Triage in Accelerated Underwriting

The impact of triage on mortality and distribution

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Triage in Accelerated Underwriting

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Agenda:

1. *Accelerated Underwriting Landscape*
2. *Accelerated Underwriting Evolution*
3. *Impact of Accelerated Underwriting Triage on Mortality*
4. *Impact of Accelerated Underwriting Triage on Distribution*
5. *Summary*

Accelerated Underwriting Landscape

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Definition of Accelerated Underwriting

Any fully underwritten life insurance program that allows some applicants to forgo having a medical or paramedical exam and providing fluids, if they meet certain requirements and/or meet a certain pre-determined threshold

Big data in consumer financial markets

Consumer Financial Market

- FICO scores used for 50+ years
- Instant approval for home and auto loans

Property & Casualty Insurance

- Credit scores industry standard
- Telematics

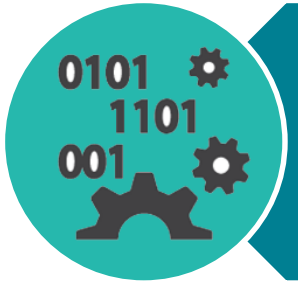
Life Insurance

- Successful programs <5 years old
- Slow to gain traction

Why was there a need for Accelerated Underwriting?

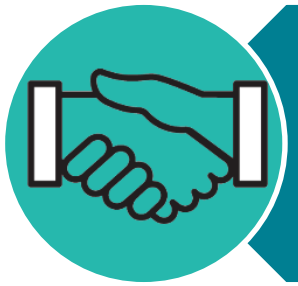
Customer experience

- Underserved middle market
- Faster, less intrusive
- Expectations from Millennials



Big data

- Public databases with personal, credit and financial information
- Computing power and predictive analytics



Insurer and producer

- Faster, cheaper, more sales
- Less administrative work

How are Full Underwriting and Accelerated Underwriting different?

Full Underwriting (FUW)

- Application
- Paramed and Fluids
- Human Underwriter
- Issued

Accelerated Underwriting (AUW)

- Application
- Databases, rules engines and predictive models
- Issued

How is the data chosen?

Effectiveness

- Highly correlated with the target variable
- Generates a best fit algorithm
- Worth the cost of obtaining

Regulatory

- Insurance Circular Letter No. 1 (2019)
- Will regulators continue to push back against AUW?

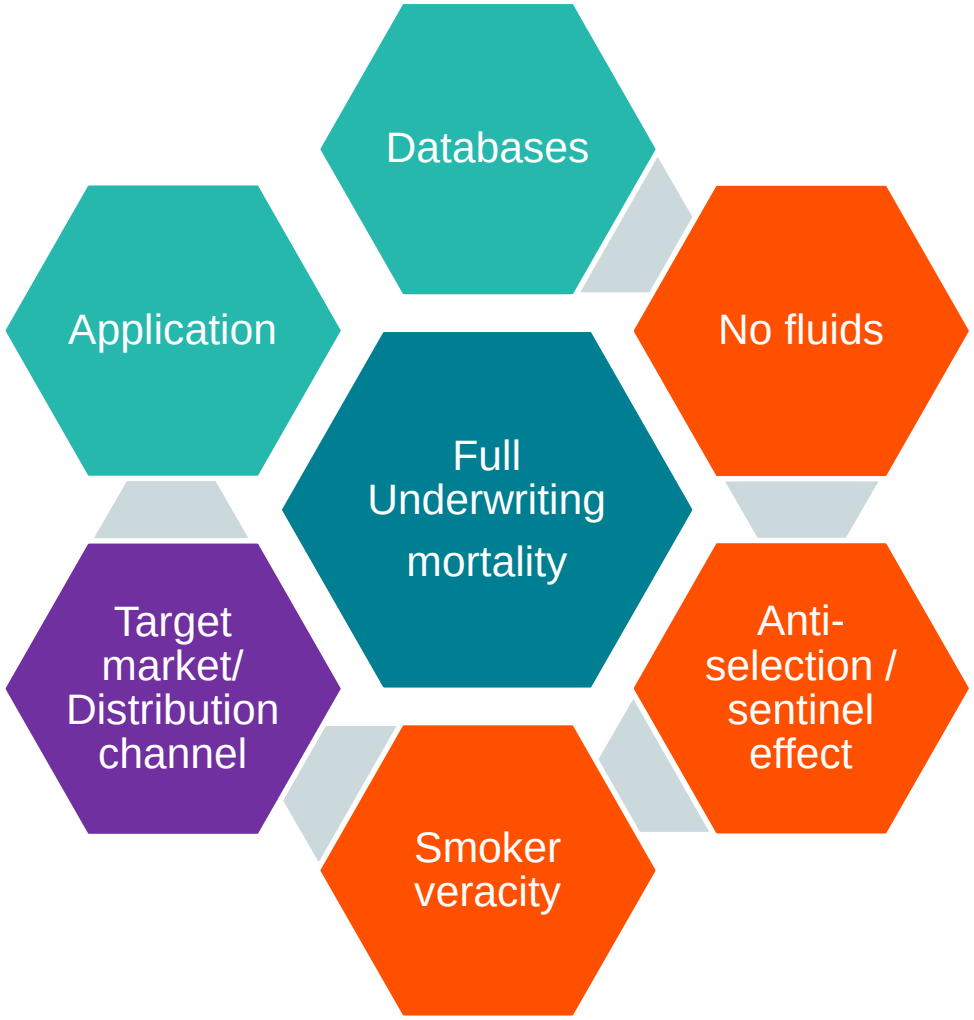
Fit into AUW

- Available within one to two days
- Ordered for all medically underwritten applicants
- What pieces of FUW can it replace?

