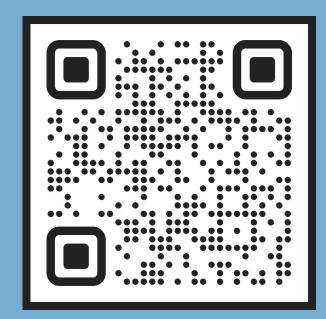
# Lumaria's Leap: Revolutionizing Health Incentives for Lifespan Extension

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## BACKGROUND

- We developed several health incentive programs aimed at the objective of enhancing policyholder life expectancy for the fictitious Lumarian population.
- Our exploratory data analysis (EDA) revealed a significant association between smoking habits and increased mortality due to circulatory diseases.
- Our second finding was high rates of coronary events; encouraging healthier lifestyles can contribute to a decrease in health-related risks and improve overall life expectancy.
- Finally, our research extended to examining the high mortality rates attributed to neoplasms, specifically related to the exploration of preventative measures.

### RESULTS

- The average price of a sunscreen dispenser is Č148.55 per dispenser and we plan to install 1000 sunscreen dispensers in the most populated farms, construction sites, and cities. On Super Luminova, we would make sure to have at least 100 additional sunscreen dispensers.
- We will also offer a 15 percent discount on screenings. Additionally, the average cost of a free genetic counseling session is about Č348.60 per session. However, when considering this cost, it is still less than the benefit that Superlife will receive if people are aware and take preventative measures.
- Č600 million is the predicted maximum cost of an app over 10 years, which includes design, development, and monetary rewards for completion of daily goals
- This amount would still be miniscule in comparison to the modeled and predicted future claims

#### METHODS

- Lumaria has an employment distribution consisting of 12 percent of the employed population working in agriculture and 15 percent in construction, two groups that face increased risks of skin cancer from exposure to solar ultraviolet radiation. As an incentive to apply sunscreen more frequently, we wanted to provide free sunscreen dispensers to employees of the agriculture and construction sectors that spend more time outside and to the general public on Super Luminova, a festival celebrated on the summer solstice with many outdoor activities.
- Due to the correlation between increased screenings and decreased mortality rates, we wanted to incentivize people to get screenings by offering them at a discounted price. Additionally, we plan to implement a discount on genetic testing so people are aware if they have a gene that increases their risk of many cancers. If anything concerning is found while testing, a free genetic counseling session with a preliminary analysis is offered.
- In an era where digital engagement is at its peak, the intersection of technology and health promotion presents unprecedented opportunities for fostering healthier lifestyles. Among the many digital innovations, gamification has emerged as a huge mechanism for encouraging active behaviors, leveraging the intrinsic human affinity for play and competition.

