



Causes of Death: A Case for Term Life Insurance

December 13, 2018

NOT IF, BUT HOW

Munich RE 



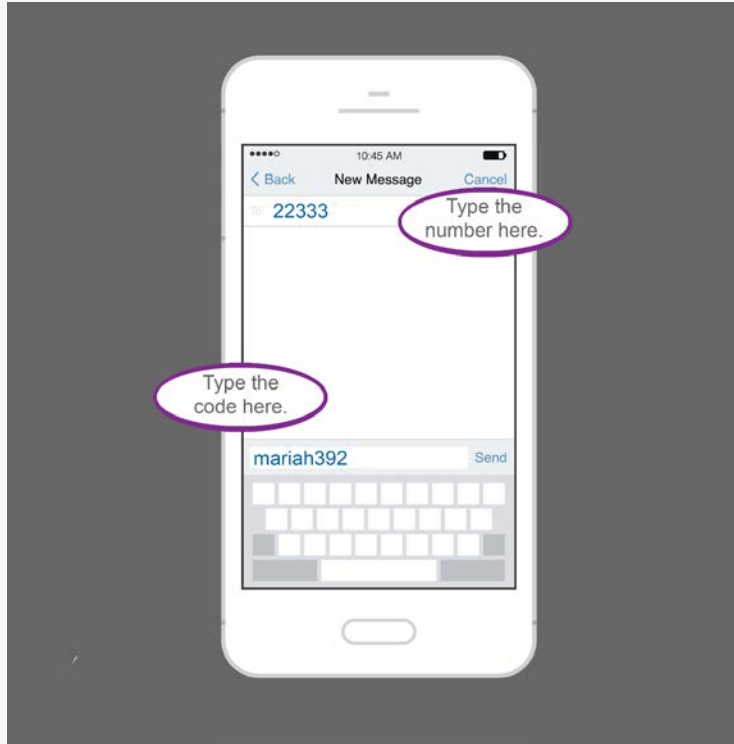
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Biometric Research
North America (Life)



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1. Term Products Overview
2. Experience Observations from ILEC 0913 Data
3. Causes of Death Analysis

Text **mariah392** to 22333 once to join...



- Uses your smartphone
- Send the text “mariah392” to 22333
- You can use the same string for the entire session
- We’re going to practice

What is your favorite color?

A
Red

B
Blue

C
Teal

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Total Results

What department are you currently in?



Pricing

Valuation

Experience
Studies

Risk
Management

Non-Actuarial
(Claims,
Underwriting,
Data
Science,...)

Other

How many years of experience do you have?

< 1
year

1 to 3
years

3 to 5
years

5 to 10
years

10+
years

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Total Results

Term Products Overview

NOT IF, BUT HOW

What is a Term Product?

Life insurance issued for a specific number of years (the term period)
with no or little cash value

Level term

- Provides coverage at a fixed premium rate
- Common term periods are 10 and 20 years
- Typically least expensive way of purchasing death benefit

Post-level term

- Fixed premiums jump to ART
- Further coverage is provided if payments are met
- Typically **very expensive** coverage with premiums renewable annually



Shock lapse!

A Brief History of Term Products

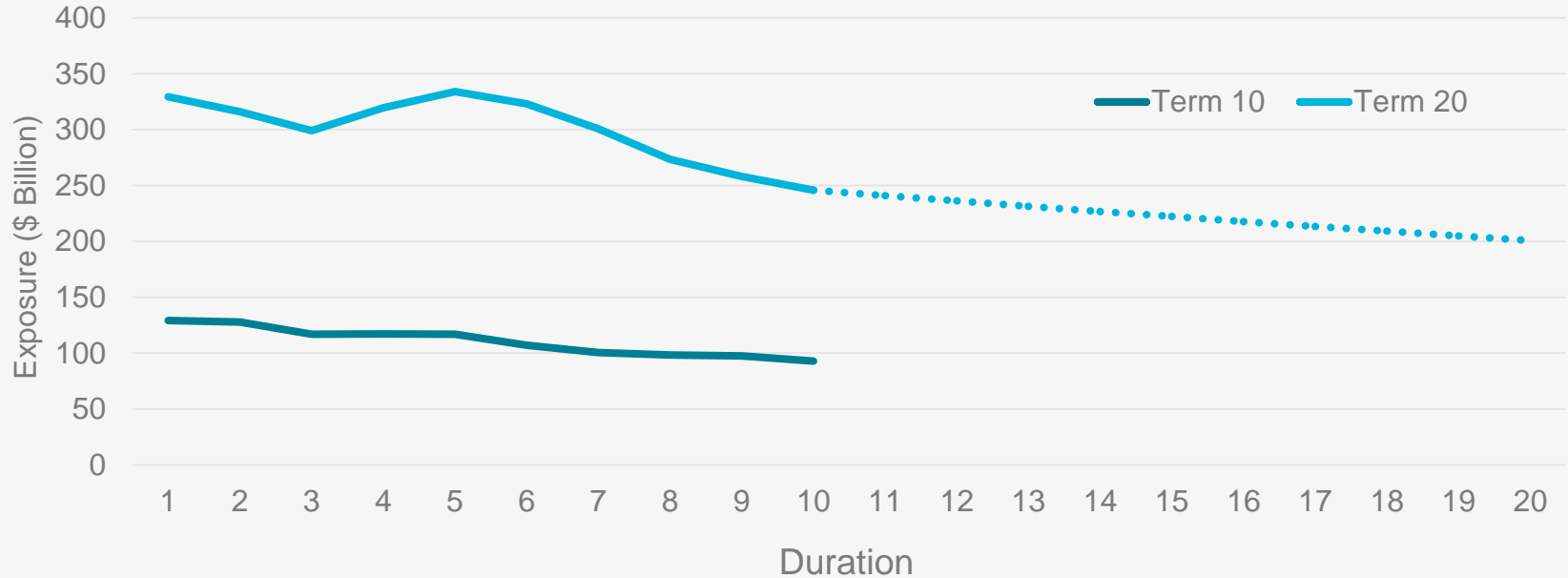


Market Share	
By Annualized Premium	21%
By Face Amount	73%
By Policy Count	41%

LIMRA. U.S. Retail Individual Life Insurance Sales Technical Supplement. Third Quarter 2018.

Term Exposure Over Time

Level Period Exposure (\$B) by Duration for Calendar Year 2013



Experience Observations from ILEC 0913 Data

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Does your company track mortality experience by product (e.g., Term, UL, ...)?

