

# LONG-TERM CARE (LTC) VALUATION WORK GROUP

## PRESENTATION TO NAIC LTC ACTUARIAL WORKING GROUP



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# Charges to the LTC Valuation Work Group

- Develop a replacement mortality table for Long-term Care (LTC) life reserves
  - Based on the 2012 Annuitant Mortality Table
  - Recommend a margin for conservatism
- Develop a replacement lapse table
  - Recommend a margin for conservatism
- Consider developing tables for valuation on total lives basis as well as active lives basis



# Proposed Factors for Tables

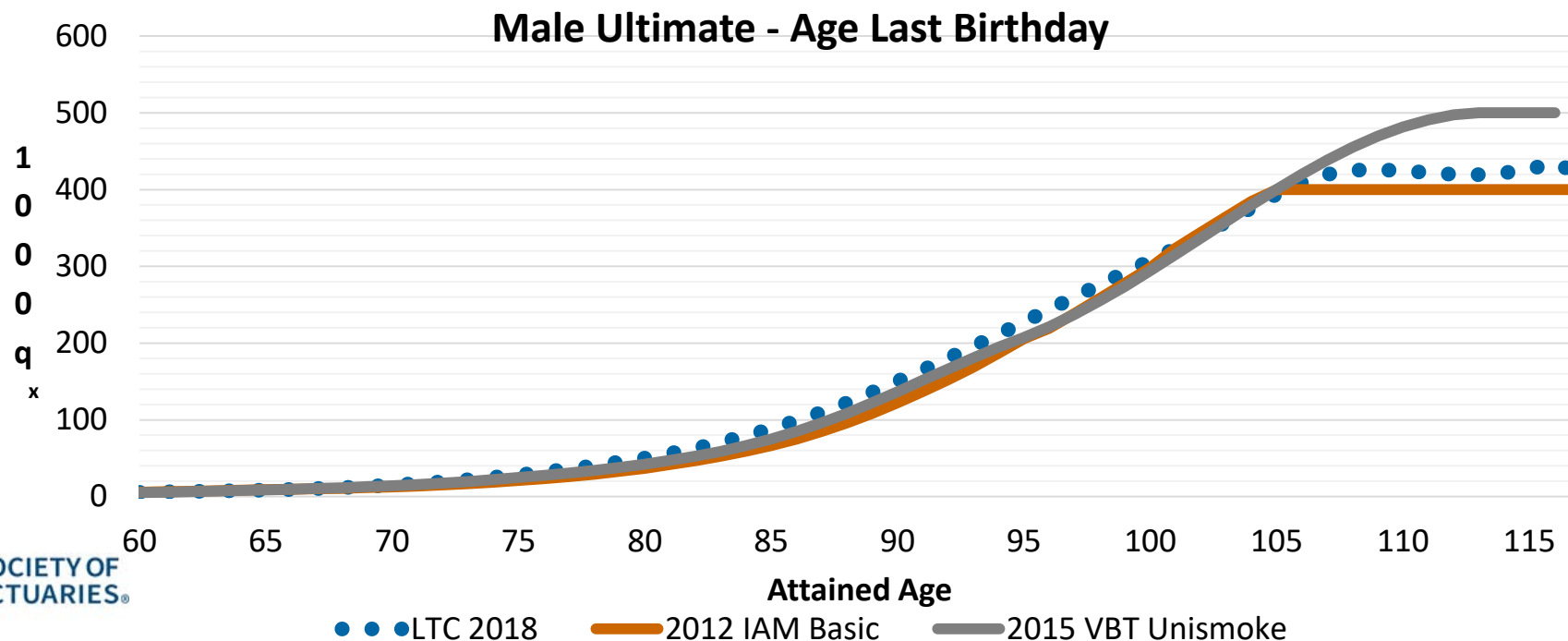
Factor	Mortality Individual & Group	Lapse Individual	Lapse Group
Issue Age	✓	✓	✓
Policy Duration	✓	✓	✓
Gender	✓		
Marital Status	✓	✓	
Risk Class	✓	✓	

- Preliminary proposed basic tables and factor tables have been developed.



