

# Title\*

Shiji Zhang, Zongcheng Cao

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\*Code and data are available at: <https://github.com/Northboi/The-Mortality-in-Alberta>

# 1 Introduction

## 2 Data

The open dataset used for this analysis is named “Leading Causes of Death” from the government of Alberta. The dataset gives information about the 30 leading causes of mortality in the province of Alberta, and provides a ranking of these death causes by the total number of deaths. The causes of death used in the dataset is based on the International Classification of Diseases 10th Edition. The dataset included complete information from 2001 to 2022, and it is updated annually from 2001, the last update happened in September, 2023. Therefore, ever since the year of 2001, 30 leading reasons of death will be added to the dataset every year, with the number of deaths caused by there reasons, and there are chances for a cause to exist in the ranking for multiple years. A variable “n” in the dataset will count the number of times for each specific cause of death to enter the ranking.

Variables: There are Calendar Year: A string variable, indicates the specific year of each cause of death was recorded in the ranking.

Cause: A string variable, provides the name of each reason for death, if a leading cause entered the ranking for more than one year, then there will be multiple records with the same “Cause” variable.

Ranking: An integer variable from 1 to 30, demonstrates the place of the cause of death in the ranking for a specific year. Total Deaths: An integer variable, n: An integer variable, counts the number of times for a specific cause of death enter the ranking, which is equivalent to the number of times for a specific cause of death appears in the dataset until the latest update.

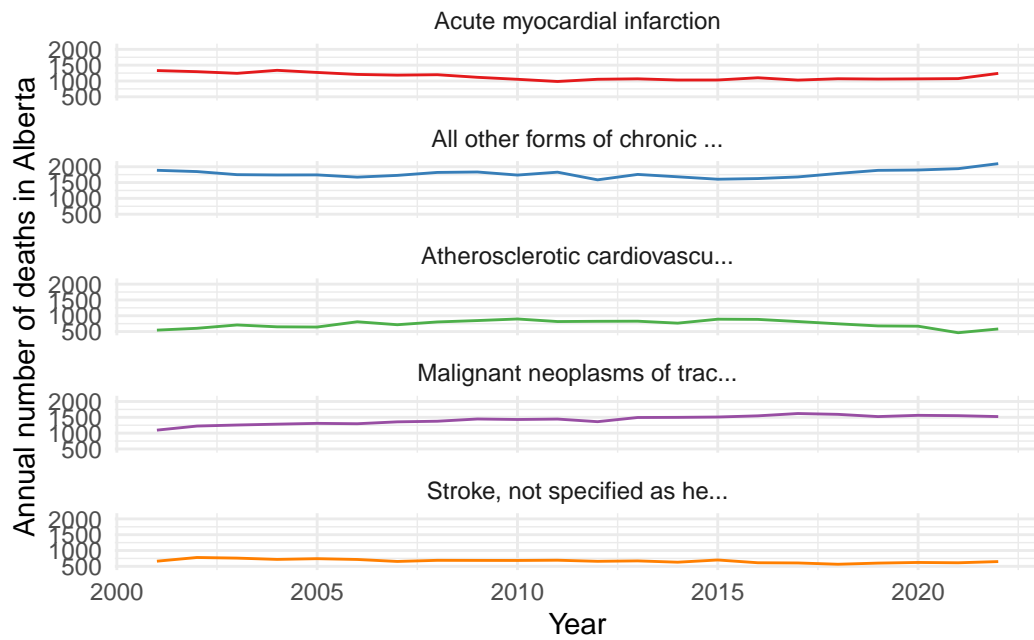
Year	Cause	Ranking	Deaths	Years
2003	All other forms of chronic ...	1	1,749	22
2003	Malignant neoplasms of trac...	2	1,257	22
2003	Acute myocardial infarction	3	1,242	22
2003	Stroke, not specified as he...	4	760	22
2003	Atherosclerotic cardiovascu...	5	709	22
2003	Other chronic obstructive p...	6	670	22
2003	Diabetes mellitus	7	455	22
2003	Malignant neoplasm of breast	8	419	22
2003	Other malignant neoplasms o...	9	394	16
2003	Malignant neoplasms of colon	10	364	22
2003	Malignant neoplasms of pros...	11	362	22
2003	Alzheimer’s disease	12	343	22
2003	Pneumonia due to other or u...	13	328	22
2003	Malignant neoplasms ofpancreas	14	294	10
2003	Organic dementia	15	281	22