Yes

No

I don't
know

Start the presentation to see live content. Still no live content? Install the app or get help at PollEv.com/app

Total Results

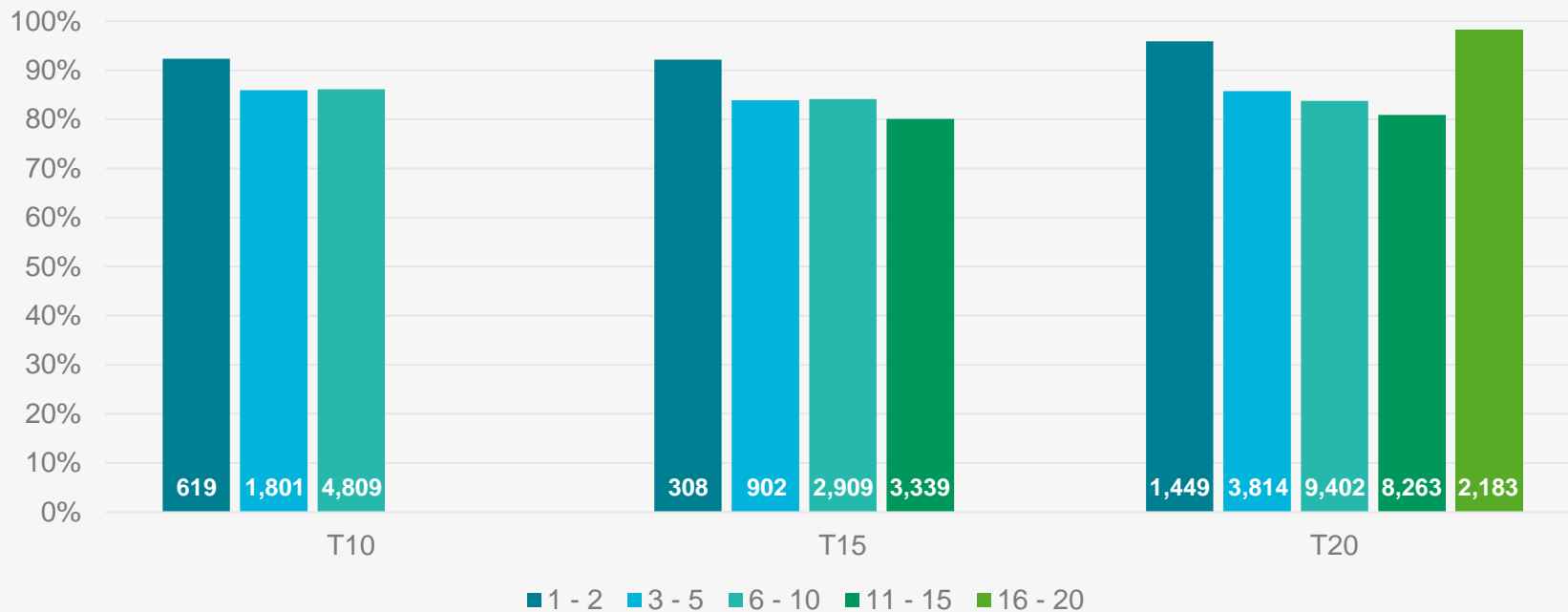
- Data source: ILEC 0913
- Expected basis: VBT15
- No mortality improvement
- Filters:
 - Non-Smoker
 - \$100,000 - \$2,499,999 face amount
 - Issue ages 30-59
 - Issue year 1990+
 - T10, T15, and T20 only

- 1 Is there variation in mortality between term products?
- 2 Do the number of preferred classes impact mortality?
- 3 Is there any indication of preferred wear-off in the level term?
- 4 Are there differences in mortality after the level term?

Q1 Is there variation in mortality between term products?

A1 There is no significant variation by duration and term product.

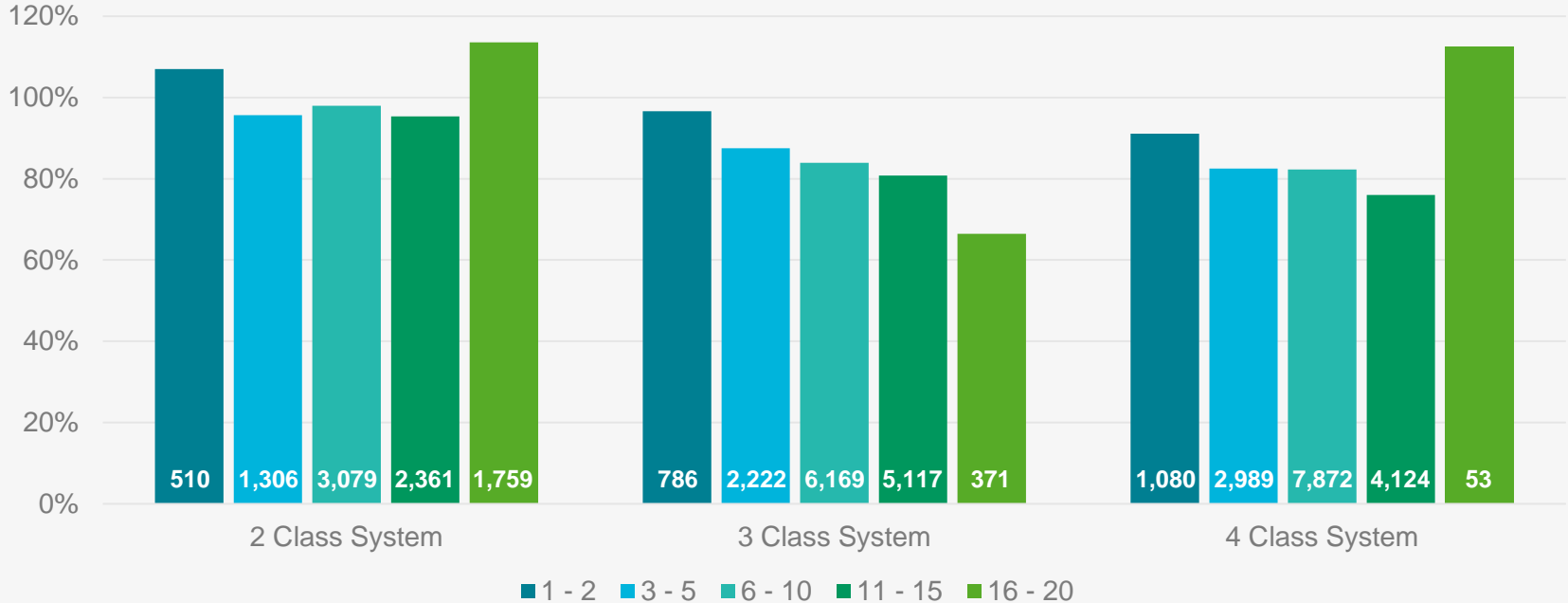
A/E (\$) by Term Product and Duration, Level Term Only



Q2 Do the number of preferred classes impact mortality?

