experience is an accurate representation of LTC insured mortality

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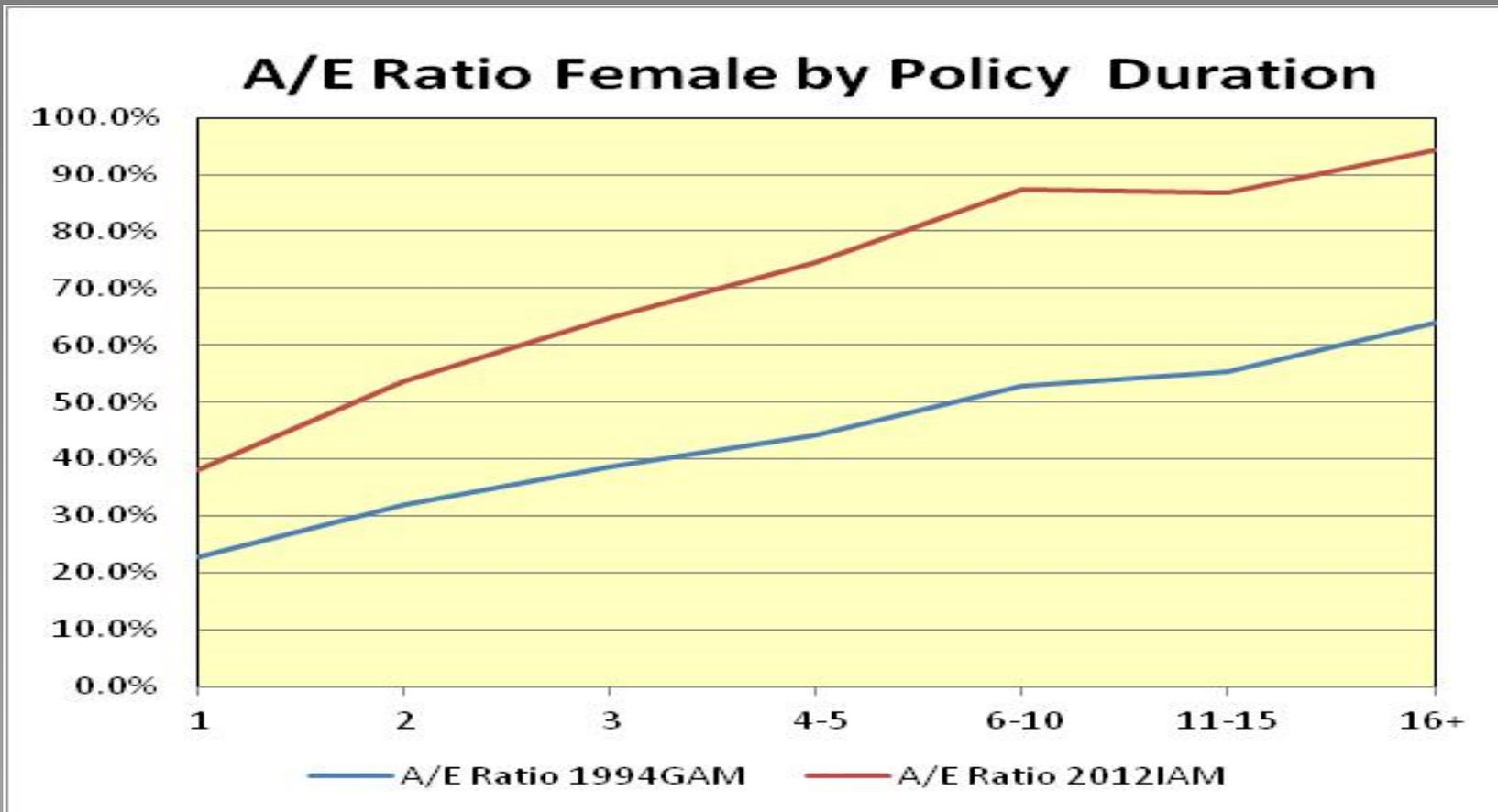Objective.
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By Policy Duration