Impact of no fluid testing, anti-selection and smoker veracity

	Full Underwriting	Accelerated Underwriting
Blood Profile	**Verified**	**Missing**
Blood Pressure	**Verified**	**Missing**
Tobacco	**Verified**	**Self-Reported**
Build	**Verified**	**Self-Reported**
Personal History	**Verified**	**Self-Reported with Limited Verification**
Drug & Alcohol Abuse	**Verified**	**Self-Reported**
MVR	**Verified**	**Verified**
Family History	**Self-Reported**	**Self-Reported**
Third Party Data	**Missing**	**Added**
Predictive Models	**Missing**	**Added**

Aspects of Databases and Predictive models



Accelerated Underwriting mortality

Accelerated Underwriting Evolution

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AUW Evolution

1.0

- Reduce requirements for lower face amount and age
- Apply conservative loads to expected mortality
- Unsuccessful due to self-reported data, anti-selection, and no preferred classes

2.0

- Introduce advanced databases, rules engines, predictive models, tele-interviews, and reflexive questions
- Open availability to higher face amounts and older ages
- Decrease pricing loads until equivalent to FUW
- Mortality loads will not be the same, so savings found elsewhere

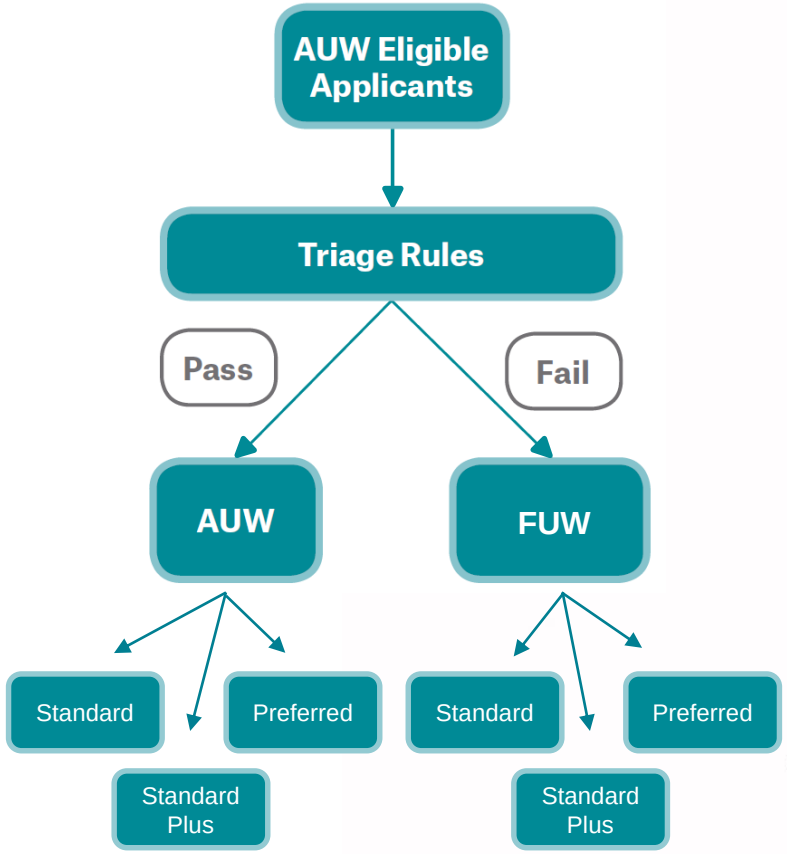
AUW Evolution

Industry-wide	2010	2014	Today
Programs	Mostly SI	Some accelerated	Varied
Underwriting tools	MIB, MVR, Rx	And early models, interviews, reflexives	And more models & electronic health records
Rules engines	Some	Half	Most
Pricing	Table 4-8	10-15% loads	Fully-underwritten
Face amounts	Up to $100K	$250K	$1M+

Triage in AUW

What is a Triage program?

- The introduction of decision nodes in the underwriting process
- Pass to AUW: Better risks and higher degree of confidence
- Fail to FUW: Worse risks and lower degree of confidence



Impact of Accelerated Underwriting Triage on Mortality

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AUW Triage on Mortality – Cause and Effects