A2 Experience improves as the number of preferred classes increases.

A/E (\$) by Preferred Class System and Duration, Level Term Only



Q3 Is there any indication of preferred wear-off in the LT?

A3.1 Slight drop in residual class, stable differences between classes.

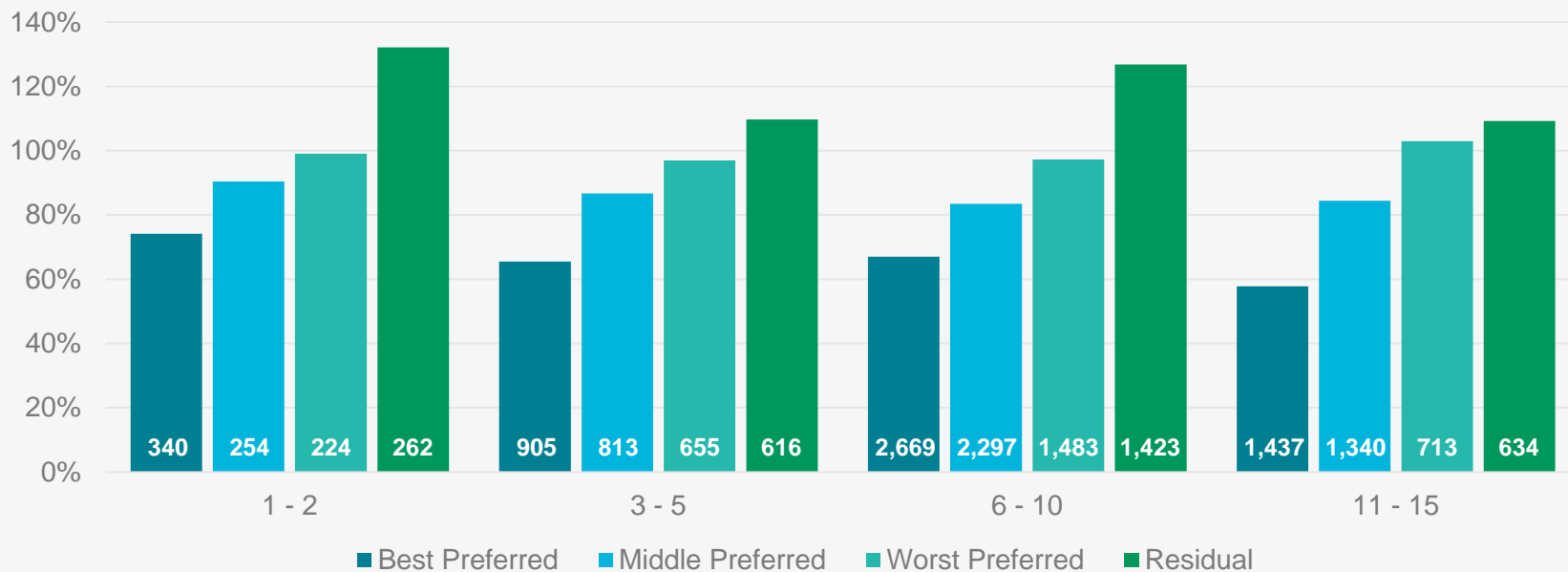
A/E (\$) by Preferred Class System and Duration, Level Term Only
3 Class System



Q3 Is there any indication of preferred wear-off in the LT?

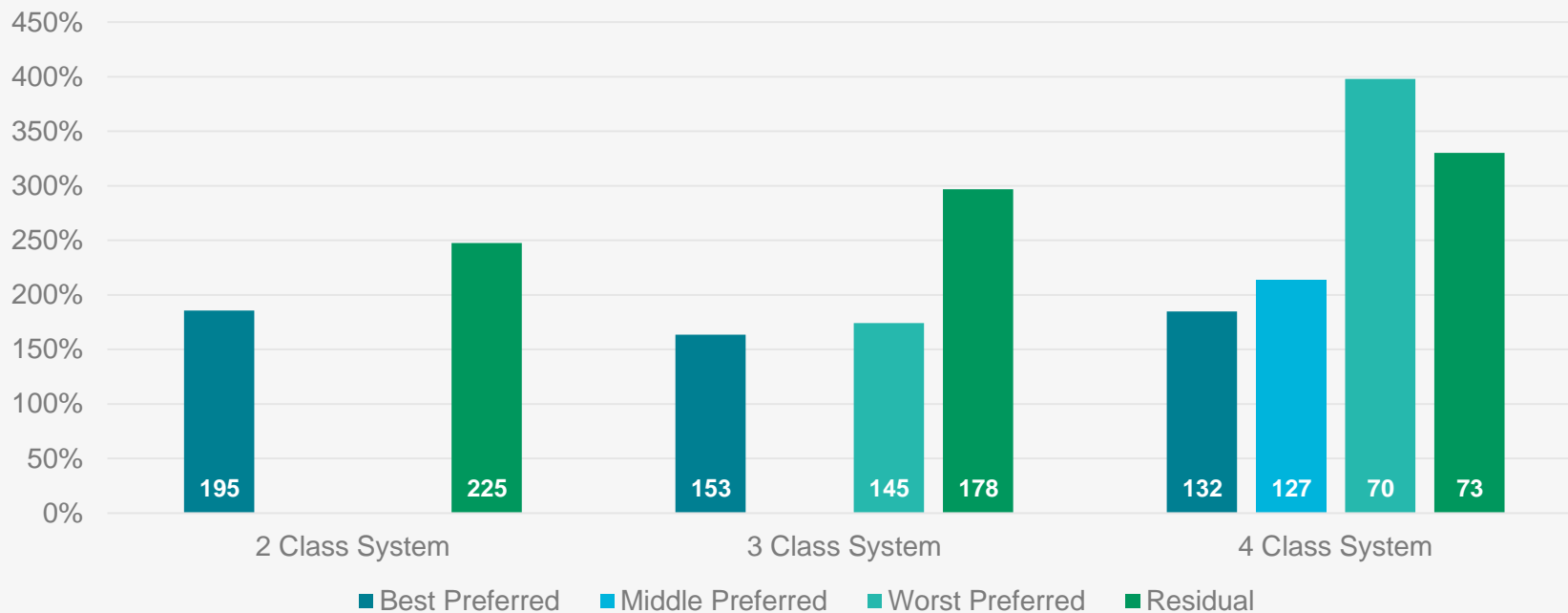
A3.2 Slight drop in residual class, stable differences between classes.

A/E (\$) by Preferred Class System and Duration, Level Term Only
4 Class System



Q4 Are there differences in mortality after the level term?
A4 T10 PLT mortality is higher for the residual class.