- Underwriting selection is observed in actual deaths

- Both 1994 GAM and 2012 IAM are aggregate tables
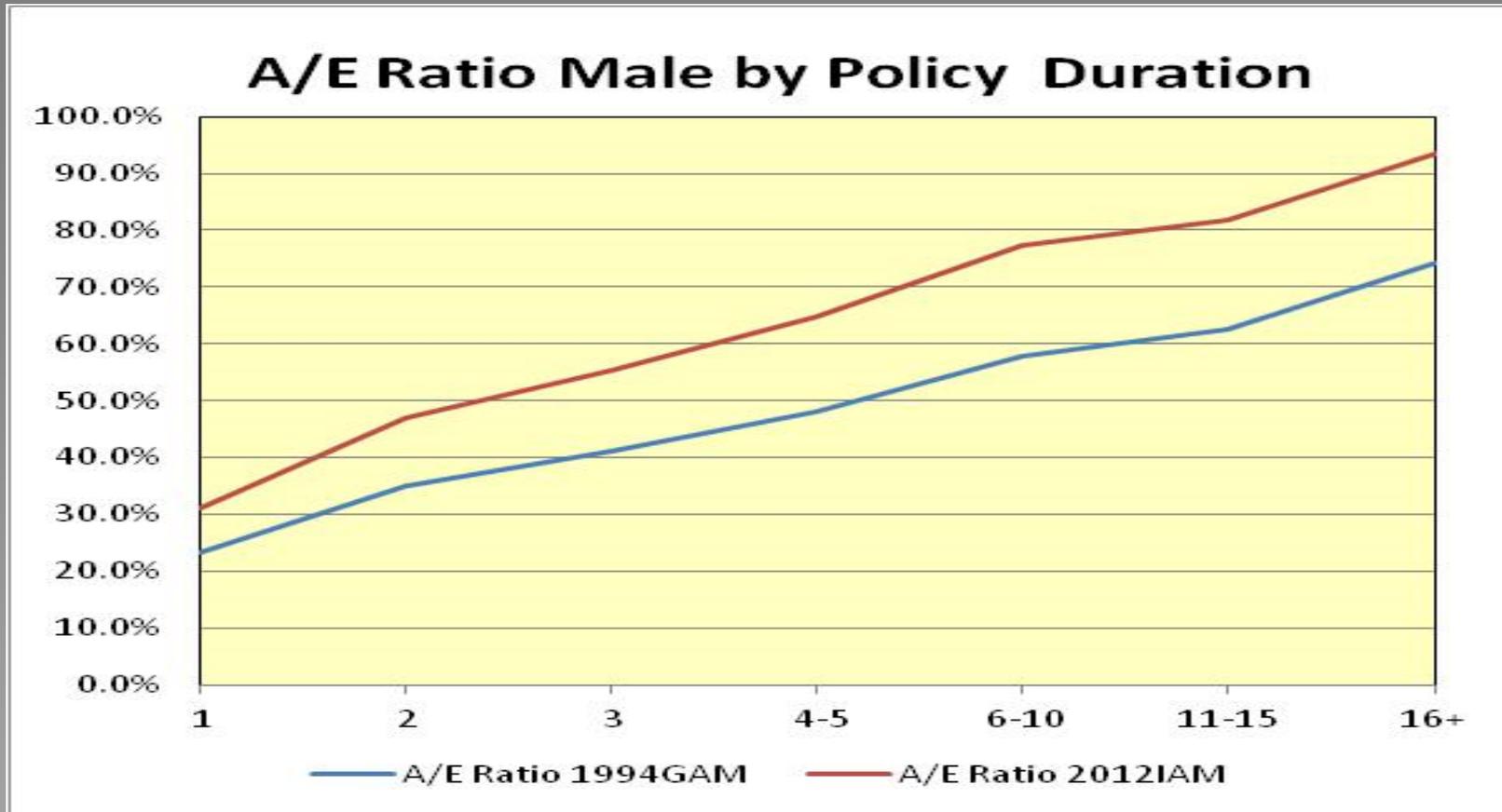
- 2012 IAM is a better fit than 1994 GAM

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Female by Policy Duration

A/E Ratio Female by Policy Duration

Data compiled by MIB

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Male by Policy Duration

A/E Ratio Male by Policy Duration

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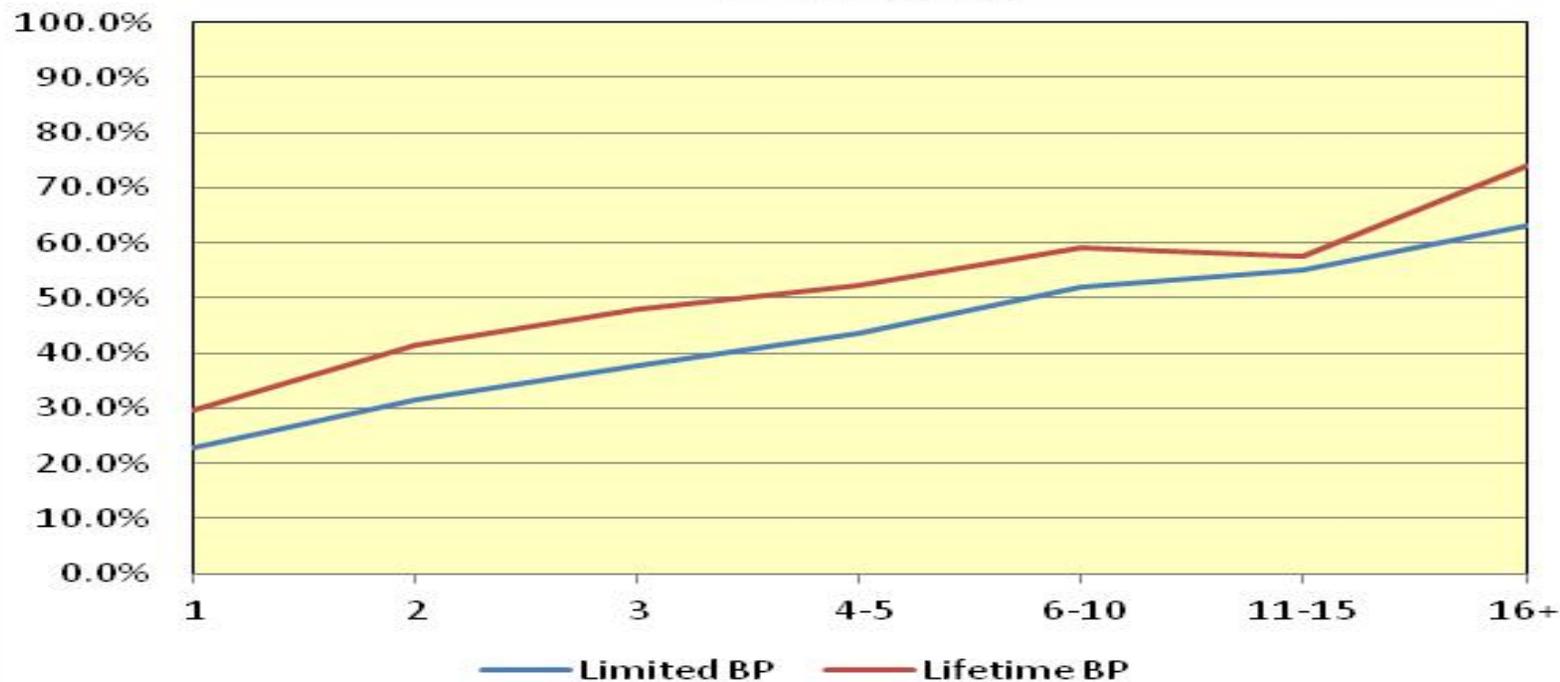*Objective.*
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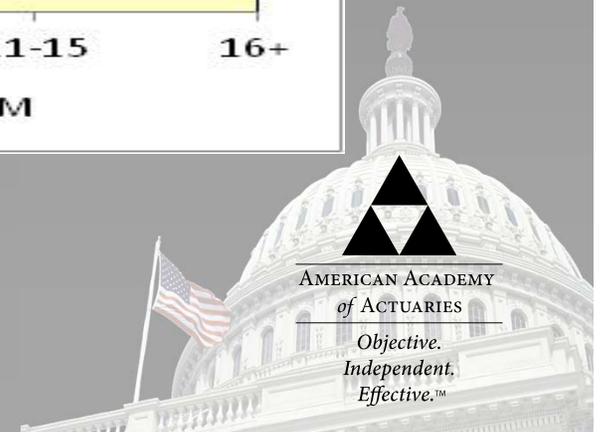
By Policy Duration