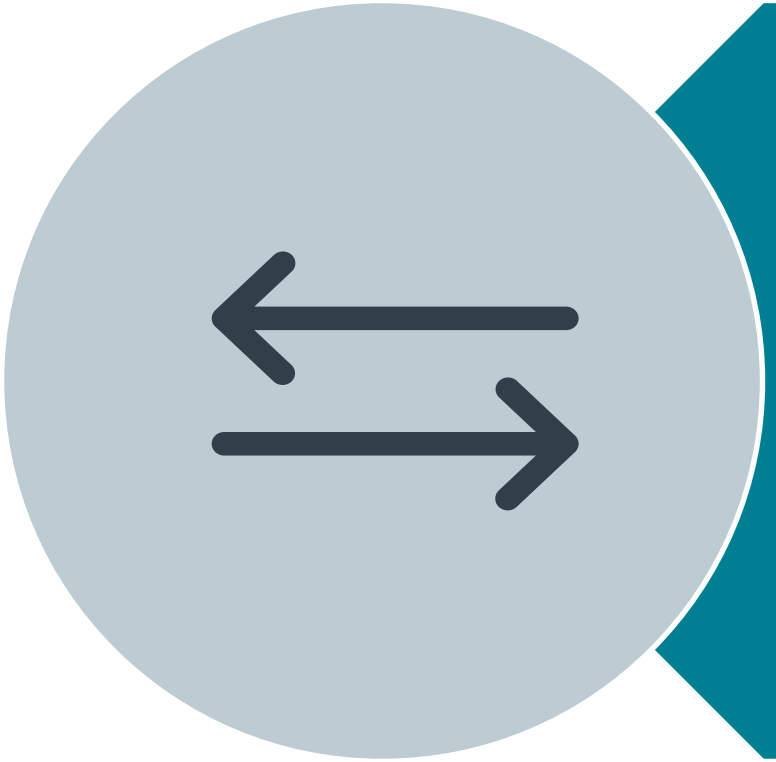
Cause

- Traditional AUW data bases – MIB, Rx, MVR
- Credit based scoring – ex. Lexis Nexis Risk Classifier, TransUnion True Risk Life
- Rx based scoring – Milliman IntelliScript, ExamOne ScriptCheck
- Predictive models and rules engines

Effect

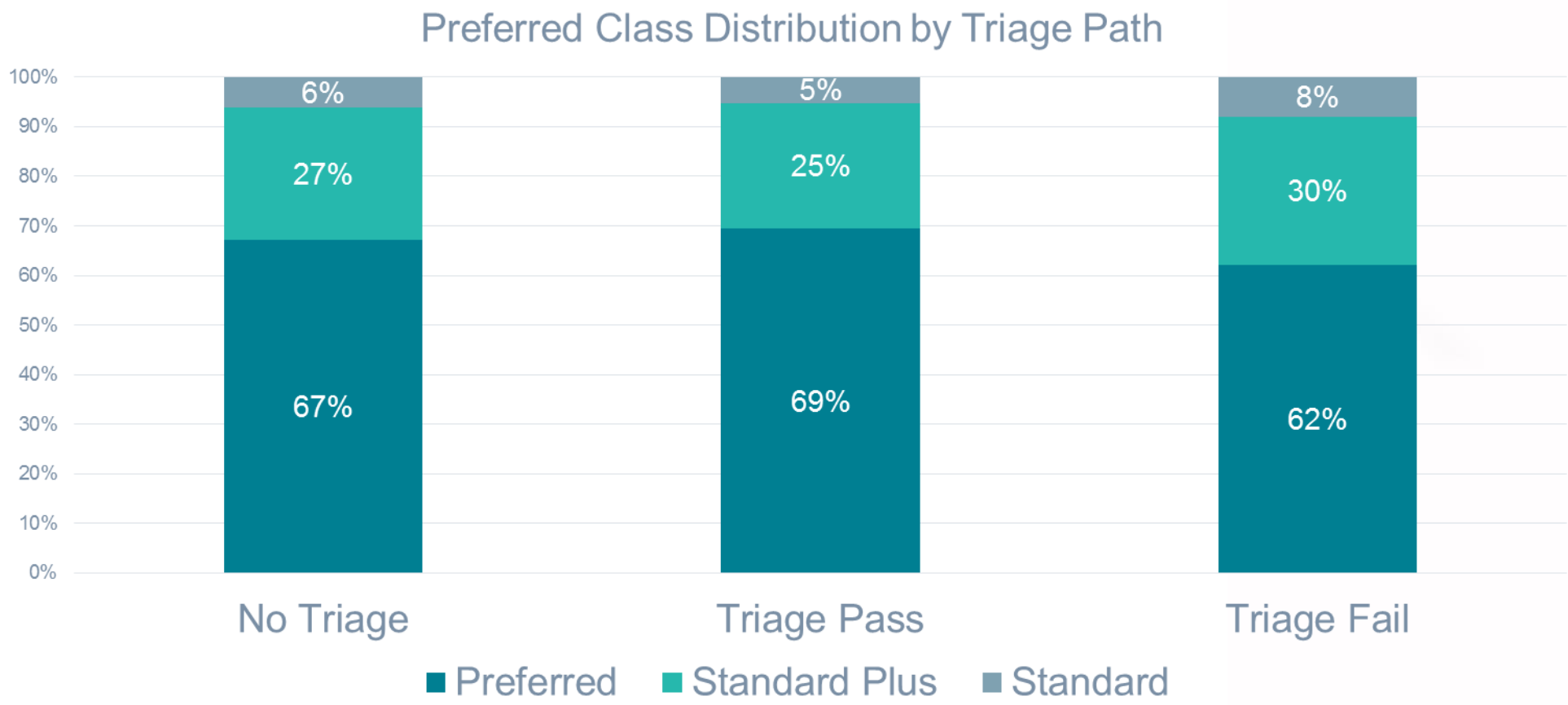
- Mortality segmentation
- Quasi-preferred class structure
- How correlated are the triage rules with a company's preferred underwriting rules?

