### Appendix A: Program Design

*A1: Mortality Reductions Through Smoking Cessation Across Different Ages*

*A screenshot of a graph

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A screenshot of a spreadsheet

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A key finding was the underrepresentation of Lumaria’s smokers from age 26-65 (estimated to be 15.88%) compared to SuperLife’s proportion of smokers in the in-force policy dataset (6.31%). Based on the population’s age distribution and smoking distribution, ages 26-44 has 7.77% and ages 45-65 has 8.11% of smokers, making both age groups viable targets as a key area for instilling health behaviour and growth. However, external research indicated that younger years between quitting before 44 has better mortality reduction with approximately 90% of excess risk from smoking reduced. This mortality reduction decreases by 24% after 45 and, similarly, younger ages of 25 to 39 have a higher attempt and success rate of quitting, becoming a more viable target market.

Source: Kim. Y, Lee. J & Cho. W, 2021 & Lindholt et al., 2023

*A2: Program Expenses*

A table with numbers and letters

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The encyclopedia states that the Lumarian population is covered by universal health care (UHC). Medicare is used as a basis UHC scheme to determine the corresponding costs covered by SuperLife and UHC. Further potential interventions were reduced to ones which would be partially or fully covered by UHC. All screening programs require periodic costs every two years and smoking cessation is assumed to be paid in one upfront cost per policyholder. Periodic costs every two years would be assumed to be paid for preventative screenings by the UHC except for initial implementation costs and acquisition per policyholder. Further external research found smoking cessation not to be fully covered by UHC for intensive care which resulted in an estimated expected initial cost of Č2000 per policyholder.

Source: Department of Health and Human Services, 2023 & U.S. Centers for Medicare and Medicaid Services, 2022

*A3: Cancer Versus Heart-Related Deaths Among In-force Policyholders*

A graph of life insurance

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A graph of different age groups

Description automatically generated with medium confidenceThe following figure shows that while an approximately even amount of cancer deaths are from WL and T20 policyholders, more heart disease deaths occur among WL policyholders. As heart-related deaths is the second leading cause of death among policyholders and the greatest among policyholders over the age of 45, as seen below, LCG decided to introduce the healthy heart intervention for eligible WL policyholders over the age of 45.

*A4: Distribution Channels Percentage of Sales for SuperLife by Insurance Product for the Whole In-force Book and for Policies Written in the Past 5 Years*

*Whole Book:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Distribution Channel | | |
| Agent | Online | Telemarketing |
| Insurance Product | T20 | 30.8% | 34.6% | 34.6% |
| SPWL | 72.0% | 18.5% | 9.5% |

*Past 5 Years:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Distribution Channel | | |
| Agent | Online | Telemarketing |
| Insurance Product | T20 | 25.0% | 49.8% | 25.2% |
| SPWL | 69.9% | 20.0% | 10.1% |

We see an increasing use of the online distribution channel, hence why this is a particular area of focus for marketing our offerings. However, agents continue to be an important distribution channel for SPWL new business, hence why LCG finds it essential that SuperLife trains agents to effectively communicate the benefits of these life insurance offerings to potential policyholders.

A graph of a number of people

Description automatically generated with medium confidence*A5: Other Exploratory Data Analysis*

Figure shows the number of policies across all ages based on their policy type. It is observed that T20 policies are purchased by individuals 56 and below where as whole life are 35 and above.



A graph of different sizes and colors

Description automatically generated with medium confidence

Figure shows the number of policies for the two policy types broken down into groups of face amount.



A graph of a number of people

Description automatically generated with medium confidence

Count of policies from rural or urban region for all ages.



A graph of different colored squares

Description automatically generated with medium confidence

Cause of death vs gender of the policy holders.



A graph of a number of years

Description automatically generated with medium confidence

Count for the year of death for policy holders living in rural vs urban regions.



A graph of numbers and a number of objects

Description automatically generated with medium confidence

Proportion for the cause of death. It is observed that cancer and heart related problems have the highest proportion for cause of death.

A computer code with text

Description automatically generated

A graph of different age groups

Description automatically generated with medium confidence

Distribution for policy count for cancer and heart related cause of death across all ages.

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A graph of a graph of a number

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Average cost per policy across all ages. The figure shows an increasing trend. In alignment with expectation as the older the person gets, we expect more severe and frequent claims.

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