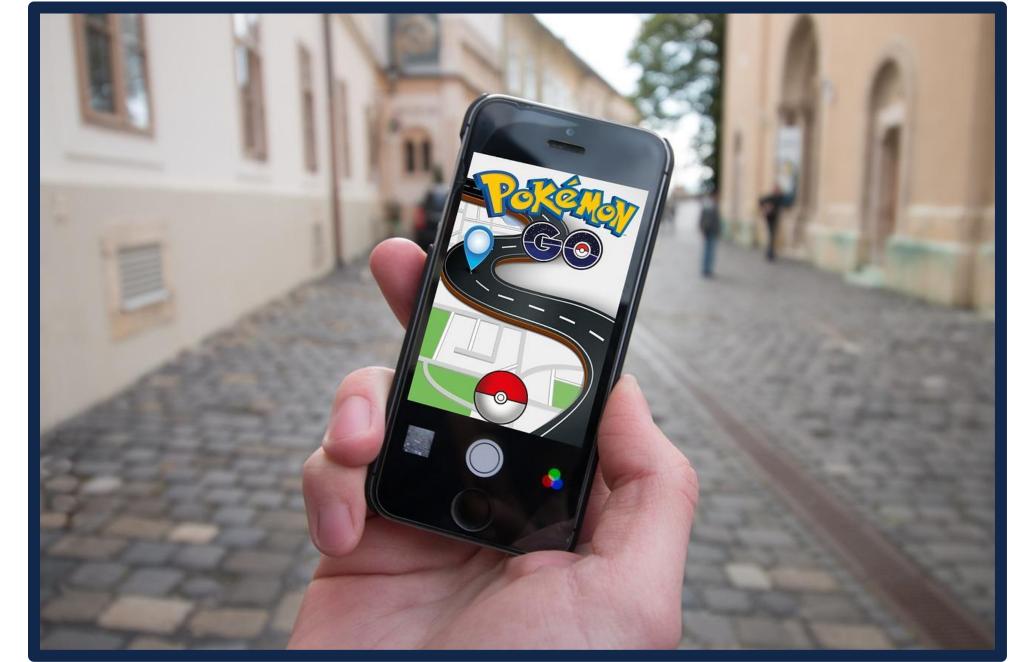
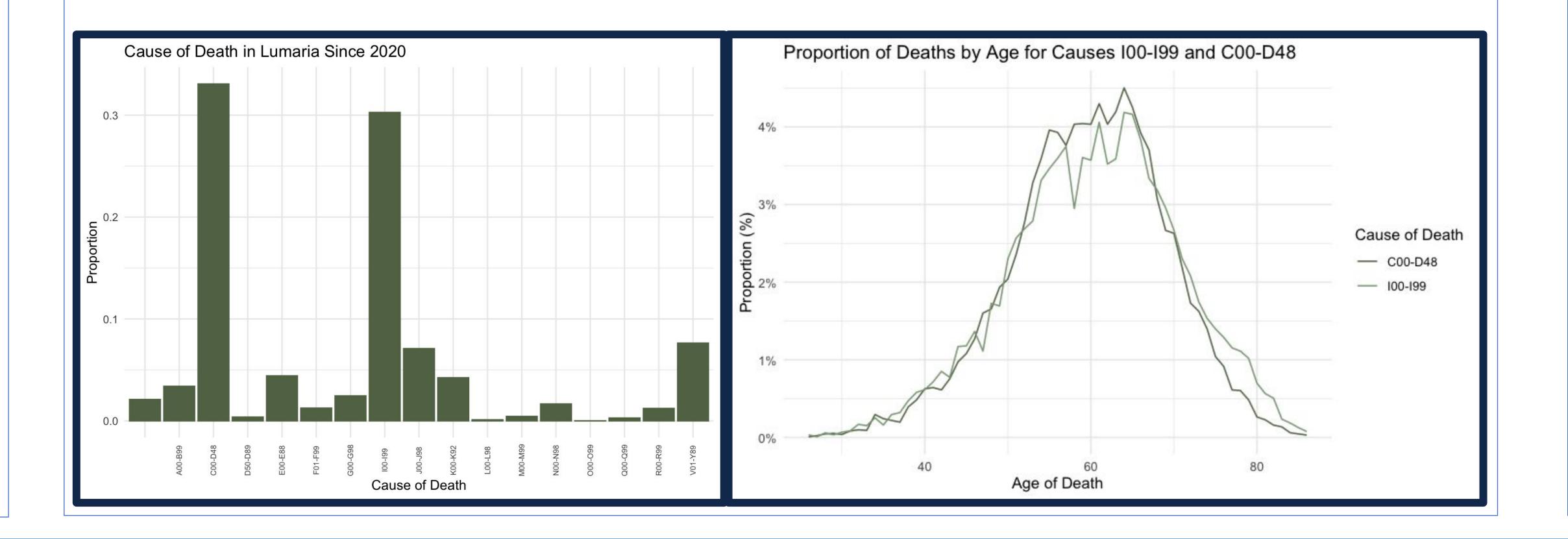


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• The adverse health implications of physical inactivity are well-documented, ranging from increased risks of obesity and type 2 diabetes to heart disease and various forms of cancer



# CONCLUSIONS

Our investigations have laid bare the stark realities confronting Lumaria—high mortality rates stemming predominantly from smoking, neoplasms, and sedentary lifestyles. In response, our multifaceted strategy encompasses smoking cessation programs, cancer prevention efforts, the gamification of health-promoting activities, and leveraging celebrity endorsements to foster a culture of health consciousness.

#### References

- [Bickel et al., 1999] Bickel, W. K., Odum, A. L., and Madden, G. J. (1999). Impulsivity and cigarette smoking: delay discounting in current, never, and ex-smokers. Psychopharmacology, 146(4):447–454. Place: Germany.
- [Cornfield et al., 1959] Cornfield, J., Haenszel, W., Hammond, E. C., Lilienfeld, A. M., Shimkin, M. B., and Wynder, E. L. (1959). Smoking and lung cancer: recent evidence and a discussion of some questions. Journal of the National Cancer Institute, 22(1):173–203. Place: United States.
- [Harvard Health, 2012] Harvard Health (2012). A lifetime in the sun? You can still cut your risk. Minimize the chance of melanoma, the most dangerous skin cancer, with smart sun protection habits and regular checks for worrisome moles. Harvard Men's Health Watch, 16(11):1, 7.
- [Sander et al., 2020] Sander, M., Sander, M., Burbidge, T., and Beecker, J. (2020a). The efficacy and safety of sunscreen use for the prevention of skin cancer. CMAJ: Canadian Medical Association journal = journal de l'Association medicale canadienne, 192(50):E1802–E1808. Place: Canada.
- [Stead et al., 2012] Stead, L. F., Perera, R., Bullen, C., Mant, D., Hartmann-Boyce, J., Cahill, K., and Lancaster, T. (2012). Nicotine replacement therapy for smoking cessation. The Cochrane database of systematic reviews, 11:CD000146. Place: England.
- [U.S. Department of Health and Human Services et al., 2014] U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, and Office on Smoking and Health (2014). The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. U.S. Department of Health and Human Services, Atlanta, GA.