AUW Triage on Mortality – Uncorrelated Scenario



Triage scoring is unrelated to preferred class underwriting

AUW Triage on Mortality – Uncorrelated Scenario



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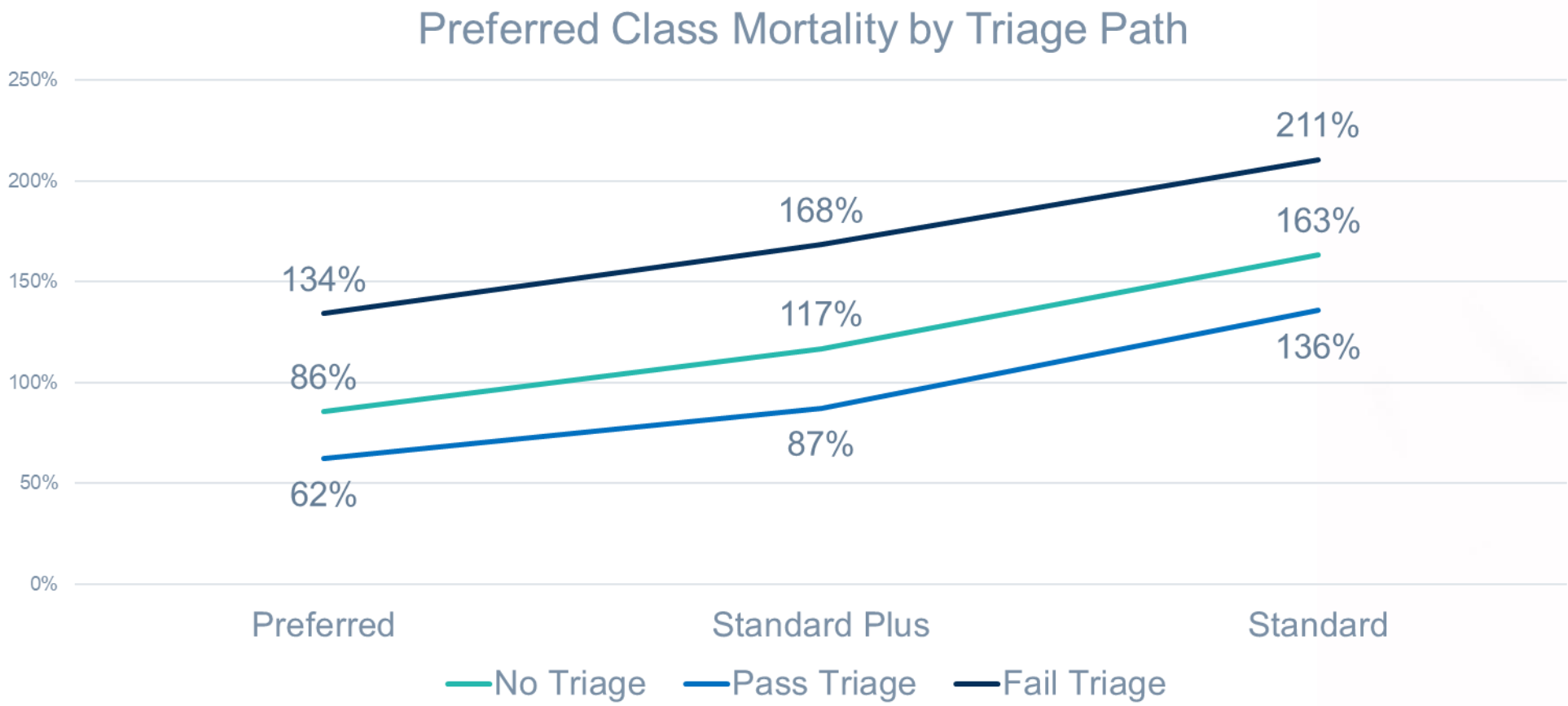
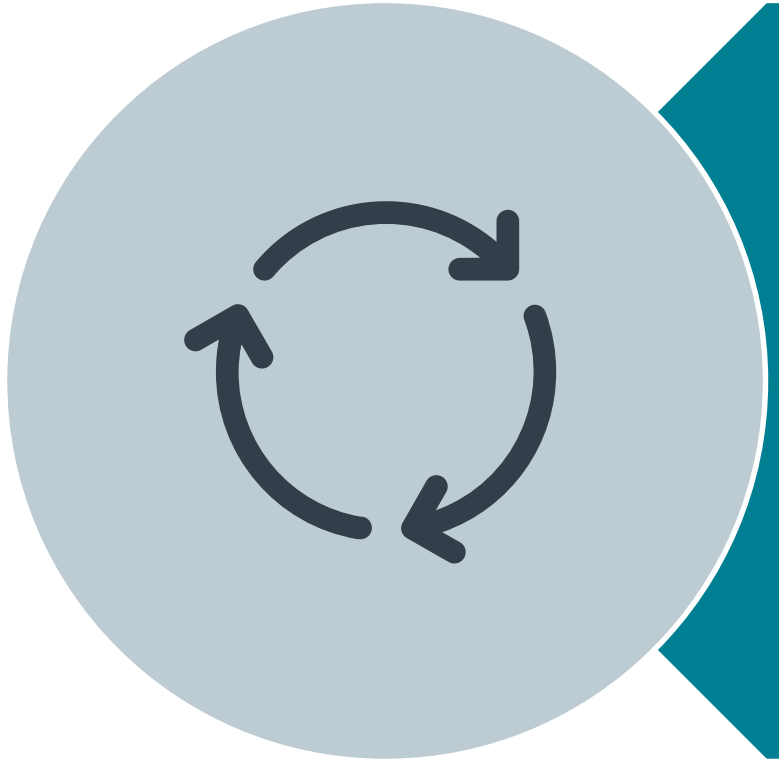
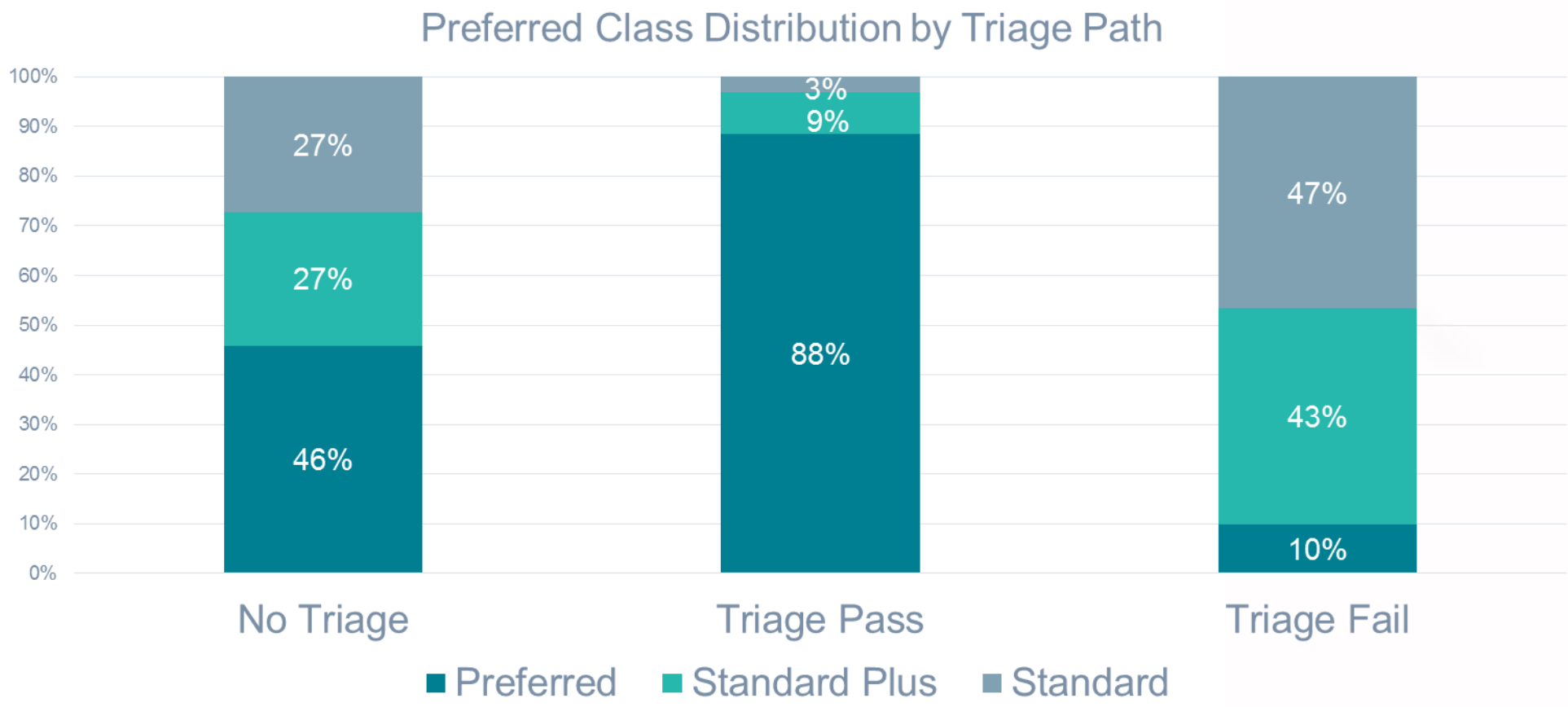