A/E (\$) by Preferred Class System and Class, T10, Post Level Term Only



- 1** There is no significant variation by duration and term product.

- 2** Mortality experience improves as the number of preferred classes in a class structure increases.

- 3** Stability in differences of mortality is shown across classes in durations 1 - 10. The residual class sees a slight drop in A/Es after duration 2. Further data is required to evaluate later durations.

- 4** T10 PLT mortality is highest in the residual class compared to the preferred classes.

Thoughts and Observations

Post Level Term Mortality and T20 Products



Are policyholders behaving rationally in renewing their products?

What behavior can insurers influence with preferred class design or premium rates?



Are different medical conditions driving PLT behavior and results?



Causes of Death Analysis

NOT IF, BUT HOW

What do you think is the most prevalent cause of death in the post-level term period?



Cancer

Cardio

Non-Medical
(e.g.,
accidents)

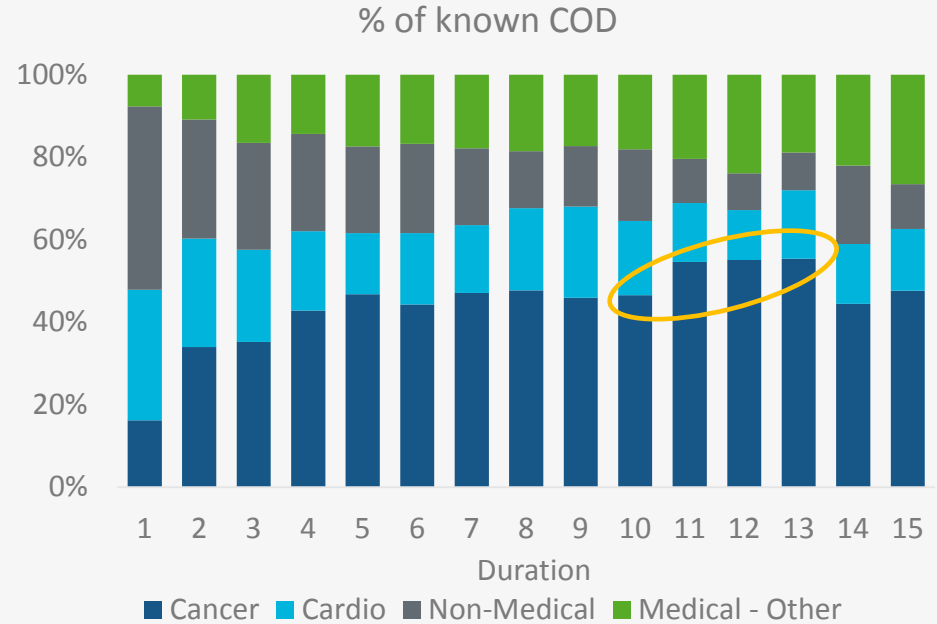
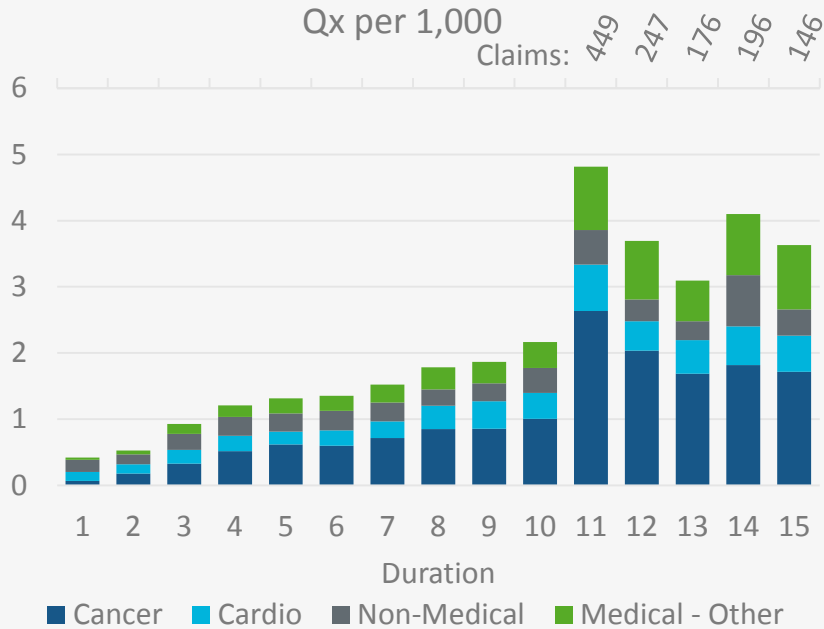
Other Medical
(e.g.,
infections)

None of the
above

- Data Sources: Munich Re Experience Study
 - US: CY 2006-2017Q2
- Filters:
 - Standard, Automatic, Fully Underwritten
 - Face Amount \geq \$100k
 - Issue Ages 30-59
 - Term 10 and 20

