ACCELERATED UNDERWRITING AND EVALUATING THE RISKS
JULY 8, 2020
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OBJECTIVES

- Provide a brief background on Accelerated Underwriting (AUW)
- Provide results from the Society of Actuaries’ 2018 Delphi study regarding AUW programs
- Outline risks associated with AUW programs
- Discuss how such risks might be evaluated as part of the regulatory review process
UNDERWRITING METHODS

Traditional

- Collection of fluids (blood, urine, and saliva)
- Attending Physician Statement (APS)
- Long-form application
- Relatively extensive medical information
**Accelerated Underwriting (AUW)**

- **Reduction in the requirements** of traditional underwriting if certain minimum demographic or health-related requirements are met by the applicant.

- **Alternative approaches** and data used to segregate applicants by risk, and those with anticipated lower risk can be underwritten with a lesser amount of medical information.

- **Price may be higher** than under the traditional approach, but many programs are designed to enable similar pricing using alternative approaches and data.
Simplified (SI)

- Limited approach to underwriting
- Information only, without the collection of fluids
- Assumption is that mortality will, therefore, be higher, and the price reflects that mortality
The question is not ... how well statistical algorithms or underwriting rules engines are able to predict mortality outcomes but ... how well a specific implementation performs at predicting mortality outcomes
Efficacy of AUW

For some applicants …
one or more of these approaches may provide the underwriting information needed …

while for another applicant …
another avenue may provide the information needed
DATA ELEMENTS EMPLOYED

- Rx Data
- Credit Based Scores
- Consumer Marketing Data
- APS
- Facial Recognition
- Other Data Elements (voice recognition technology, social media checks, and data from wearable devices)
The responses from the panelists regarding the percentage of applicants that would meet the necessary criteria to be considered “accelerated” had the following statistics:

1. Minimum of 10%
2. Maximum of 80%
3. Average of 42%

Source: Society of Actuaries Delphi Study
EXAMPLES OF FACTORS THAT IMPACT THE PERCENTAGE:

- Age
- Face Amount
- Mix of business
- Target Market
- Distribution Channel
- Socioeconomics

Source: Society of Actuaries Delphi Study
According to the panelist responses, the percentage of applications that will be submitted through accelerated underwriting will be as follows:

- In 5 years – min 20%, max 95%, average 57%
- In 10 years – min 40%, max 100%, average 79%

Source: Society of Actuaries Delphi Study
WHERE AUW MAY FAIL

- Older ages (and perhaps the very young)
- Higher face amounts
- Foreign nationals
- Complex or unusual medical history
- Target markets with high misrepresentation
- Substandard or impaired risks

Source: Society of Actuaries Delphi Study
AUW Data Elements Now

Source: Society of Actuaries Delphi Study
AUW Data Elements in 10 Years

Source: Society of Actuaries Delphi Study
RISK INDICATORS FOR AN AUW PROGRAM

- Uses few data sources, and does not consider electronic health records
- Failure to consider “sentinel effect”
- Uses data sources/vendors without internal verification or evaluation and controls
- Insufficient procedures to ensure compliance with HIPAA or FCRA
- Uses paramedical or paper application for medical data
- Relies on one or two pieces of information to make the acceleration pathway decision
- Has a short application (no drill downs, limited databases)
- Does not use random holdouts or post-issue checking
- Very significant focus on achieving cost savings
- Very high acceptance rate
- Low/no agent training
- Limited feedback loop/not incrementally changing with experience
- Significant difference in U/W class distribution vs traditional U/W
**Substandard Risks**

Percentage of applicants that are accepted that would have been declined under full UW, and the associated increase in mortality (for various “quality” AUW programs).

<table>
<thead>
<tr>
<th>Accelerated Program</th>
<th>Percent (Min, Max) Average</th>
<th>Increase in Mortality (Min, Max) Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above Average</td>
<td>(0,15) 3</td>
<td>(200%, 600%) 375%</td>
</tr>
<tr>
<td>Average</td>
<td>(0.75,20) 5</td>
<td>(250%, 600%) 386%</td>
</tr>
<tr>
<td>Below Average</td>
<td>(2,40) 10</td>
<td>(250%, 600%) 395%</td>
</tr>
</tbody>
</table>

Source: Society of Actuaries Delphi Study
MORTALITY RISK INDICATORS MORE DIFFICULT TO CAPTURE BY AUW

- Tobacco and non-prescription marijuana use
- Undiagnosed hypertension, hyperlipidemia, and/or diabetes/pre-diabetes
- Alcohol/substance abuse and illicit drugs
- Kidney and liver function problems; Proteinuria
- HIV
- Coronary Artery Disease markers
- Basically, any misrepresented or undiagnosed condition that can be routinely discovered on labs or in a routine APS, including cholesterol and liver enzyme tests, weight and other vital statistics currently gathered by paramedical examiners. Anything related to non-disclosure that takes considerable time to test or determine.

Source: Society of Actuaries Delphi Study
On accelerated business only, based on panelist responses, it is anticipated that the overall increase in mortality rates will be:

- Minimum -5%
- Maximum 25%
- Average 4%
IMPACT ON MORTALITY CURVE & GRADING

For those who believe that accelerated underwriting mortality will grade into traditional underwriting mortality, the expected timeframes are as follows:

- Minimum 0 years
- Maximum 50 years
- Average 14 years

Source: Society of Actuaries Delphi Study
One panelist pointed out that, if poor mortality emerges immediately after issue, then the program was deeply flawed.