AUW Triage on Mortality – Correlated Scenario



Triage scoring is highly related to preferred class underwriting

AUW Triage on Mortality – Correlated Scenario



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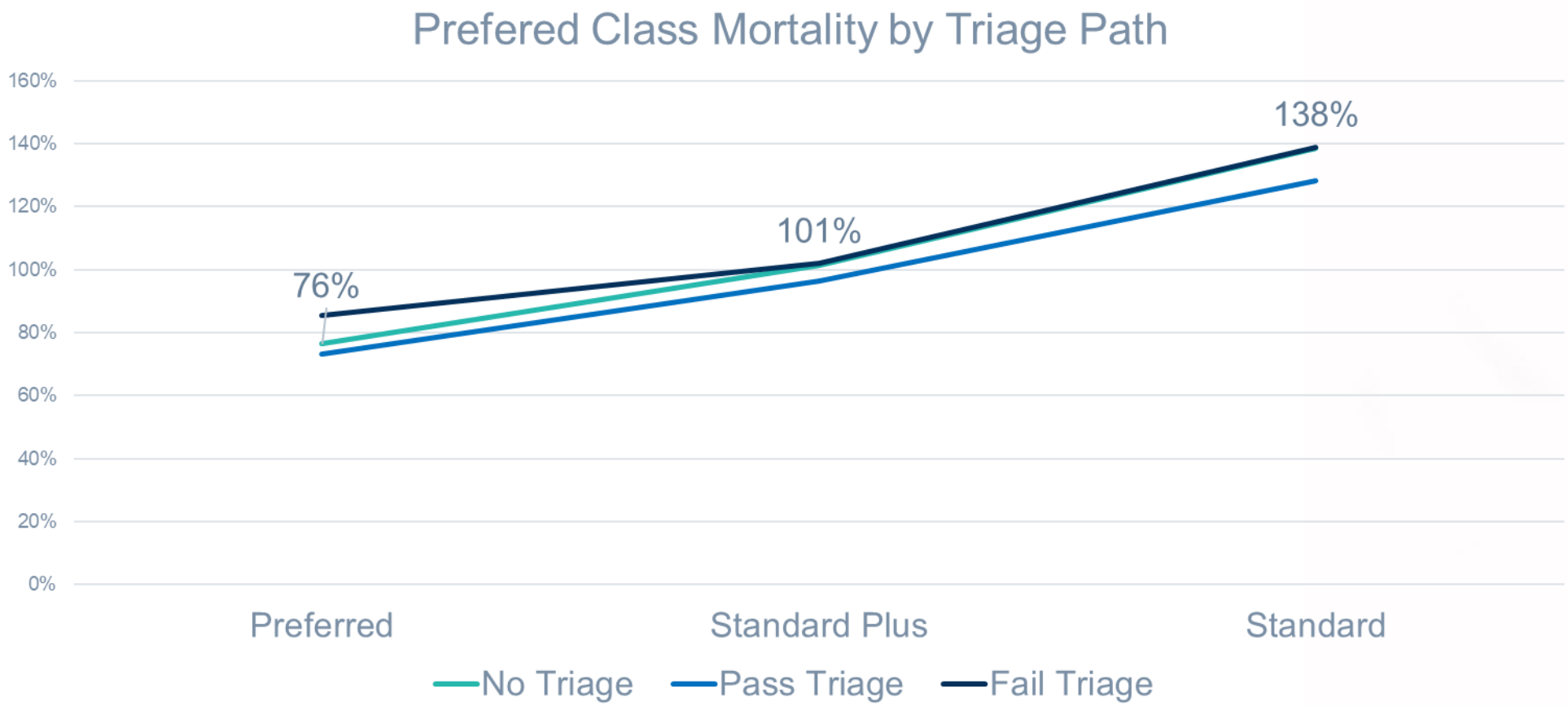


AUW Triage on Mortality – A Retro-Study

Data

- Lexis Nexis Risk Classifier attached to 87 % of data
- Munich Re Data with 17k Claims