- Limited benefit period versus lifetime benefit period

- Benefit exhaustion eliminates some deaths in limited benefit period experience

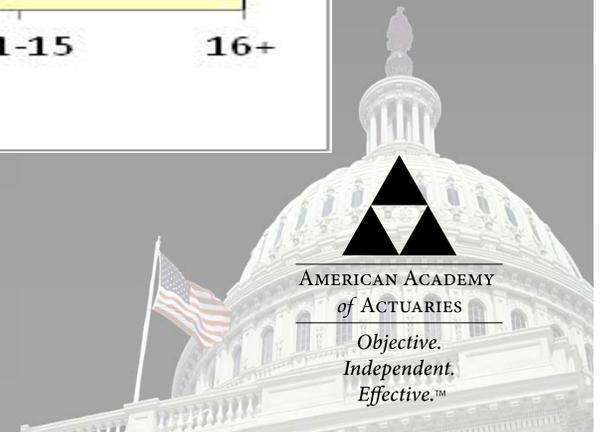- 2012 IAM is a better fit than 1994 GAM

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1994 GAM Female by Policy Duration

A/E Ratio 1994 GAM Female by Policy Duration

Data compiled by MIB

1994 GAM Male by Policy Duration

A/E Ratio 1994 GAM Male by Policy Duration

Data compiled by MIB

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2012 IAM Female by Policy Duration

A/E Ratio 2012 IAM Female by Policy Duration
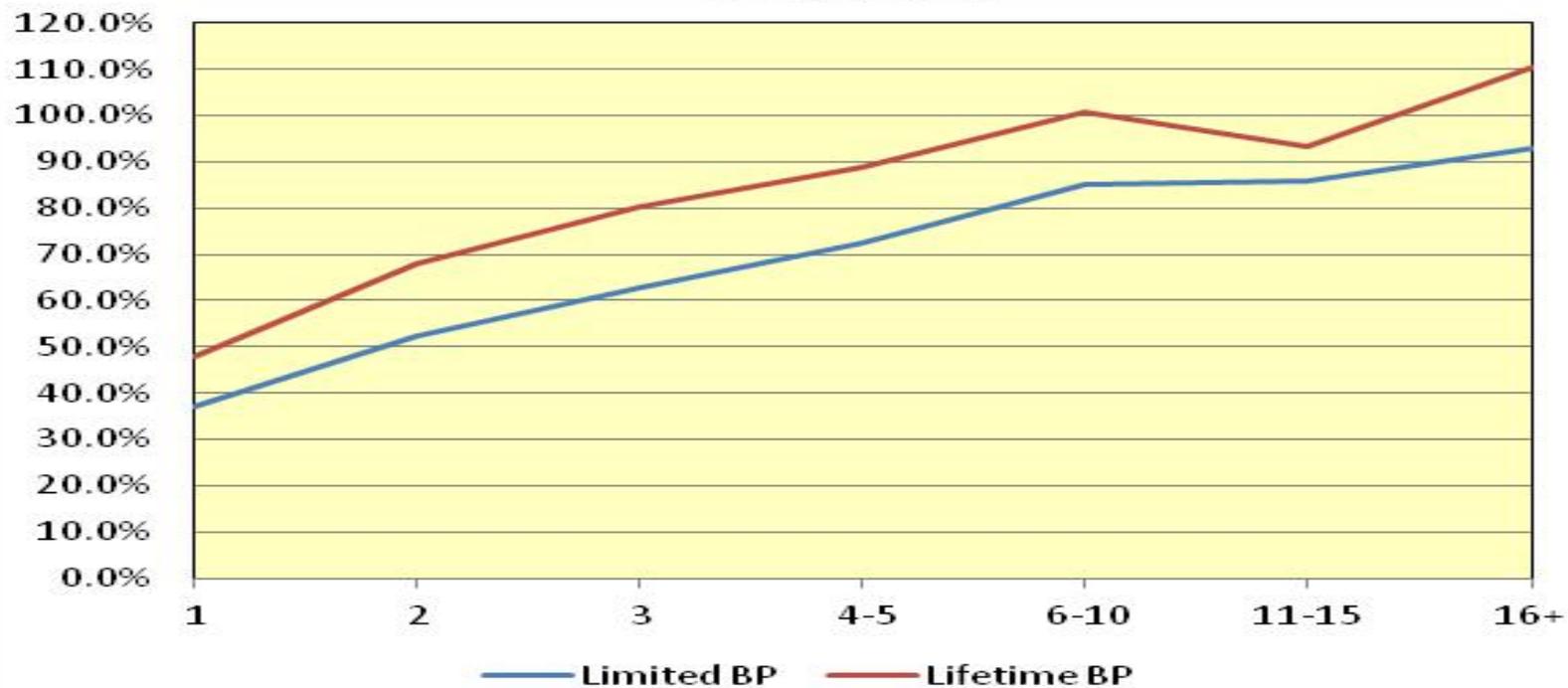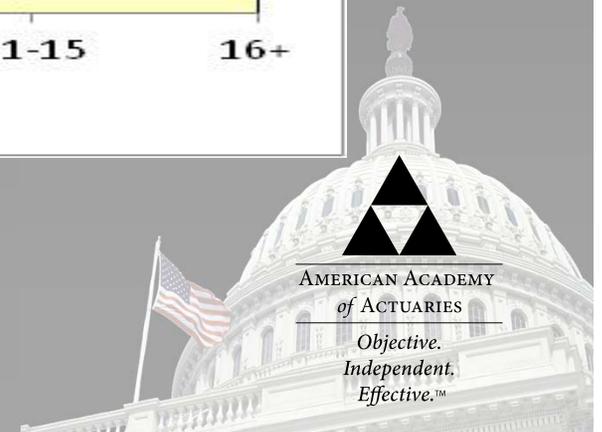
2012 IAM Male by Policy Duration