The long term is where the true impact will be accurately measured for a well-constructed program.

Source: Society of Actuaries Delphi Study
The Sentinel effect is the tendency for people to behave differently when they know they are being watched.

**Offsetting Factors:**

- Addition of other tools, such as Rx histories, non-medical credit, and lifestyle models could offset this a bit.
- Random holdouts.
- Post-issue APS auditing program.
- Agent monitoring.
Approaches to measuring performance include:

- Random holdouts
- Post-issue monitoring
- Review of mortality experience
- Review of acceptance percentages
MEASURING PERFORMANCE

- Early lapse rates
- Early claims
- Speed to issue, including comparison of speed to expectations for the program
- Distribution monitoring and, in particular, looking at the prior distributions of the business (i.e., by risk class, smoking status, BMI, etc.) and comparing to the new distribution with accelerated underwriting.
- Cost and efficiency savings, including comparison to expectations
Panelists’ views on the percent of the AUW program customers that are new from a previously underinsured market, and what their mortality is as a percentage of the historic traditional underwriting customers’ mortality.

<table>
<thead>
<tr>
<th></th>
<th>(MIN, MAX) AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of New Customers</td>
<td>(3%,39%) 14%</td>
</tr>
<tr>
<td>Relative Mortality</td>
<td>(100%,190%) 114%</td>
</tr>
</tbody>
</table>
## Sample Inherent Risks

<table>
<thead>
<tr>
<th>Risk Statement</th>
<th>Likelihood</th>
<th>Severity</th>
<th>Inherent Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Company’s pricing assumptions for AUW business are aggressive, resulting in financial loss</td>
<td>M-H</td>
<td>S</td>
<td>H</td>
</tr>
<tr>
<td>The Company does not have sufficient in-house expertise to evaluate the external data used, resulting in U/W errors and financial loss</td>
<td>M-L</td>
<td>S</td>
<td>M</td>
</tr>
<tr>
<td>The Company’s mortality assumptions for AUW business are unreasonable, resulting in understated reserves</td>
<td>M-L</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>The Company’s reinsurance program does not adequately cover AUW business, resulting in capital strain</td>
<td>M-L</td>
<td>I</td>
<td>L</td>
</tr>
<tr>
<td>Errors in the AUW algorithms result in poor risk selection and financial loss</td>
<td>H</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Risk</td>
<td>Control</td>
<td>Residual Risk</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>The Company’s pricing assumptions for AUW business are aggressive, resulting in financial loss</td>
<td>An external expert in AUW reviews the AUW program and the pricing assumptions and provides a formal opinion (Strong)</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>The Company does not have sufficient in-house expertise to evaluate the external data used, resulting in U/W errors and financial loss</td>
<td>The Company performs random holdouts to test the AUW relative to traditional UW (Moderate)</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>The Company’s mortality assumptions for AUW business are unreasonable, resulting in understated reserves</td>
<td>The Company includes a margin on mortality assumptions in cash flow testing (Weak)</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>Errors in the AUW algorithms result in poor risk selection and financial loss</td>
<td>The models are subject to an annual formal validation process by ERM (Moderate)</td>
<td>H</td>
<td></td>
</tr>
</tbody>
</table>
## Sample Testing

<table>
<thead>
<tr>
<th>Risk</th>
<th>Sample Substantive Test*</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Company’s pricing assumptions for AUW business are aggressive, resulting in financial loss</td>
<td>Review pricing assumptions relative to experience, industry data, and the specifics of the program</td>
</tr>
<tr>
<td>The Company does not have sufficient in-house expertise to evaluate the external data used, resulting in U/W errors and financial loss</td>
<td>Review background/experience of internal and external AUW personnel and, if needed, evaluate the UW analysis and experience to date</td>
</tr>
<tr>
<td>The Company’s mortality assumptions for AUW business are unreasonable, resulting in understated reserves</td>
<td>Review the reserve adequacy analysis mortality sensitivities and potential exposure to higher mortality</td>
</tr>
<tr>
<td>Errors in the AUW algorithms result in poor risk selection and financial loss</td>
<td>Test the algorithm using backtesting, code review, and/or replication on a sample basis</td>
</tr>
</tbody>
</table>

*assuming no ability to rely on external audit*
CONCLUDING REMARKS

- Underwriting is evolving with newer underwriting techniques that are reaching more potential applicants.
- How well these practices are implemented, and the quality of data sources used, will go a long way to providing predictable mortality outcomes.
- The quality of many currently available data sources is sound and will only improve with time.
- The maturity and quality of an individual insurer’s program varies widely, and careful monitoring is important to avoid unexpected loss.
CONCLUDING REMARKS

For the companies surveyed, accelerated underwriting appears to be leading the charge in today’s current state of underwriting.

Traditional underwriting will still have its place for applicants who are not triaged into an accelerated underwriting process.

Most companies’ goal is to maintain similar mortality outcomes and pricing with what is offered today, at a lower cost.
CONCLUDING REMARKS

It may, in fact, turn out that those who do not innovate may be subject to anti-selection due to a drawn out underwriting process.

They may end up experiencing higher mortality if all of the good risks tend toward products and companies that offer accelerated underwriting.

They are also more likely to lose market share.
Questions?

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