Title*

Subtitle

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Abstract

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1 Introduction

Alberta, a province known for its vibrant culture and dynamic economy, faces ongoing challenges in public health, with mortality rates reflecting a complex interplay of socioeconomic, environmental, and healthcare factors. This paper aims to delve into the intricacies of mortality rates in Alberta, exploring the trends, causes, and determinants that shape the province's public health landscape. By leveraging data on causes of death, including chronic diseases,

*Code and data are available at: https://github.com/iJustinn/Alberta_Mortality_Rate.git

Table 1: top 8 major causes in 2019

Year	Cause	Ranking	Deaths	Years
2019	Organic dementia	1	1,997	22
2019	All other forms of chronic ...	2	1,886	22
2019	Malignant neoplasms of trac...	3	1,523	22
2019	Other chronic obstructive p...	4	1,159	22
2019	Acute myocardial infarction	5	1,061	22
2019	Atherosclerotic cardiovascu...	6	678	22
2019	Accidental poisoning by and...	7	677	10
2019	Stroke, not specified as he...	8	602	22

accidents, and emerging health threats, we provide a detailed analysis of mortality patterns and their implications for Alberta's healthcare system and policy-making.

2 Data

Data used in this paper was cleaned and processed with the programming language R (R Core Team 2022). Also with support of additional packages in R: `tidyverse` (Wickham et al. 2019), `ggplot2` (Wickham 2016), `janitor` (Firke 2023), `readr` (Wickham, Hester, and Bryan 2023), `knitr` (Xie 2014), `rstanarm` (Goodrich et al. 2023), `modelsummary` (Arel-Bundock 2023).

2.1 Source

This paper utilize data from open.alberta.ca (Alberta Open Government Portal 2023) as bases.

2.2 Method

2.3 Attibutes

3 Results

4 Discussion

5 Conclusion

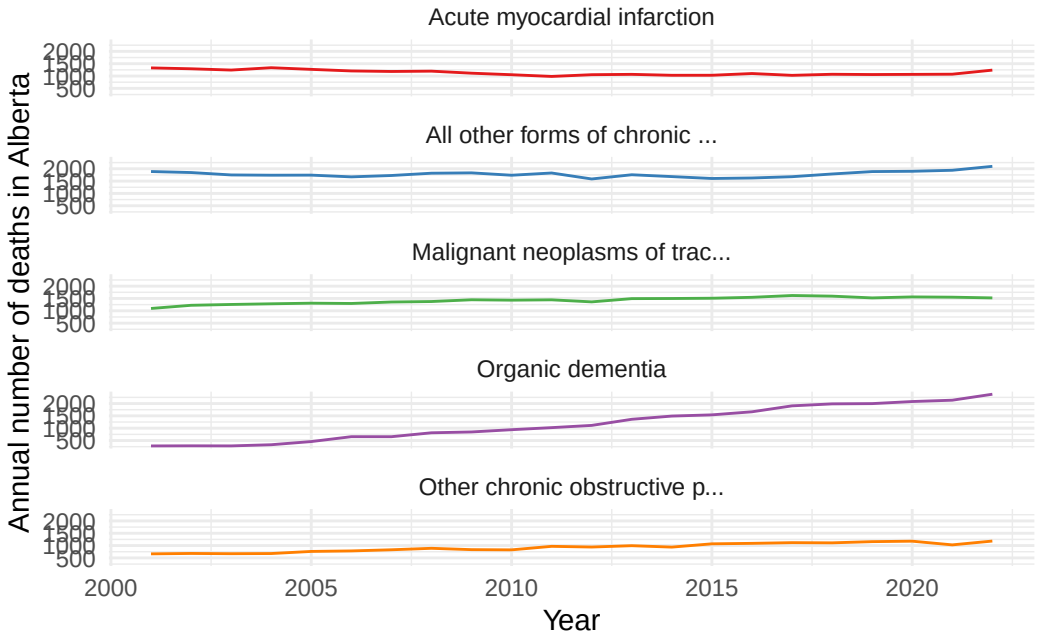

Figure 1: result for poisson model

References

Alberta Open Government Portal. 2023. "Leading Causes of Death." https://open.alberta.ca/opendata/leading-causes-of-death.

Arel-Bundock, Vincent. 2023. *Modelsummary: Summary Tables and Plots for Statistical Models and Data: Beautiful, Customizable, and Publication-Ready.* https://vincentarelbundock.github.io/modelsummary/.

Firke, Sam. 2023. *Janitor: Simple Tools for Examining and Cleaning Dirty Data.* https://CRAN.R-project.org/package=janitor.

Goodrich, Ben, Jonah Gabry, Imad Ali, Sam Brilleman, and and others. 2023. *Rstanarm: Bayesian Applied Regression Modeling via Stan.* https://mc-stan.org/rstanarm.

R Core Team. 2022. *R: A Language and Environment for Statistical Computing.* Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis.* Springer-Verlag New York. https://ggplot2.tidyverse.org.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.

Wickham, Hadley, Jim Hester, and Jennifer Bryan. 2023. *Readr: Read Rectangular Text Data.* https://CRAN.R-project.org/package=readr.