A/E Ratio 2012 IAM Male by Policy Duration

Limited BP — Lifetime BP

Data compiled by MIB

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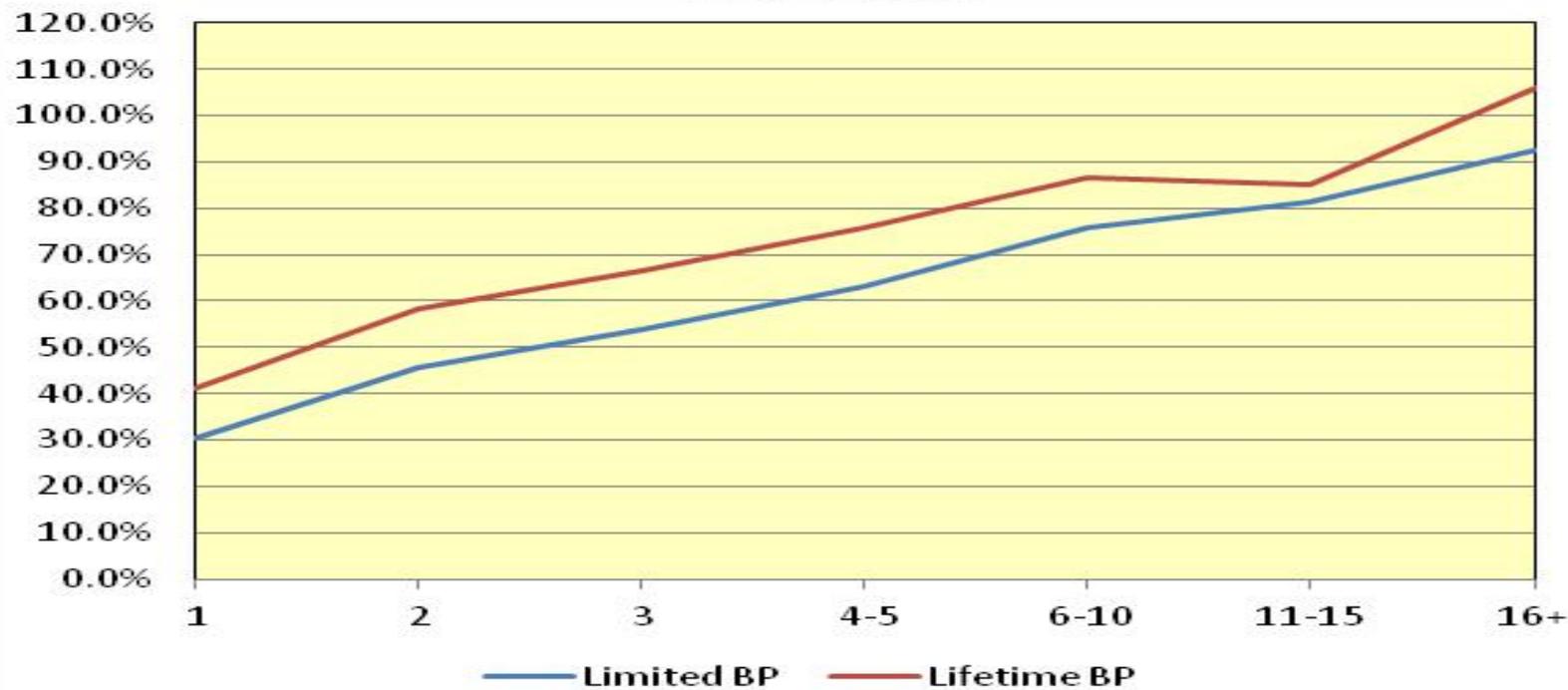
By Attained Age

- Limited benefit period versus lifetime benefit period

- Policy durations 1 – 5 years excluded to reduce the impact of underwriting selection

- 2012 IAM is a better fit than 1994 GAM

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1994 GAM Female by Attained Age

A/E Ratio 1994 GAM Female by Attained Age Excludes Durations 1 - 5

Data compiled by MIB

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1994 GAM Male by Attained Age