# Ultimate Mortality Rates

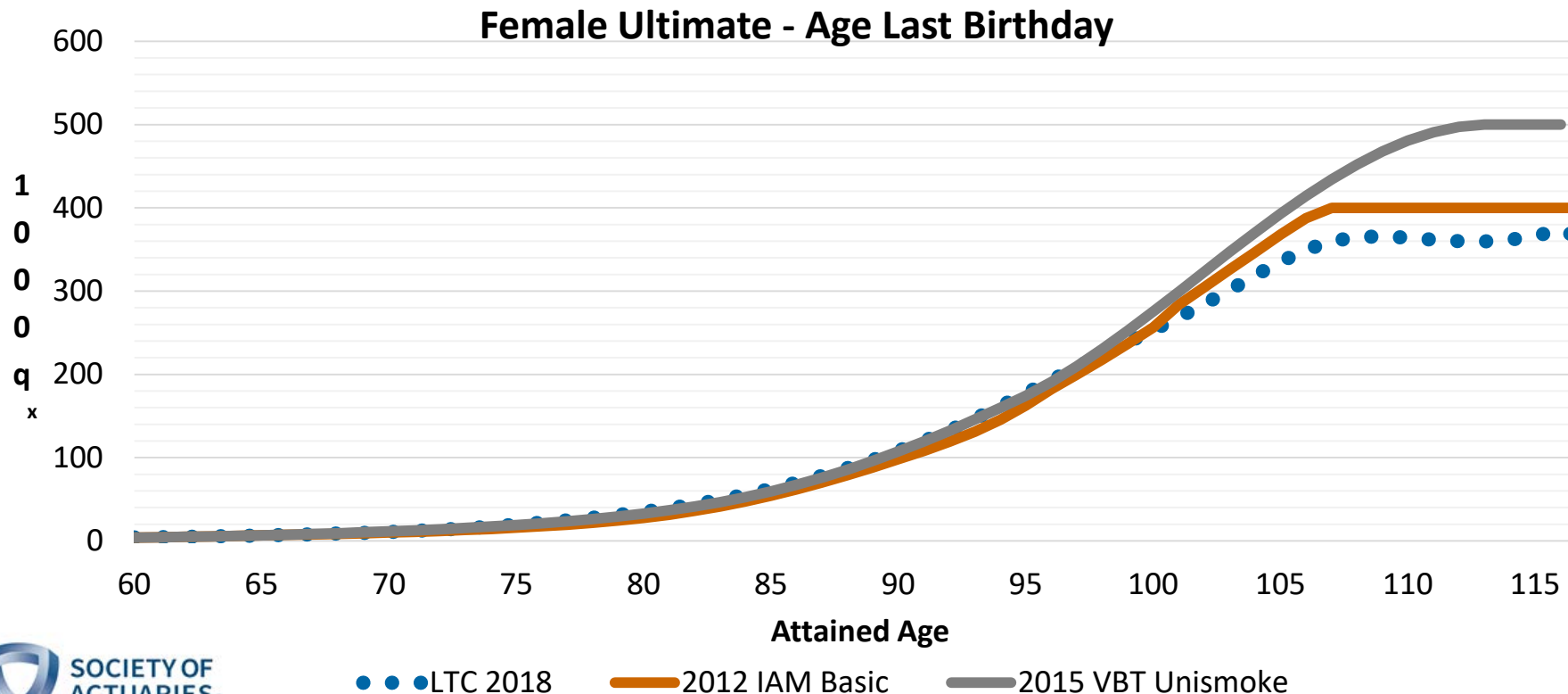
- Based on 48,000 deaths from companies with reasonable data (DEFN<sub>1</sub> 2 companies\*) for policy years 15 and beyond during the experience period 2008-2011.



- \* 10 companies' data were deemed to be reasonably reliable:
  - Identified deaths from lapses, and
  - Less than 25% unknown terminations.

# Ultimate Mortality Rates

- Use 2012 IAM<sub>2</sub> as a guide when data is sparse.



Approximately  
1,200 male and  
2,800 female  
deaths at attained  
age 95 and over.

# Data for Lapse Table

- Based on 2008-2011 experience years and DEFN 2 companies:

	Exposure Years	Number of Lapses
<b>Individual</b>	9.4 million	197,000
<b>Group</b>	4.9 million	302,000

- Minimum 240 lapses in any rate-cell (minimum 50% partial credibility).



# Select Factors for Lapse

- Key lapse factors were identified using a logistic regression method.
- To be consistent with the factors selected for Mortality Table, Work Group selected the following factors for lapse:

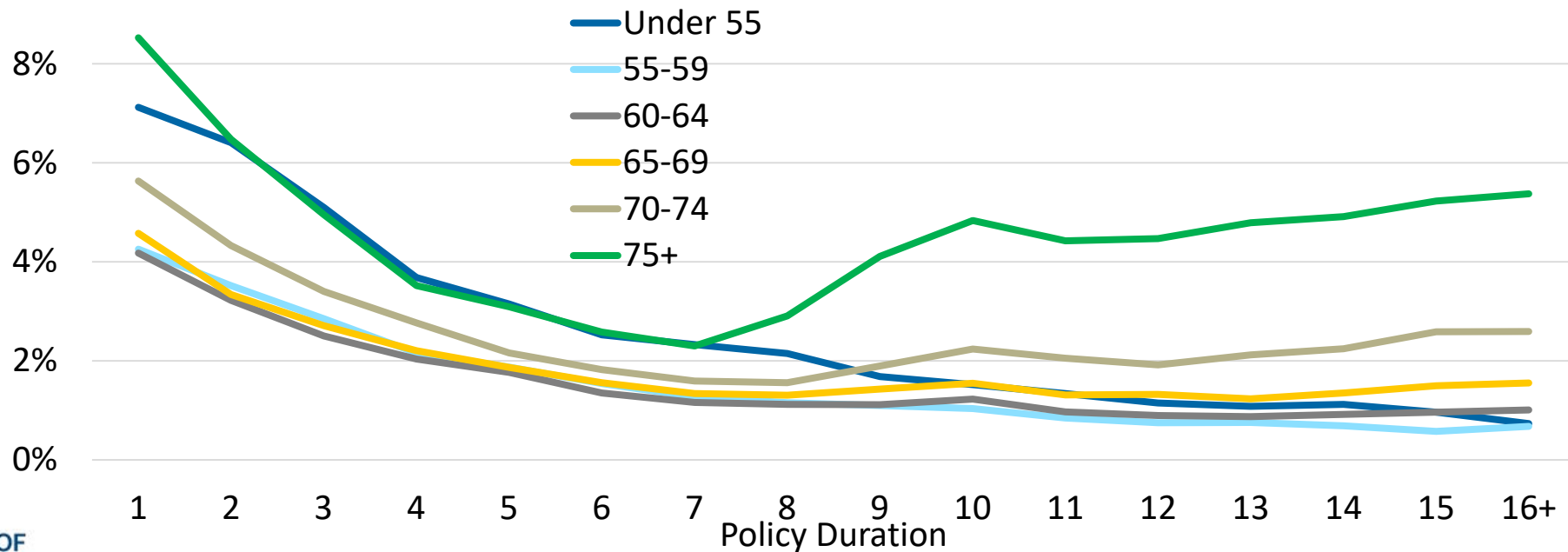
Factors for Lapse in Order of Significance	
Policy Year	✓
Premium Paying Status	
Issue Age	✓
Underwriting Class	✓
Periodic Premium Level	
Marital Status	✓
Premium Mode	
Rate Increase Indicator	



# Raw Lapse Rates – Individual

- Raw rates were capped by prior year's rates to remove increasing patterns.

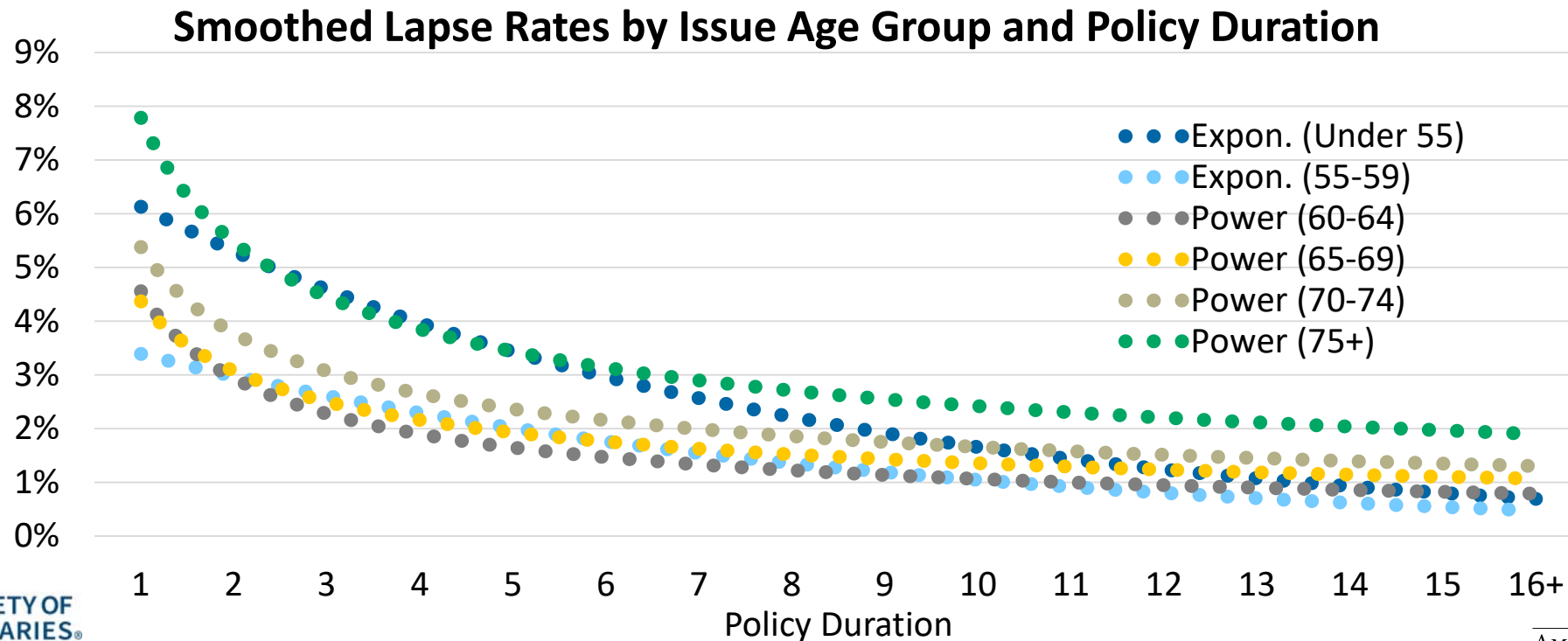
Raw Lapse Rates by Issue Age Group and Policy Duration