U.S. Term 10 Cause of Death

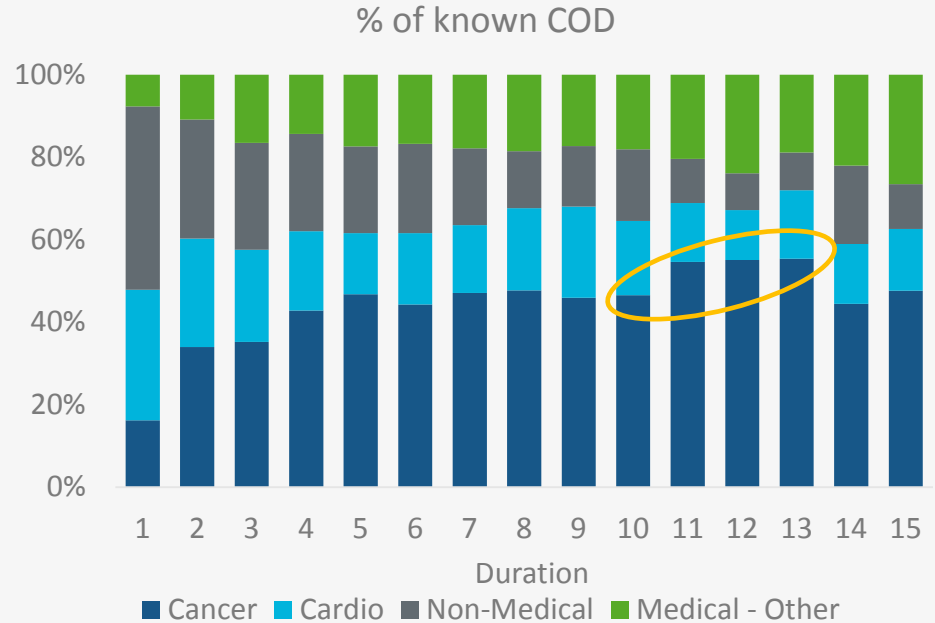
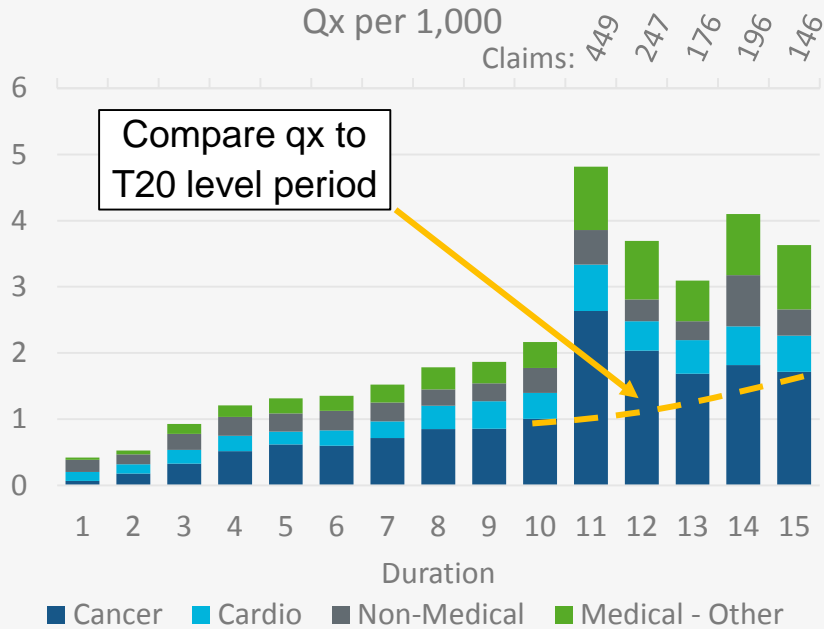
By Count



Cancer is higher in durations 11-13

U.S. Term 10 Cause of Death

By Count

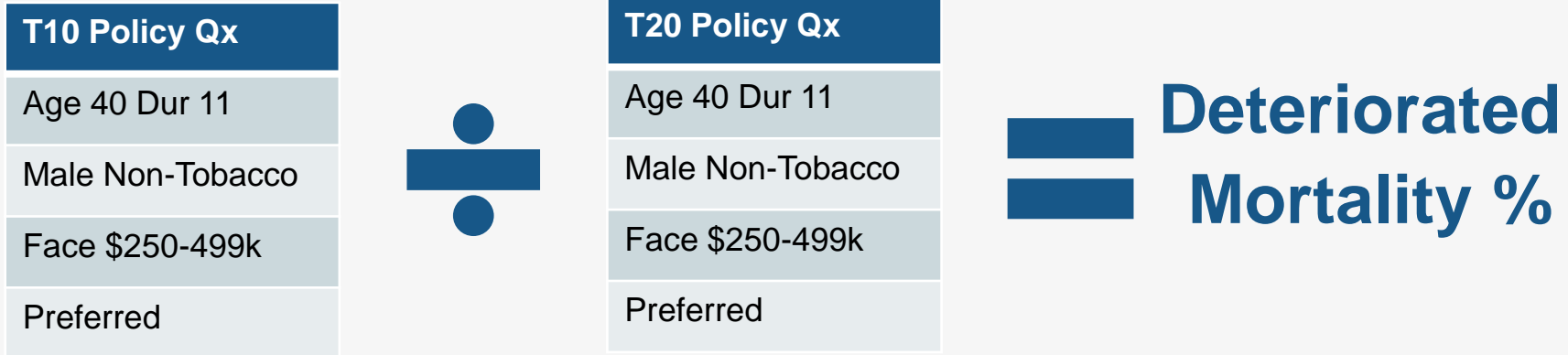


Cancer is higher in durations 11-13

Business Mix

Age, Duration, Gender, Tobacco, Face Band, Preferred Class

T10 post-level period business mix is different than T20 level period

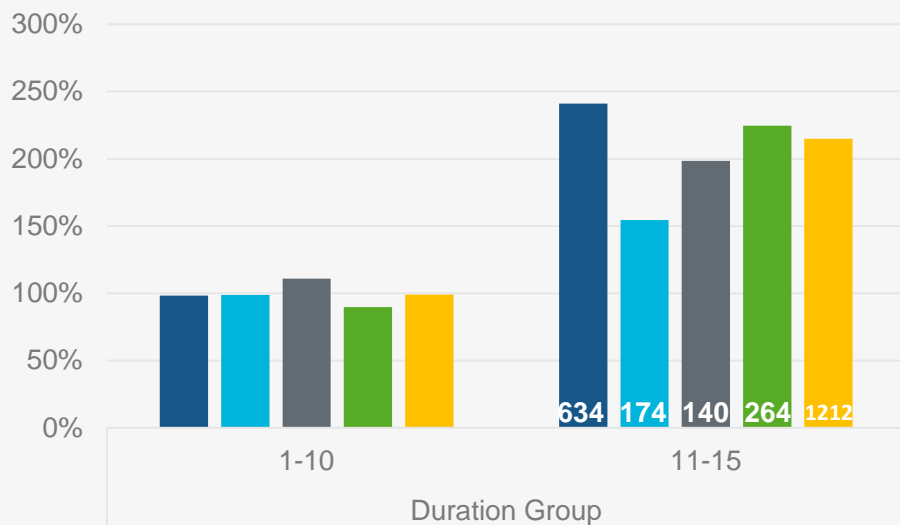


To adjust for business mix we only compare policies with the same characteristics