A/E Ratio 1994 GAM Male by Attained Age Excludes Durations 1 - 5

Data compiled by MIB

2012 IAM Female by Attained Age

A/E Ratio 2012 IAM Female by Attained Age Excludes Durations 1 - 5
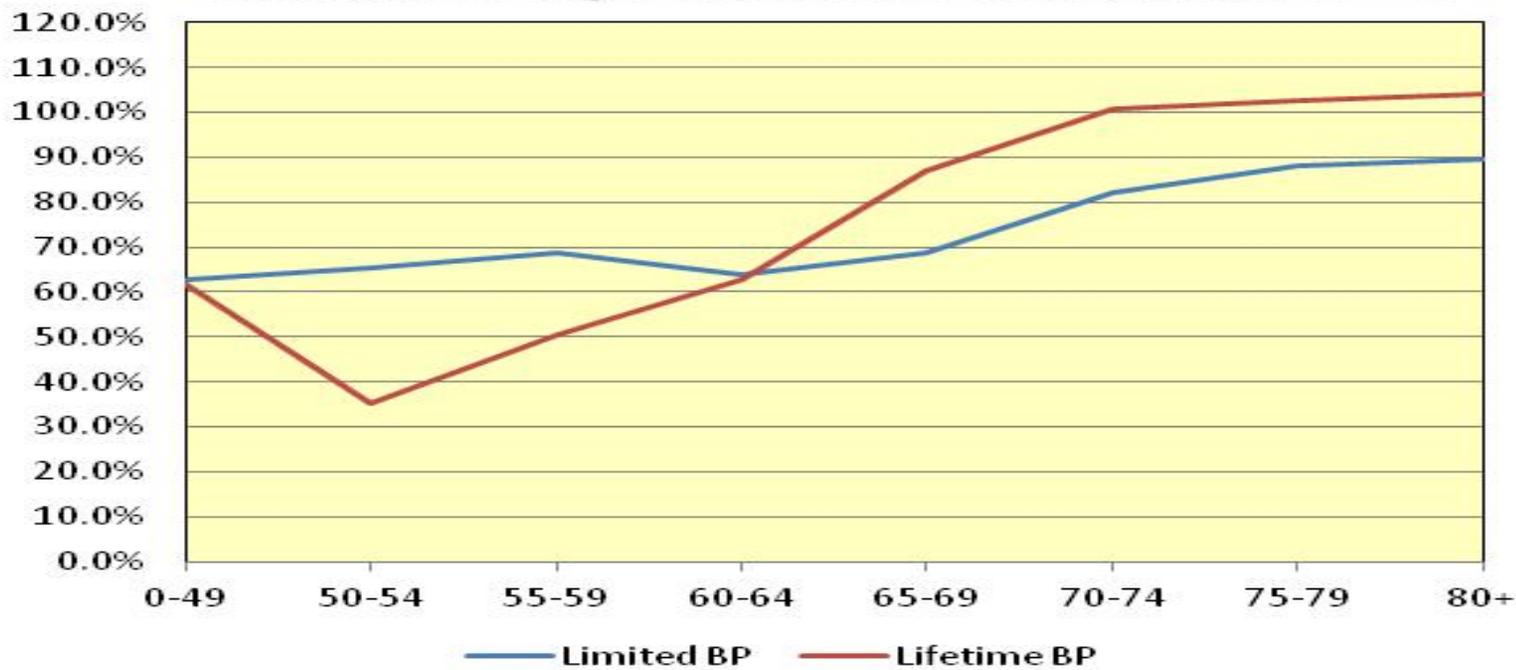
Data compiled by MIB

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2012 IAM Male by Attained Age

A/E Ratio 2012 IAM Male by Attained Age Excludes Durations 1 - 5

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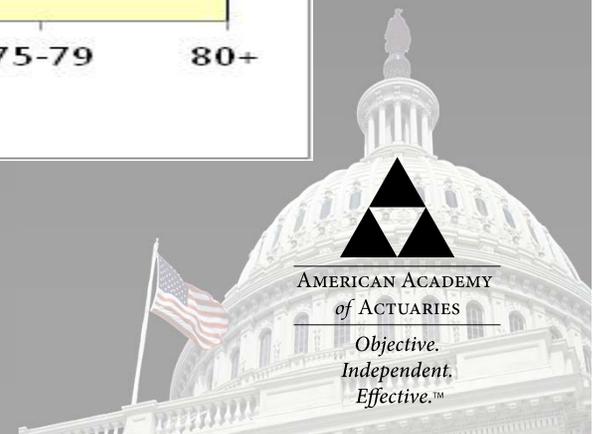
By Issue Age

- Lifetime benefit period only

- Policy durations 1 – 5 years excluded to reduce the impact of underwriting selection