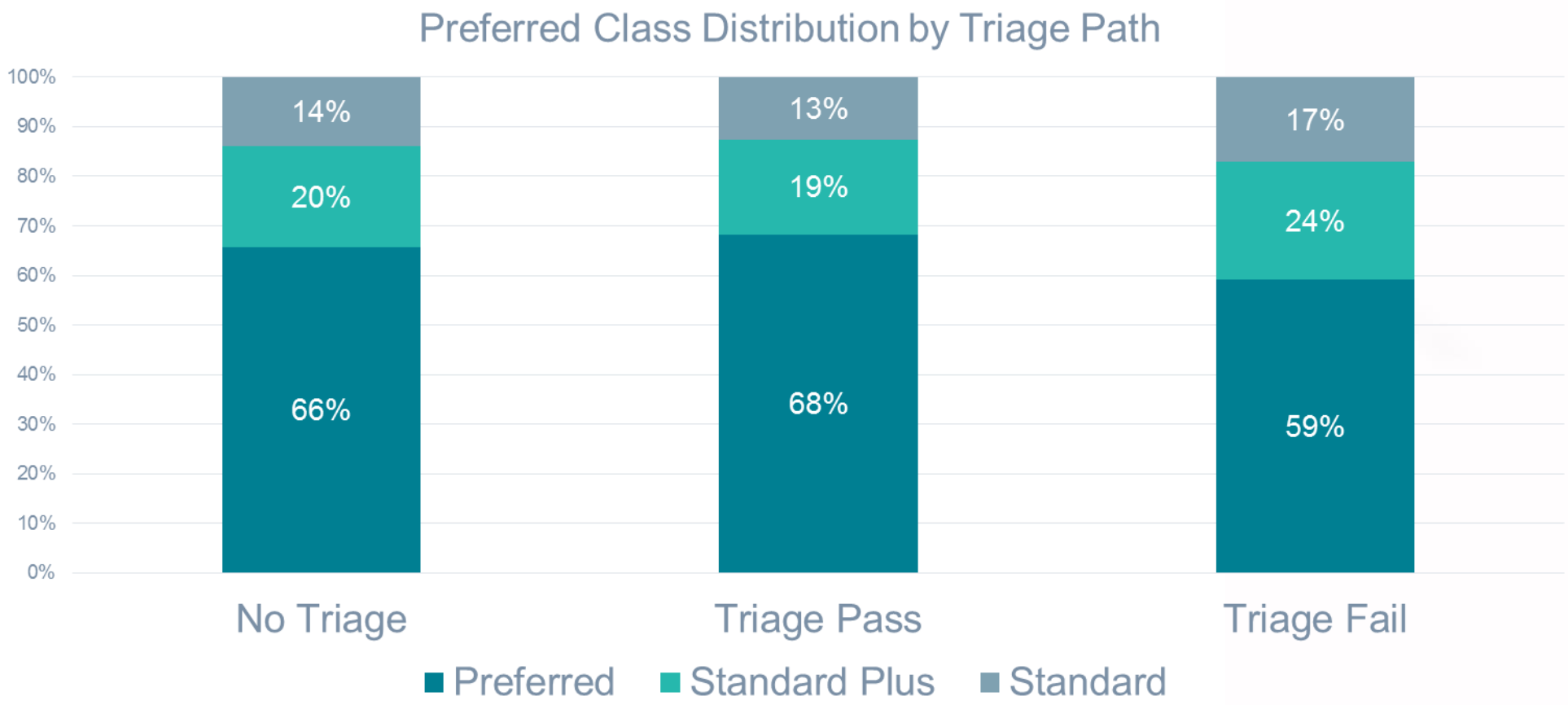
Triage

- LNRC ≥ 600: AUW
- LNRC < 600: FUW

Results

- Illustrate how a triage break point affects distribution and class level mortality