U.S. Term 10 Deterioration by Cause of Death

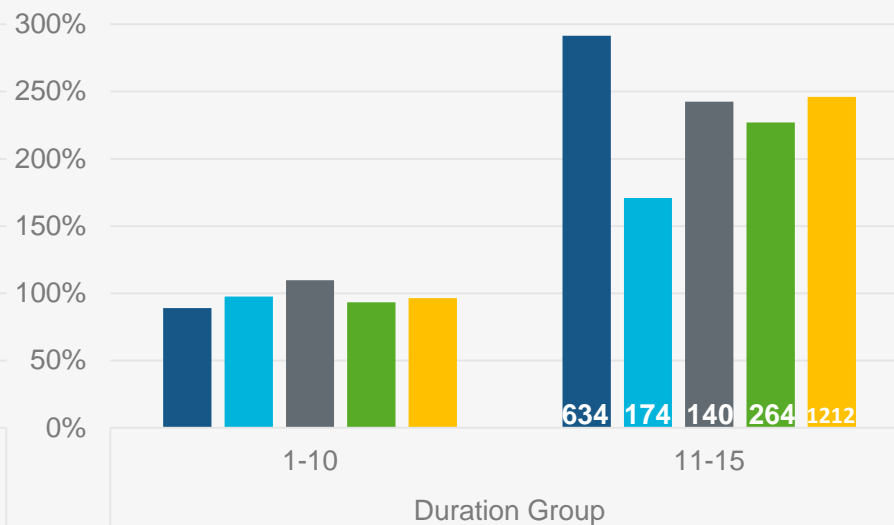
By Count and Amount

Ratio of [T10 Qx] / [T20 Qx] by Count



■ Cancer ■ Cardio ■ Non-Medical ■ Medical - Other ■ Total

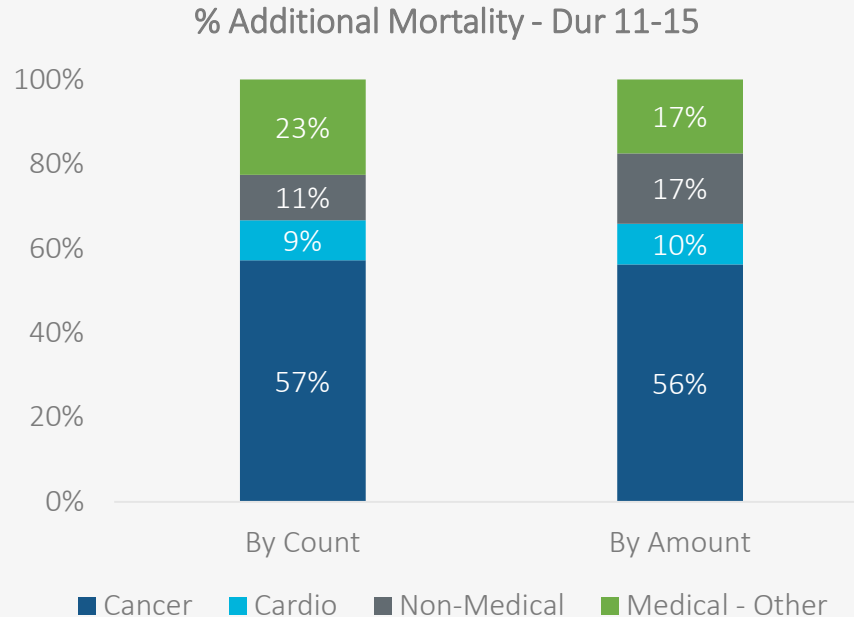
Ratio of [T10 Qx] / [T20 Qx] by Amount



■ Cancer ■ Cardio ■ Non-Medical ■ Medical - Other ■ Total

Higher deterioration by amount vs. count except Medical - Other

U.S. Term 10 Deterioration by Cause of Death

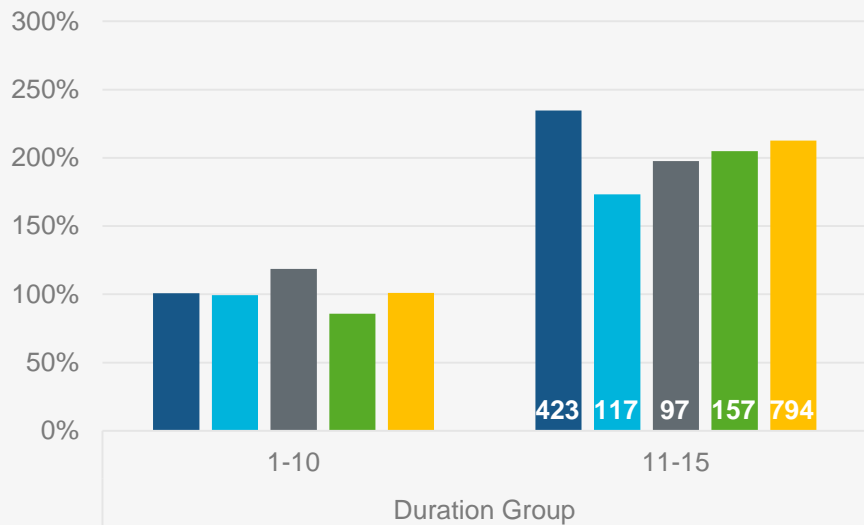


More than 50% of additional mortality in the post-level term is Cancer

U.S. Term 10 Risk Class

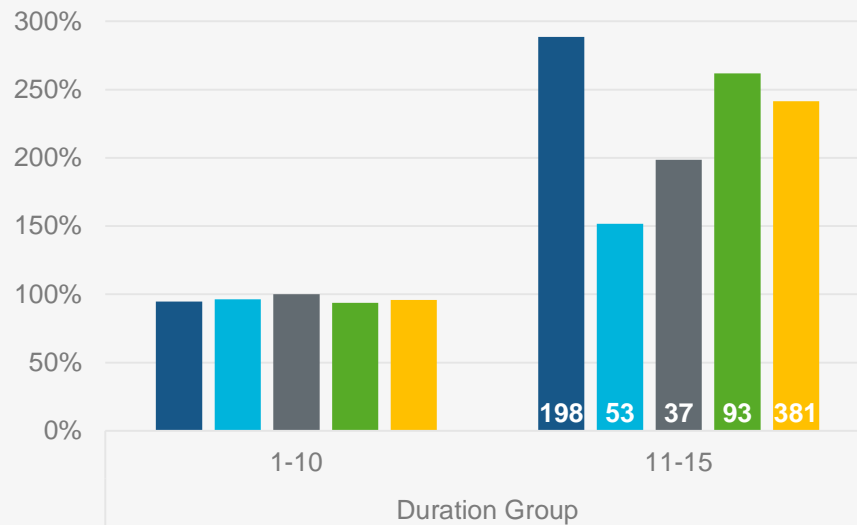
By Count

Ratio of [T10 Qx] / [T20 Qx] **Preferred**



■ Cancer ■ Cardio ■ Non-Medical ■ Medical - Other ■ Total

Ratio of [T10 Qx] / [T20 Qx] **Standard**



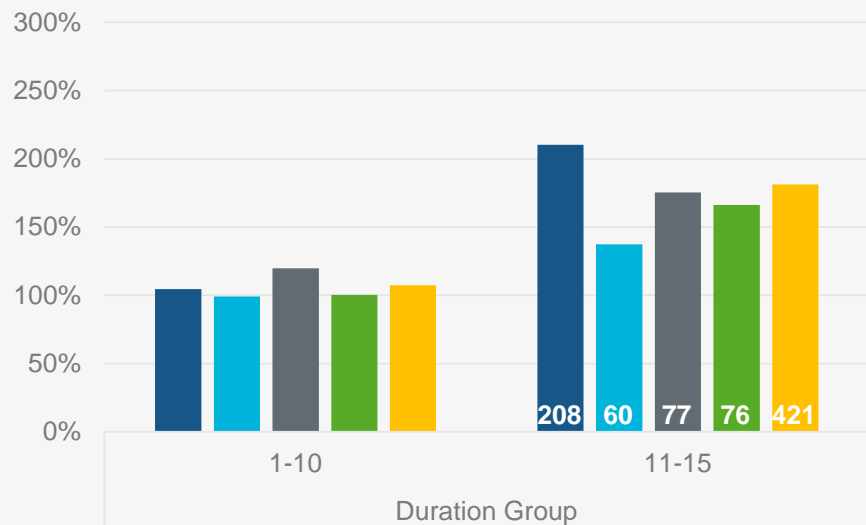
■ Cancer ■ Cardio ■ Non-Medical ■ Medical - Other ■ Total