aaa

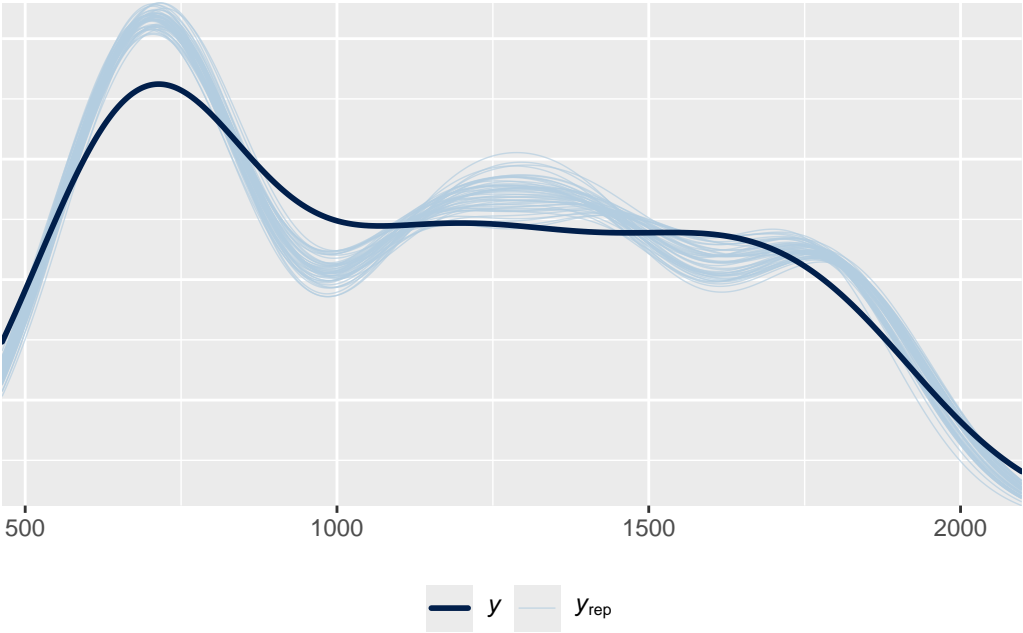
### 3 Result

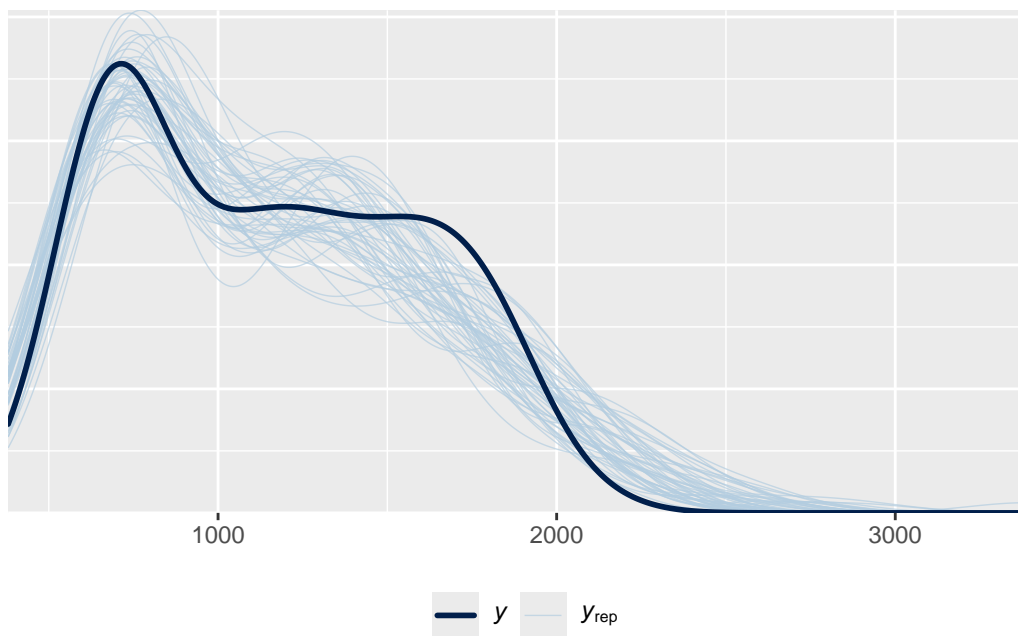
### 4 Discuss

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	Poisson	Negative binomial
(Intercept)	7.037	7.036 (0.038)
causeAll other forms of...	0.446	0.448 (0.052)
causeMalignant neoplas...	0.223	0.223 (0.052)
causeAtherosclero...	-0.436	-0.435 (0.054)
causeStroke...	-0.531	-0.531 (0.052)
Num.Obs.	110	110
Log.Lik.	-1080.186	-698.813
ELPD	-1110.6	-701.4
ELPD s.e.	88.6	4.6
LOOIC	2221.2	1402.8
LOOIC s.e.	177.2	9.2
WAIC	2221.5	1402.8
RMSE	109.33	109.34





	elpd_diff	se_diff
cause_of_death_alberta_neg_binomial	0.0	0.0
cause_of_death_alberta_poisson	-409.2	85.7

## 6 Reference