- Compares experience of exposed lives summarized to issue ages relevant to LTC

- 2012 IAM is a better fit than 1994 GAM

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Female by Issue Age

A/E Ratio Female by Issue Age
Lifetime Benefits Excludes Durations 1 - 5
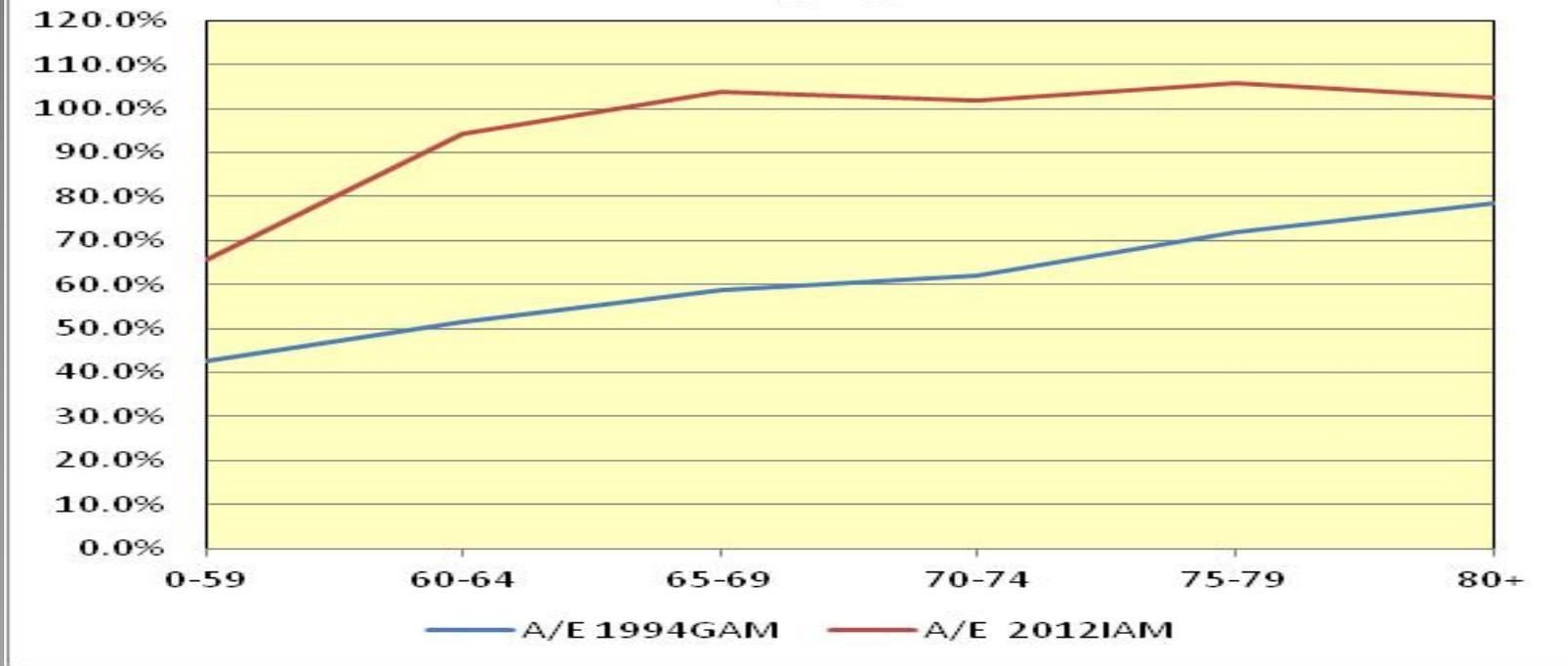
A/E 1994GAM   A/E 2012IAM

Data compiled by MIB

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Male by Issue Age

A/E Ratio Male by Issue Age Lifetime Benefits Excludes Durations 1 - 5

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Appendix

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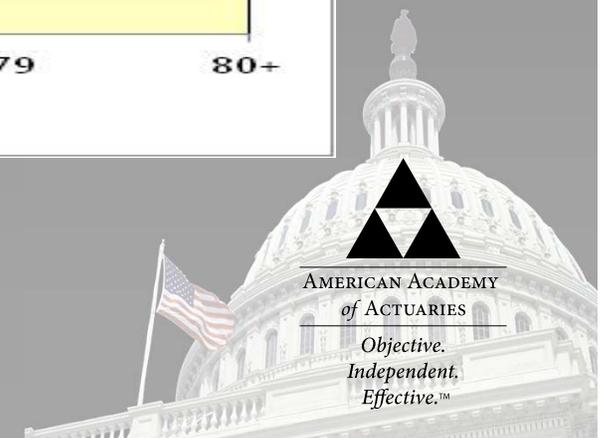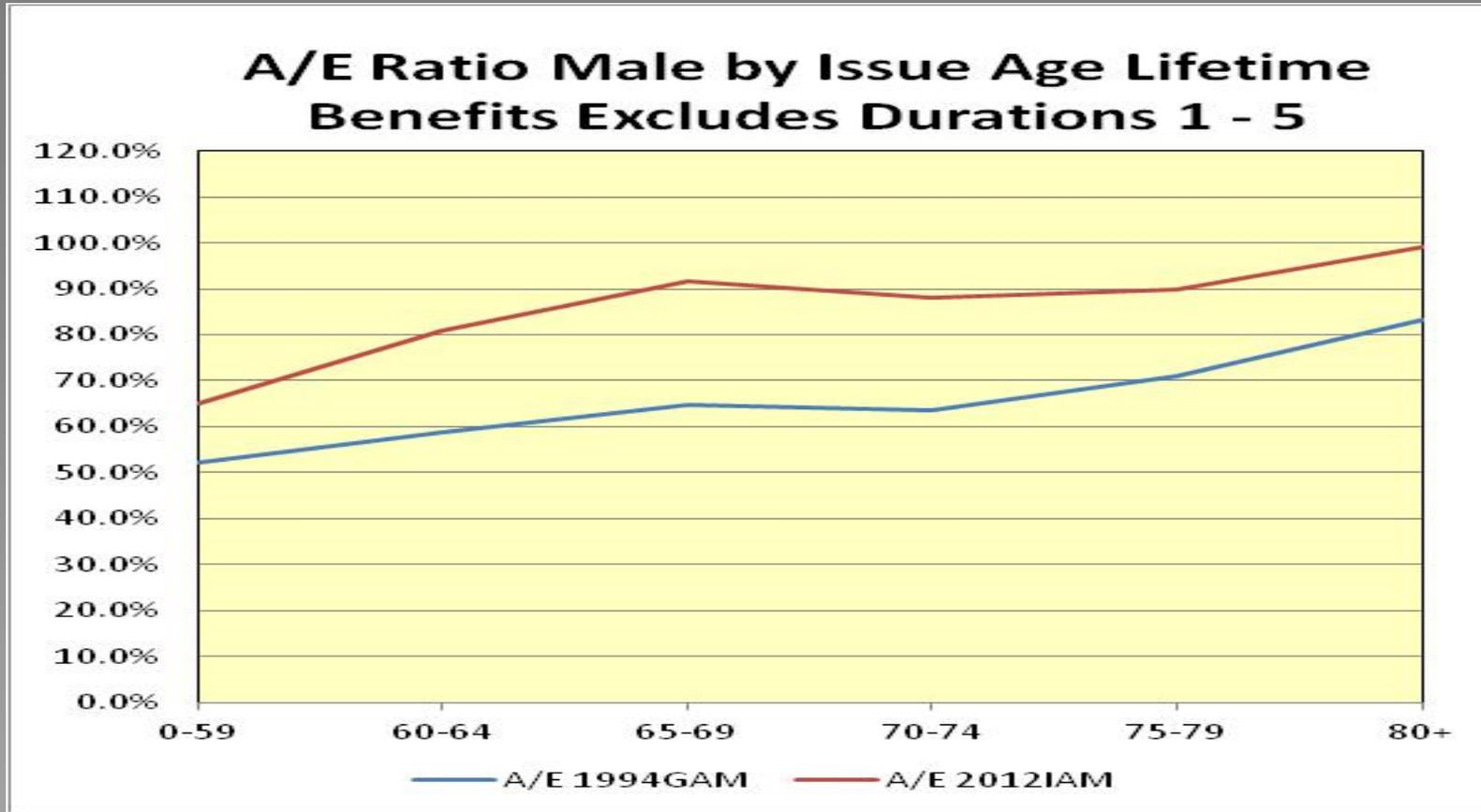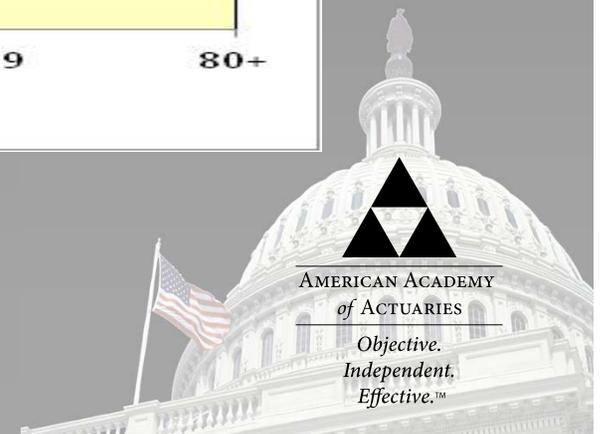
Policy Duration

