

## **Case Study:**

### **Evaluating the Bellagos Social Long-Term Care Insurance Program**

#### **Summary**

Your team of actuarial consultants has just been hired by the government of Bellagos to evaluate its Social LTC Insurance Program and make policy recommendations that ensure the program sustainably meets citizens' future long-term care needs.

#### **History**

In March of 1998, the government of Bellagos, a politically and economically stable government of a developed nation, introduced the Social LTC Insurance Act, a public insurance program that covers the majority of Bellagos citizens in need of long-term care (LTC). Most citizens rely on the Social LTC Insurance Program as their primary form of LTC insurance. Supplementary private insurance policies are available, but the private market for LTC insurance is a relatively small and developing one.

The Social LTC Insurance Program has become a critical component of the overall set of social programs provided to Bellagos citizens. In recent years, there has been a shift in the country's demographics and in the LTC insurance program's usage patterns. As a result, the government of Bellagos has faced mounting public pressure to analyze and update the current design of the LTC insurance program to ensure it will sustainably meet the needs of Bellagos citizens over the next decade.

#### **Current Environment**

Government officials, citizens, corporations, and other interest groups each have opinions about the current LTC insurance program. These stakeholders have concerns regarding whether the current LTC insurance program will be able to sustainably address the future needs of Bellagos citizens. These groups are focused on whether changes should be made in the face of projected trends, for example, changing fertility rates, lifespans, program revenues and expenditures, ratio of older to younger citizens supporting the program, and advancements in technology. It has become clear to the Bellagos government that an unbiased and evidence-based analysis is needed to evaluate what policy changes will best position the program for a financially sustainable future.

#### **The Bellagos Risk Management Commission**

As a result, the government has passed legislation to create the Bellagos Risk Management Commission (BRMC), an independent government council that has two primary responsibilities: 1) to holistically assess any risks threatening the sustainability of the country's social insurance programs and 2) to make recommendations on the actions the government should take in response.

Angela Cortez, FSA, is the BRMC's LTC Program Risk Officer and is responsible for overseeing analyses and recommendations specific to the Social LTC Insurance Program. Angela has hired your actuarial consulting team to help identify the interrelated trends jeopardizing the program's financial sustainability through the year 2028. Within the scope of this project, you have agreed to: 1) conduct a third-party analysis of the LTC

insurance program's financial sustainability over the coming decade and 2) recommend policy changes to ensure citizens' LTC needs can be adequately met.

### **Your Assignment**

Angela has asked your team to analyze the provided resources in order to address each of the following questions within a written report:

- 1) **Analysis Methodology:** What approach did your team take in analyzing the sustainability of the LTC insurance program over the next decade? What evidence, research or creative strategies support your chosen methodologies? Please explain.
- 2) **Sustainability Assessment:** Based on your data analysis, which program factors are most important to maintain and which, if any, have cause for concern? What specific risks threaten the program's sustainability, and what are the projected 2028 impacts of those risks?
- 3) **Recommendations:** What is your advice on how the objectives of the government should be prioritized? What changes do you recommend the government make to maximize the likelihood that each objective is achieved? What do you project the 2028 impact(s) of your recommendations to be, assuming the government chooses to implement your recommendations within a twelve-month timeframe?
  - **Note:** Please include citations in the body of your report wherever secondary research is discussed and a list of all sources cited as an appendix at the end.
- 4) **Trade-offs:** Are there any tradeoffs the government should consider in deciding whether to implement your recommendations? What potential downsides or unintended consequences might result and for which stakeholders?

**Throughout your written recommendation, Angela has requested that you include discussion of data limitations when relevant.** For example, how complete or continuous is the data and information provided? Are there limitations that may have impacted your conclusions or resulted in the need to make certain assumptions?

### **Data Provided**

In order to get started, Angela has provided you with the following resources for consideration in your analysis:

- A document outlining the details of the country's public LTC insurance program
- A spreadsheet containing four tabs, each with the following sets of data:
  1. **Household Records Tab:** Household data on 10,000 Bellagos households, collected during the 2017 Bellagos Census and designed to be proportionally representative of the full Bellagos population
  2. **Historical Data Tab:** Annual historical data from 2013 to 2017 containing potentially relevant population, program-specific and economic trends
  3. **Mortality Data Tab:** Estimated mortality rates for 2005, 2010 and 2015, generated from Bellagos Mortality and Population Reports

4. **Care Level Transition Matrix Tab:** Government data on the percentage of insureds expected to remain healthy, remain at their current care level or transition to a different level of care next year

In addition to this Bellagos-specific data, Angela has suggested a few useful sources (listed below). It is not at all necessary for your team to use these sources in drawing your conclusions, but Angela believes you may find them helpful.

- <https://www.issa.int/en/country-profiles>
- <http://stats.oecd.org/>
- <https://data.worldbank.org/>
- <http://www.wolframalpha.com/examples/SocioeconomicData.html>

### **Report Specifications**

To assist in the BRMC's review of your report, Angela has asked that you include citations in your written narrative wherever secondary research is discussed and, as an appendix, a reference list containing all cited sources. She has also asked that you submit a file with all calculations/models completed during your analysis. To ensure every request is met, please be sure to carefully review the full set of submission requirements at the end of this document.

### **Wrap-up**

The BRMC acknowledges that there is no one right answer to this type of optimization challenge and is counting on your team's creative problem solving and strategic thinking abilities to holistically analyze program-related risks and recommend evidence-based and data-driven policy changes. Angela has made it clear that the commission hired multiple consultants to inform decision making, so while your recommendations will be carefully considered, the government has no obligation to implement these or take action on your work.

The BRMC has also made it clear that there is no expectation your team analyze (or even consider) all of the data that has been provided. The government is relying on your team to help determine what data and information is relevant to solving this challenge. Each consulting team hired is expected to have a different point of view.

Angela is grateful for the help of your team to ensure that all citizens who need long-term care will continue to have access to the right types of support throughout their lives. She is counting on you to think creatively and holistically about how the government can best address the long-term care needs of its citizens both now and in the future.

## Submission Requirements:

Your team's submission will contain:

- 1) a written report with all qualitative arguments,
- 2) a file containing all calculations/models completed during your analysis and,
- 3) should you choose to cite secondary sources within your written narrative, an appended reference list containing all sources cited.

### 1. Written Report

- a. Clearly-articulated response to each question asked by the client (*including about your team's analysis methodology, sustainability assessment, recommendations, trade-offs and data limitations*)
  - i. Open with an executive summary of your team's **analysis methodology**
  - ii. Discuss conclusions from your team's **sustainability assessment**
  - iii. Describe your **recommendations** and any potential **trade-offs**
  - iv. Disclose **data limitations** and any resulting assumptions throughout
- b. Maximum of **2,500 words** (*for your written report only*)
- c. Inclusion of the following items is highly encouraged and will **not** count toward your 2,500-word limit:
  - i. Figures of graphs/charts with captions summarizing key findings
  - ii. Inclusion of citations wherever external research is discussed
  - iii. Reference list of cited sources at the end of your report
- d. Use 12-point, double-spaced font with standard margins

### 2. Appendix of Calculations

- a. Please submit all calculations/modeling completed during your team's analysis

***\* Please keep in mind the different audiences who will read your report. While government actuaries will be interested in your in-depth calculations and analyses, government executives will only have the time (and training) to read your written narrative. Therefore, please be sure to include any conclusions you wish to highlight in the body of your written report.***