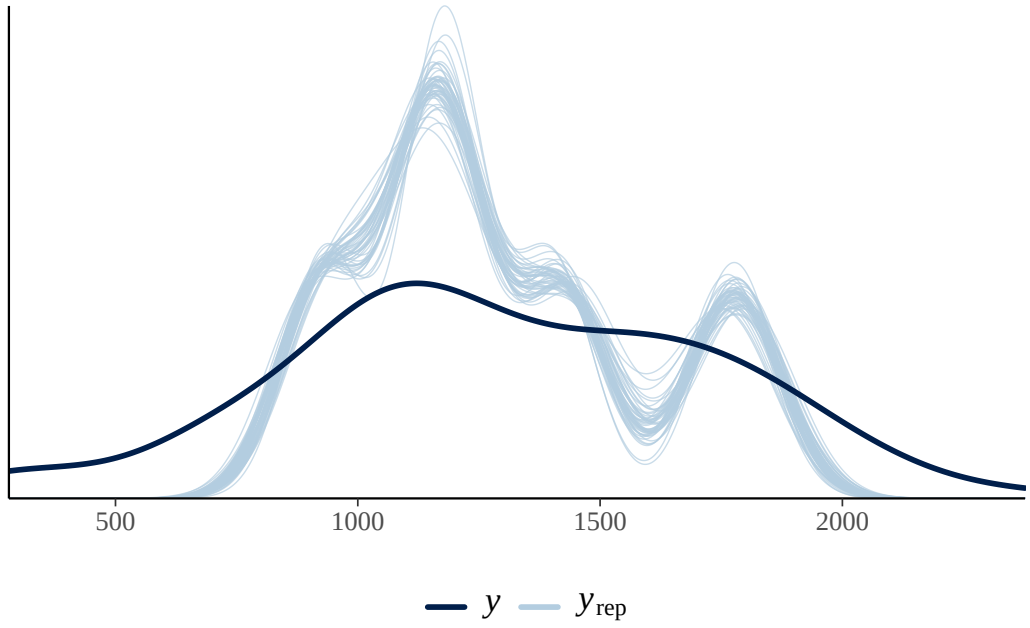

Figure 2: result for poisson model

Xie, Yihui. 2014. *Knitr: A Comprehensive Tool for Reproducible Research in R*. Edited by Victoria Stodden, Friedrich Leisch, and Roger D. Peng. Chapman; Hall/CRC. http://www.crcpress.com/product/isbn/9781466561595.

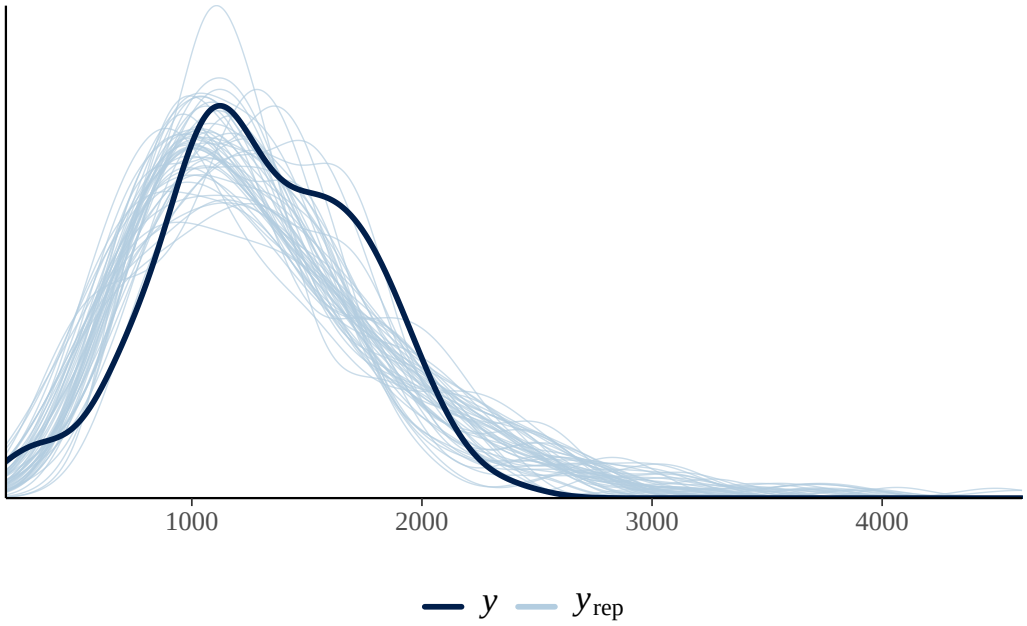

Figure 3: result for poisson model

Table 2: summary of modeling

	Poisson	Negative binomial
other chronic	0.447	0.449
		(0.102)
neoplasms	0.223	0.226
		(0.100)
dementia	0.046	0.048
		(0.101)
obstructive pulmonary	−0.205	−0.203
		(0.104)
Num.Obs.	110	110
Log.Lik.	−5718.182	−810.934
ELPD	−5926.8	−815.4
ELPD s.e.	1216.0	10.6
LOOIC	11 853.7	1630.8
LOOIC s.e.	2432.0	21.2
WAIC	11 954.1	1630.8
RMSE	325.38	325.39