Duration	Female				Male		
	1994 GAM	2012 IAM			1994 GAM	2012 IAM	
	A:E	A:E	Deaths		A:E	A:E	Deaths
1	23.3%	38.1%	7,432		23.6%	31.4%	6,245
2	32.4%	53.6%	10,100		35.3%	47.0%	9,213
3	38.9%	64.5%	11,828		41.4%	55.4%	10,833
4-5	44.5%	74.3%	25,574		48.2%	64.7%	24,805
6-10	52.9%	87.0%	55,217		57.8%	77.1%	58,871
11-15	55.3%	86.7%	25,918		62.6%	81.7%	31,700
16+	63.9%	94.2%	5,963		74.2%	93.4%	8,826

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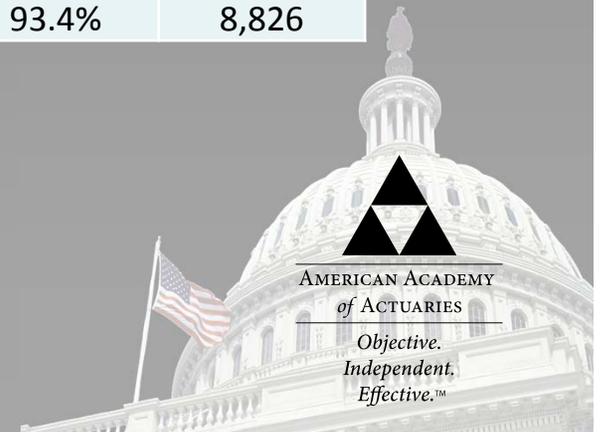
Female Policy Duration/Benefit Period

	Female						
	Limited BP				**Lifetime BP**		
	1994 GAM	**2012 IAM**			**1994 GAM**	**2012 IAM**	
Duration	**A:E**	**A:E**	**Deaths**		**A:E**	**A:E**	**Deaths**
1	22.7%	37.2%	6,687		29.5%	47.8%	745
2	31.6%	52.2%	8,993		41.3%	67.9%	1,107
3	37.9%	62.9%	10,410		48.0%	80.1%	1,418
4-5	43.5%	72.4%	22,131		52.2%	88.9%	3,443
6-10	52.0%	85.0%	47,194		59.1%	100.7%	8,023
11-15	55.1%	85.9%	23,051		57.6%	93.3%	2,867
16+	63.2%	93.1%	5,513		74.1%	110.4%	450

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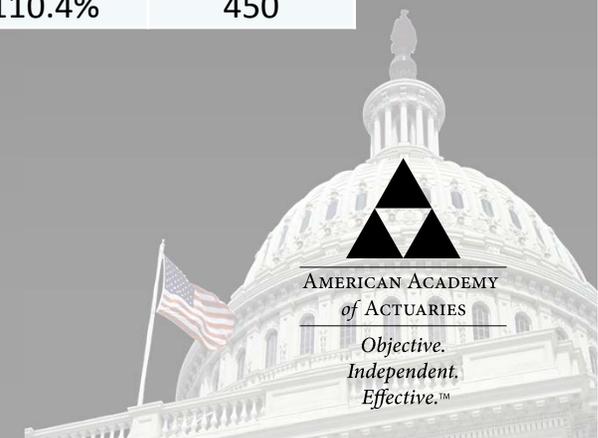
Male Policy Duration/Benefit Period