AUW Triage on Mortality – A Retro-Study



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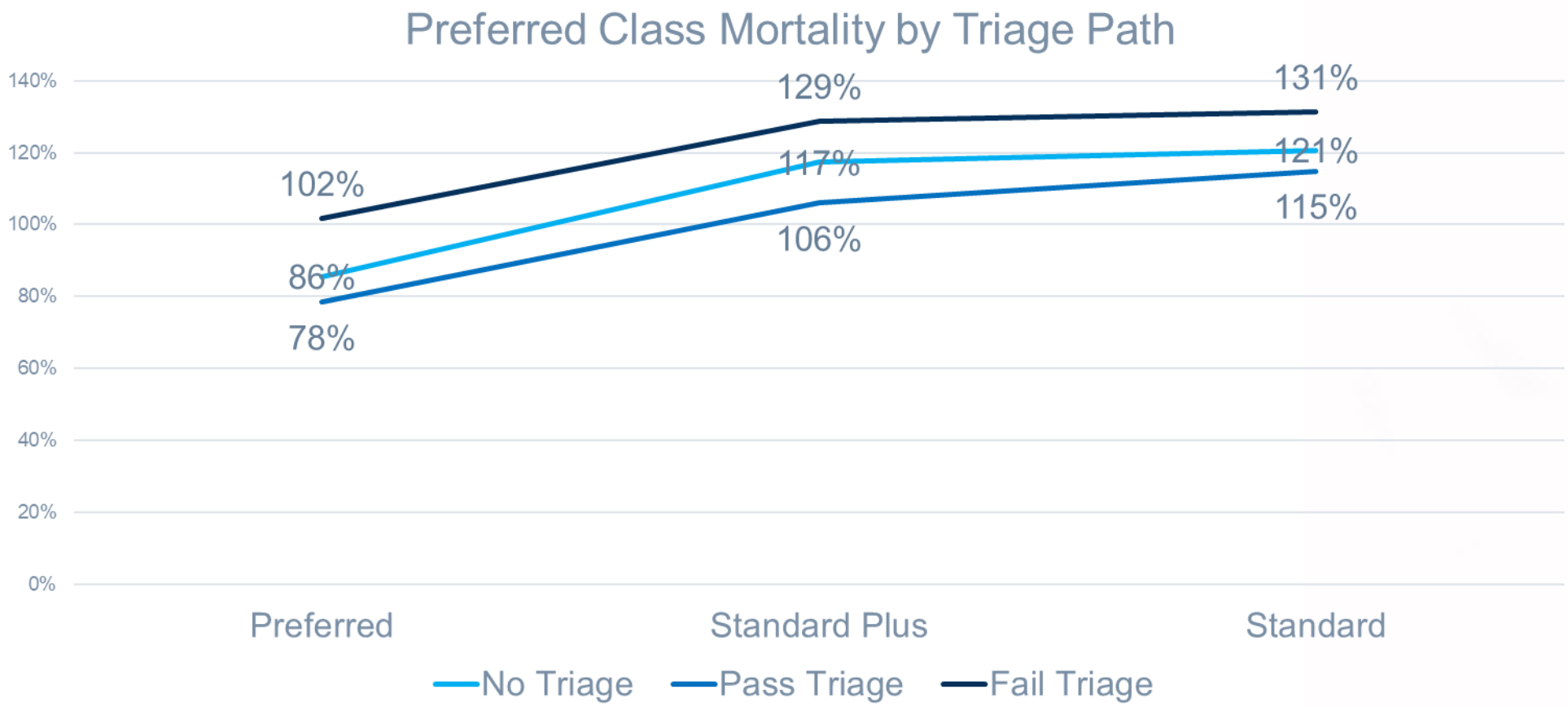
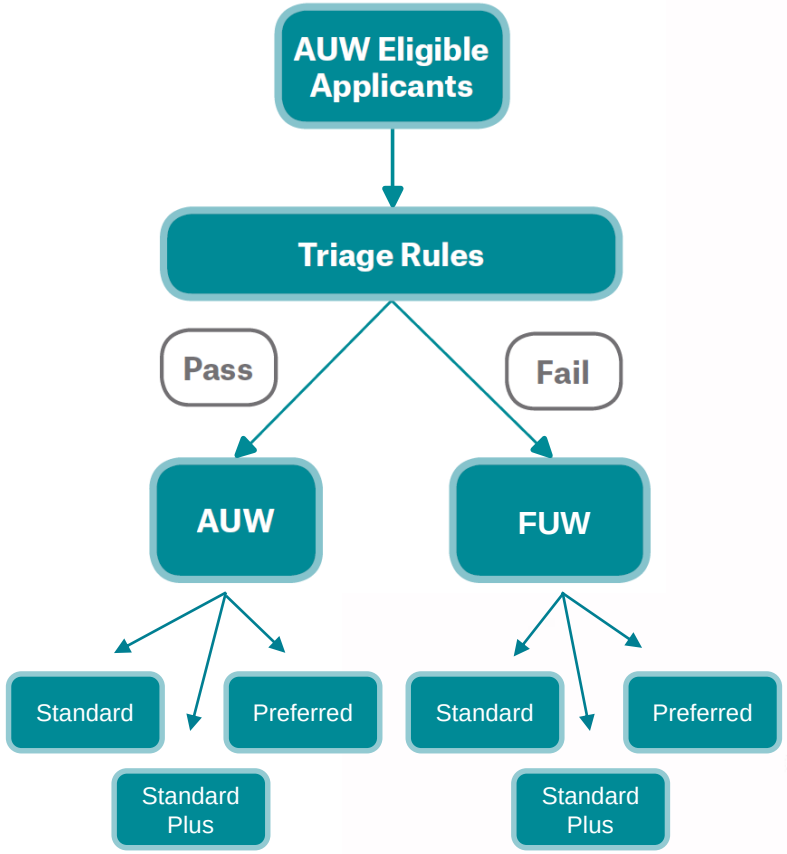