Higher deterioration for the Standard classes

U.S. Term 10 Issue Age

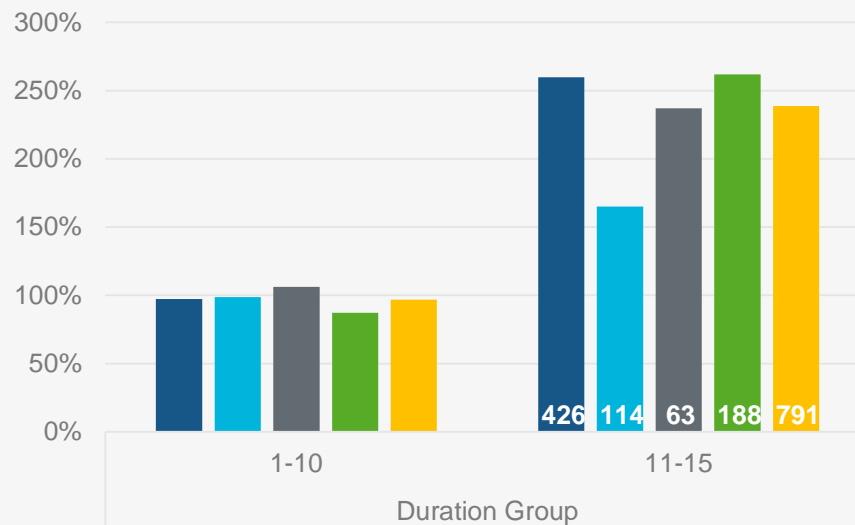
By Count

Ratio of [T10 Qx] / [T20 Qx] IA 30-44



■ Cancer ■ Cardio ■ Non-Medical ■ Medical - Other ■ Total

Ratio of [T10 Qx] / [T20 Qx] IA 45-59

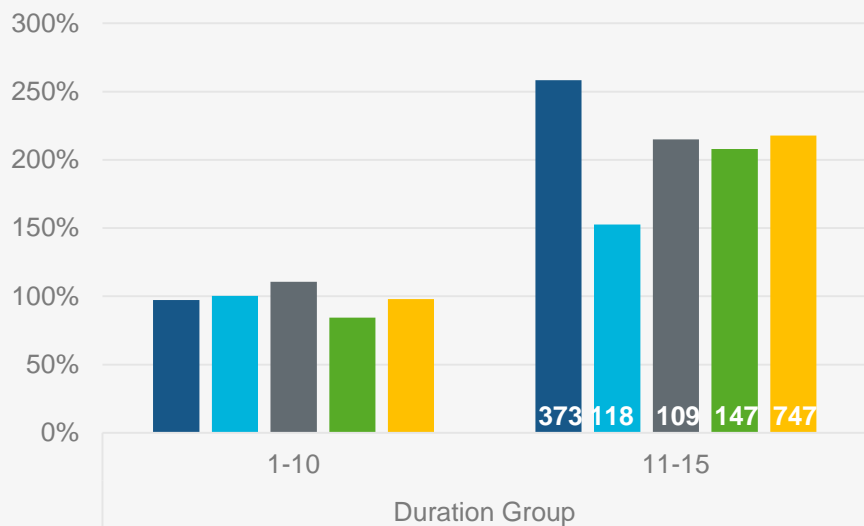


■ Cancer ■ Cardio ■ Non-Medical ■ Medical - Other ■ Total

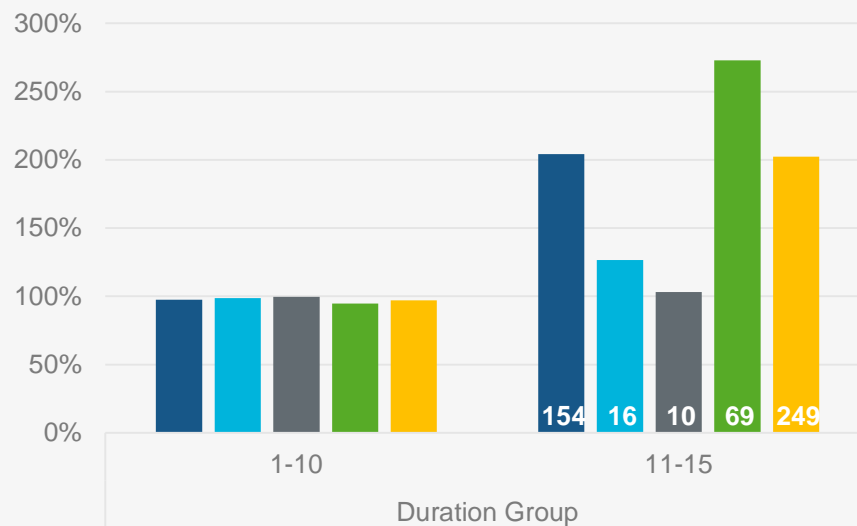
Higher deterioration for older issue ages