	Male						
	Limited BP				**Lifetime BP**		
	1994 GAM	**2012 IAM**			**1994 GAM**	**2012 IAM**	
Duration	**A:E**	**A:E**	**Deaths**		**A:E**	**A:E**	**Deaths**
1	22.9%	30.4%	5,493		31.5%	41.3%	752
2	34.3%	45.8%	8,085		44.1%	58.2%	1,128
3	40.3%	54.0%	9,400		50.1%	66.6%	1,433
4-5	47.0%	63.1%	21,132		56.1%	75.7%	3,673
6-10	56.8%	75.6%	49,738		63.7%	86.5%	9,133
11-15	62.5%	81.3%	27,999		63.7%	85.0%	3,701
16+	73.6%	92.5%	8,180		82.8%	106.1%	646

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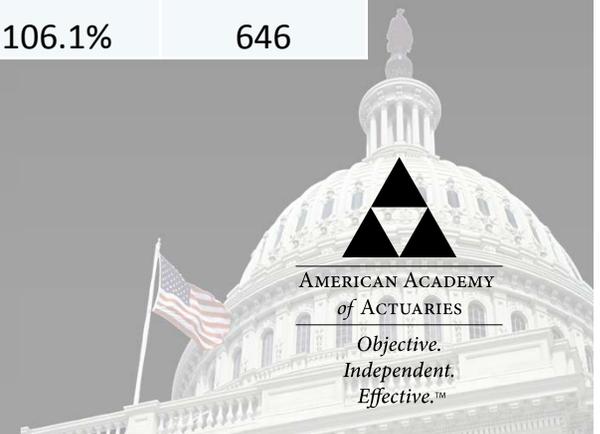
Female Attained Age/Benefit Period/Excludes Durations 1 - 5

	Female - Excludes Durations 1 - 5						
	Limited BP				Lifetime BP		
Attained	1994 GAM	2012 IAM			1994 GAM	2012 IAM	
Age	A:E	A:E	Deaths		A:E	A:E	Deaths
0-49	55.3%	62.9%	303		53.8%	61.5%	16
50-54	56.8%	65.5%	353		30.5%	35.2%	15
55-59	52.2%	68.6%	723		38.1%	50.3%	61
60-64	42.6%	63.9%	1,390		41.7%	62.8%	232
65-69	38.5%	68.9%	3,584		48.5%	86.9%	919
70-74	44.1%	82.0%	10,523		54.2%	100.6%	2,513
75-79	50.9%	88.2%	18,324		59.1%	102.5%	3,321
80+	61.1%	89.7%	40,558		68.5%	104.2%	4,263

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Male Attained Age/Benefit Period/Excludes Durations 1 - 5

	Male - Excludes Durations 1 - 5						
	Limited BP				Lifetime BP		
Attained	1994 GAM	2012 IAM			1994 GAM	2012 IAM	
Age	A:E	A:E	Deaths		A:E	A:E	Deaths
0-49	59.5%	67.2%	221		55.4%	62.6%	13
50-54	67.5%	72.3%	221		53.1%	56.8%	23
55-59	67.2%	74.1%	611		50.5%	55.9%	80
60-64	51.7%	62.3%	1,298		50.8%	61.3%	307
65-69	47.5%	64.5%	3,608		52.8%	71.7%	1,003
70-74	54.3%	75.1%	9,948		62.8%	86.8%	2,570
75-79	56.5%	81.7%	17,471		63.3%	91.6%	3,483
80+	63.7%	80.5%	52,487		69.7%	90.2%	6,001

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Issue Age/Lifetime Benefit Period/Excludes Durations 1 - 5

		Lifetime BP - Excludes Durations 1 - 5						
		Female				**Male**		
Issue		**1994 GAM**	**2012 IAM**			**1994 GAM**	**2012 IAM**	
Age		**A:E**	**A:E**	**Deaths**		**A:E**	**A:E**	**Deaths**
0-59		42.6%	65.8%	592		52.2%	65.0%	796
60-64		51.5%	94.3%	1,848		58.7%	81.0%	2,014
65-69		58.7%	104.0%	3,806		64.8%	91.5%	3,823
70-74		62.1%	102.0%	3,005		63.7%	88.1%	3,407
75-79		72.0%	105.9%	1,848		71.0%	89.8%	2,881
80+		78.6%	102.6%	241		83.3%	99.2%	559

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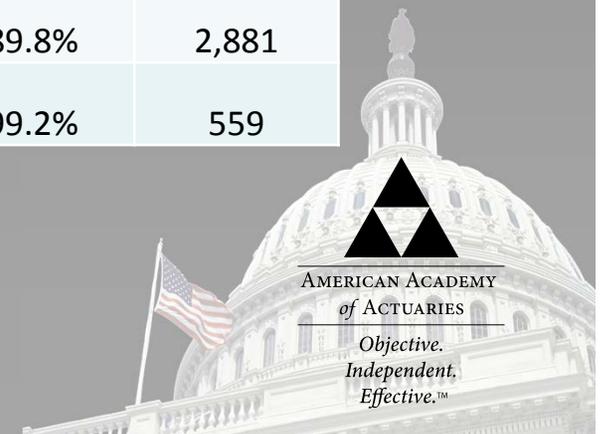
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