

Bruin Actuarial Society Eighth Annual Case Competition

Presented by Beam Dental

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Introduction

You are an actuary at Block Dental. Block Dental was founded in 2012 and has been aggressive with trying to win new business in order to get their name in the industry. Currently, they feel comfortable with their position, but are now worried about their loss ratio. Upper management would like to try to decrease that loss ratio from around 88% to 70% in three years.

Your manager wants you to focus on reducing the in-force business' loss ratio by enforcing a stricter renewal policy. You are to determine the rate increases for the different types of groups in order to reach that lower loss ratio.

Tasks

1. Analyze the data by the bands provided. For each factor, consider if the win rates are intuitive. If so, explain the intuition. If not, explain why these results might've occurred.
 - (a) Assuming the same amount of utilization, what are some other factors that could cause one group to have a higher loss ratio than others?
 - (b) In the past, some groups with a higher loss ratio had a lower rate increase. Give some reasons as to why this might've occurred.
2. Develop a renewal probability model based off two factors.
 - (a) Justify your decision and why you believe it is appropriate. Why is it necessary to consider at least two factors?
 - (b) Plot the renewal win rate curve(s) your model generates.
3. Develop one strategy for maximizing profit and one strategy for maximizing revenue. Each group is profitable at a 75% loss ratio.
 - (a) Discuss any assumptions you've made.
 - (b) Calculate expected premiums, expected claims, and your expected loss ratio for each year.
4. Select one of the strategies you've created, or create a blend of the two to use, to decrease the loss ratio to 70% in three years.
 - (a) Suggest and enact improvements to the probability model and/or to the renewal strategy, and demonstrate the benefit of implementing those changes.
 - (b) Sometimes upper management is uncomfortable with giving large rate increases. Why would this be concerning to them? Please consider this when deciding the best strategy.
5. After your analysis, be sure to discuss these implications:
 - (a) Describe any weaknesses that may apply to the model you've built.
 - (b) Discuss possible trade-offs between the renewal strategies you've considered.
 - (c) Suggest other ways to reduce loss ratio.