AUW Triage on Mortality – A Retro-Study

Triage on LNRC

- Pass to AUW: An almost parallel shift to lower mortality
- Fail to FUW: An almost parallel shift to higher mortality



Impact of AUW Triage on Mortality

Triage can be designed and calibrated to be correlated or uncorrelated with preferred underwriting rules

Both approaches are predictive but mortality segmentation is different

Each triage is unique and resulting impact to mortality will be unique

Impact of Accelerated Underwriting Triage on Distribution

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How do triage distribution shifts impact AUW?

Let AUW triage be calibrated to be mortality neutral

Adequacy of premiums under FUW and AUW

AUW Triage on Distribution - Mortality Neutral

	FUW	
Risk Class	Distribution	Relative mortality
Best Preferred	40%	85%
Preferred	30%	95%
Standard	30%	125%
Overall	100%	100%

Same population, switch to AUW

	AUW	
Risk Class	Distribution	Relative mortality
Best Preferred	50%	90%
Preferred	40%	105%
Standard	10%	130%
Overall	100%	100%

AUW Triage on Distribution - Mortality Neutral ≠ Profit Neutral

	FUW			
Risk Class	Distribution	Relative mortality	Premium	Claim Margin
Best Preferred	40%	85%	90%	94%
Preferred	30%	95%	101%	94%
Standard	30%	125%	133%	94%
Overall	100%	100%	106%	94%

Same population, switch to AUW

	AUW			
Risk Class	Distribution	Relative mortality	Premium	Claim Margin
Best Preferred	50%	90%	90%	100%
Preferred	40%	105%	101%	104%
Standard	10%	130%	133%	98%
Overall	100%	100%	99%	101%

AUW Triage on Distribution – Open World

AUW – Closed World				
Risk Class	Not Taken	Taken	Taken Distribution	Relative mortality
Best Preferred	20,000	25,000	50%	90%
Preferred	20,000	20,000	40%	105%
Standard	10,000	5,000	10%	130%
Overall	50,000	50,000	100%	100%

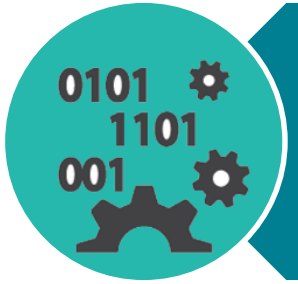
20% of 'Not taken' become Best Preferred and Preferred

AUW – Open World					
Risk Class	Not Taken	Taken	Taken Distribution	Baseline Relative mortality	New Relative Mortality
Best Preferred	20,000	29,000	52%	90%	92%
Preferred	16,000	22,000	39%	105%	107%
Standard	8,000	? 5,000	9%	130%	130%
Overall	44,000	56,000	100%	99.5%	101.4%

Impact of AUW Triage on Distribution

Triage calibration can be designed to be mortality neutral

Overall mortality being neutral will not mean that overall profit will be unaffected



It can be seen that class level differences in mortality and distribution shifts by class can impact overall profitability

Summary

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Summary Triage in AUW

- Triage - Introduces predictive power and confidence
- Mortality - Triage can segment mortality but differently based on nature of the triage
- Distribution – Class level shifts can impact underlying profitability and needs to be considered alongside mortality