U.S. Term 10 Non-tobacco Gender By Count

Ratio of [T10 Qx] / [T20 Qx] **Male NT**



Ratio of [T10 Qx] / [T20 Qx] **Female NT**



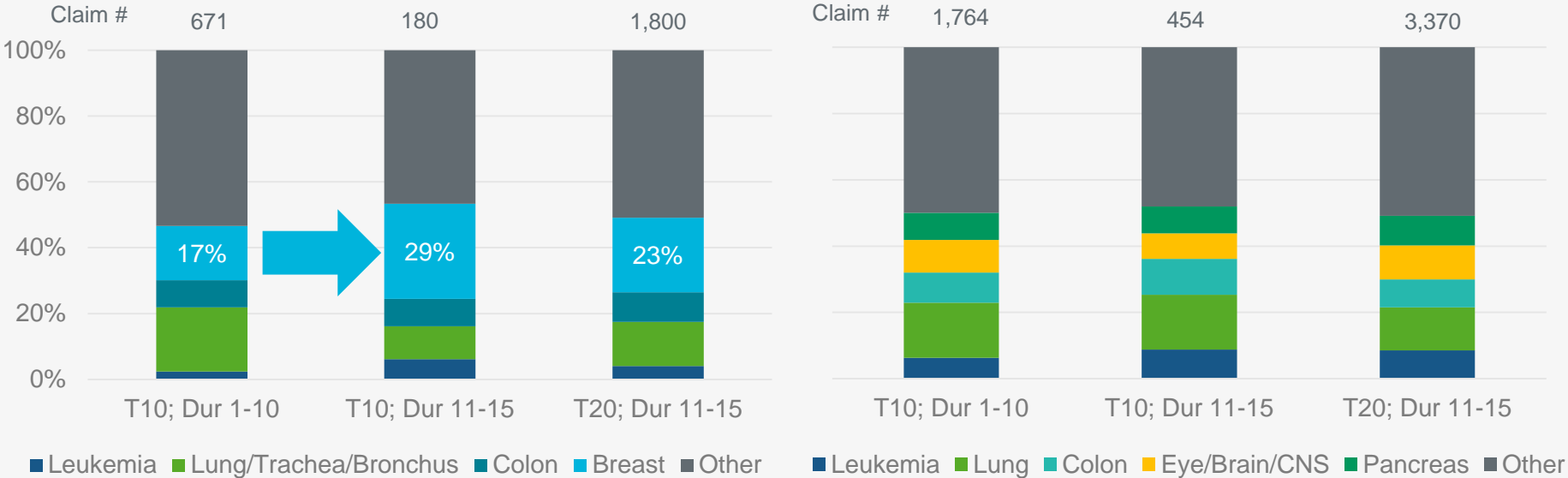
Higher deterioration for males

U.S. Cancer Distribution at Death

By Count, IA 30-59

Female

Male



Early signs of higher Breast Cancer % in the post level period

1 Cancer is more than half of the T10 post level term additional mortality

2 There is more deterioration for older, male and standard class persisters

3 Early signs that breast contributes more than other cancers to deterioration

4 Cancer drives post-level term additional mortality in the U.S.

01 Innovative post level period concepts



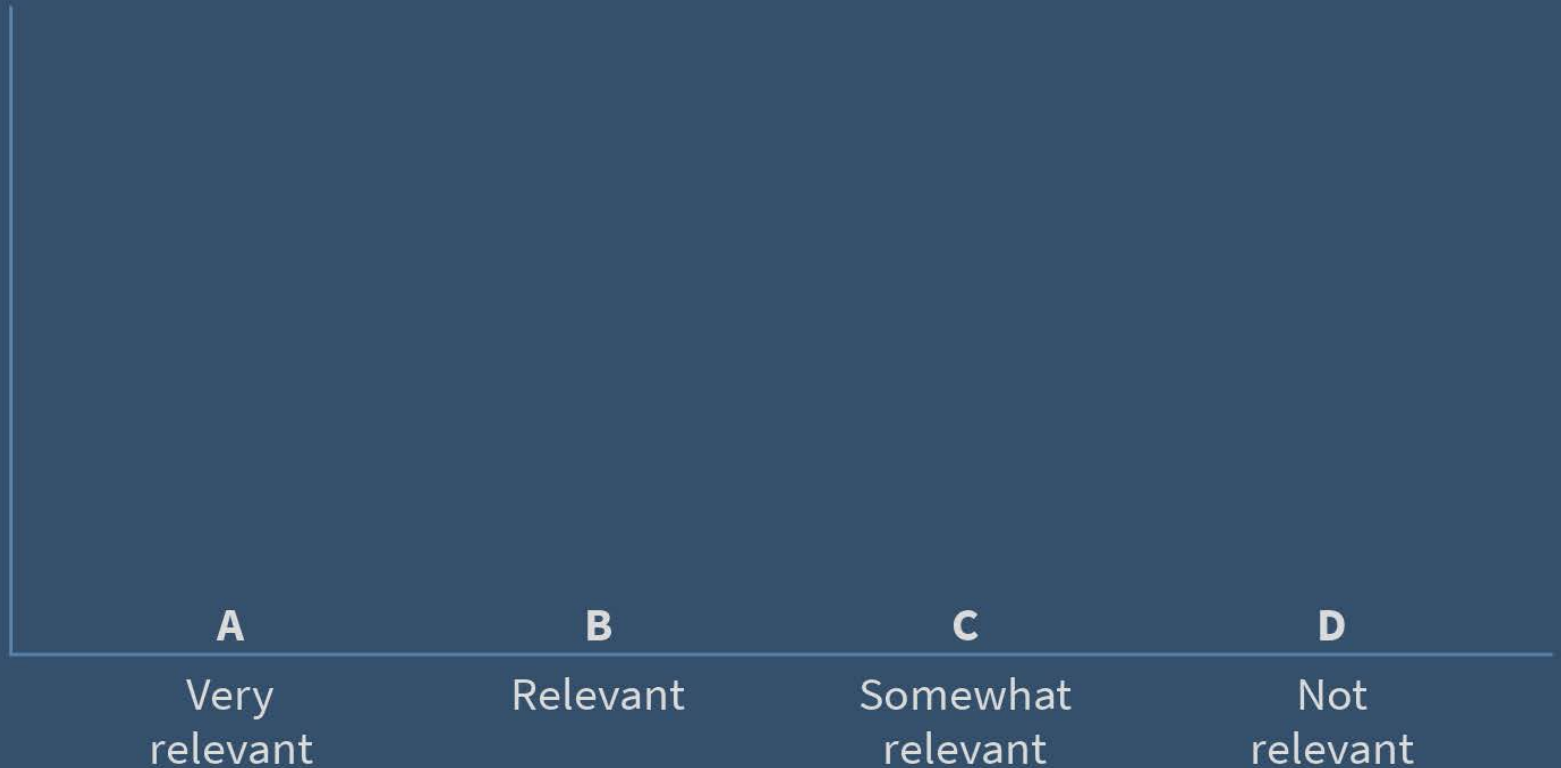
- New data sources and predictive models could enable PLT triage and instant renewal at much more competitive rates
 - i.e. Cancer UW @ renewal
 - i.e. Use Rx database to check cancer drugs

02 Engaging the customer at issue or diagnosis



- Improve Cancer survival while also providing value:
 - Proactive health management/wellness integrated into insurance products
 - Holistic approach to treatment plans

How relevant would a cause of death analysis be for your current role/department?



Start the presentation to see live content. Still no live content? Install the app or get help at PollEv.com/app

Total Results

Special Thank-you



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Katie Anderson, FSA
Director
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Thank-you!

Questions?

NOT IF, BUT HOW