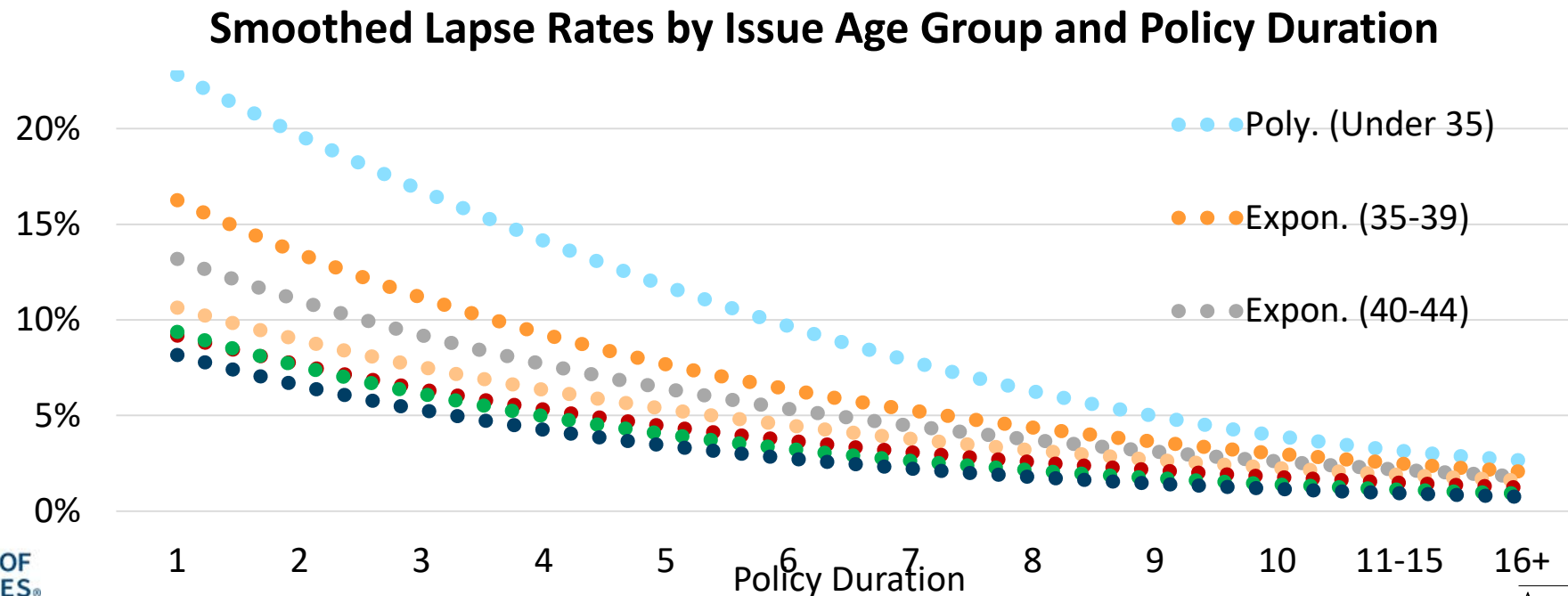
# Smoothed Lapse Rates – Individual

- Capped raw rates for each issue age group were fitted by either an exponential (Expon.) or a power trend line.



# Smoothed Lapse Rates – Group

- Raw rates for each issue age group were fitted by either a 2<sup>nd</sup> degree polynomial (Poly.) or an exponential (Expon.) trend line.



# Next Steps

- Develop active lives tables
- Review reasonableness of total terminations
- Recommend margins
- Update NAIC LTC Actuarial Working Group for additional feedbacks
- Produce report (ECD<sub>4</sub> end of 2019)



# Questions?



# Endnotes

## □ Abbreviations:

- 1 DEFN: Definition 2
- 2 IAM: Individual Annuity Mortality
- 3 VBT: Valuation Basic Table
- 4 ECD: Estimated Completion Date



# Additional Information

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