COVID-19 Outbreaks in Toronto*

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Abstract

COVID-19 has taken over the world for more than two years now. It is important to understand the measures that are being taken to explore the outbreaks throught the city. I have obtained and analyzed data from multiple COVID-19 outbreaks to compare the different variables and how they relate to eachother in different parts of the city. My findings can be used to identify circumstances in which outbreaks are less likely.

1 Introduction

First paragraph is motivational and broad.

Second paragraph is about what was done and what was found.

This paragraph about implications.

The remainder of this paper is: Section 2. R Markdown automatically makes the sections lower case and adds a dash to spaces to generate labels, for instance, Section 5.1.

2 Data

Paragraph or two introducing the dataset broadly.

Then show an extract of the dataset (Table 1).

```
## Warning: package 'knitr' was built under R version 4.1.2
```

Figure @ref(tab: childrengraph) shows the relationship between age and source of infection.

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*Code and data are available at: https://github.com/MohidSharif/COVID19_data_paper

Table 1: Outbreaks in Agincourt North

Source of Infection	Age Group	Gender
Travel	30 to 39 Years	FEMALE
Outbreaks, Other Settings	50 to 59 Years	FEMALE
Outbreaks, Congregate Settings	20 to 29 Years	MALE
Community	50 to 59 Years	MALE
Outbreaks, Other Settings	30 to 39 Years	MALE
Outbreaks, Healthcare Institutions	30 to 39 Years	FEMALE
Close Contact	30 to 39 Years	FEMALE
Outbreaks, Healthcare Institutions	19 and younger	MALE
Outbreaks, Healthcare Institutions	50 to 59 Years	FEMALE
Outbreaks, Healthcare Institutions	20 to 29 Years	FEMALE

Table 2: Outbreaks in York University Heights

Source of Infection	Age Group	Gender
Close Contact	20 to 29 Years	FEMALE
Outbreaks, Other Settings	20 to 29 Years	FEMALE
Outbreaks, Healthcare Institutions	50 to 59 Years	FEMALE
Outbreaks, Healthcare Institutions	60 to 69 Years	MALE
Outbreaks, Healthcare Institutions	30 to 39 Years	FEMALE
Outbreaks, Healthcare Institutions	50 to 59 Years	FEMALE
Community	20 to 29 Years	FEMALE
Community	20 to 29 Years	FEMALE
Community	20 to 29 Years	MALE
Outbreaks, Healthcare Institutions	50 to 59 Years	UNKNOWN

```
##
## Attaching package: 'gridExtra'

## The following object is masked from 'package:dplyr':
##
##     combine
```


Youth/Children infections

Elderly infections

count

Source of Infection

Male infections

count

Source of Infection

Female infections
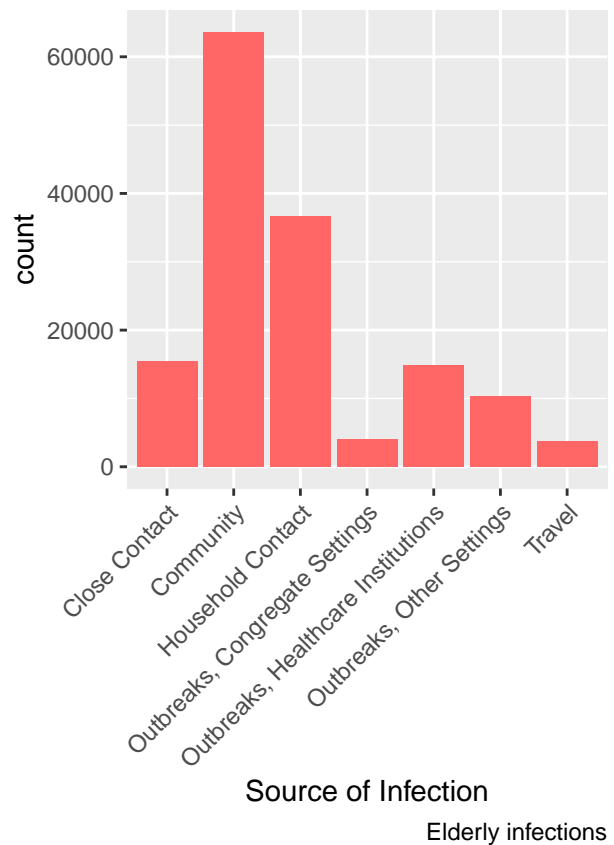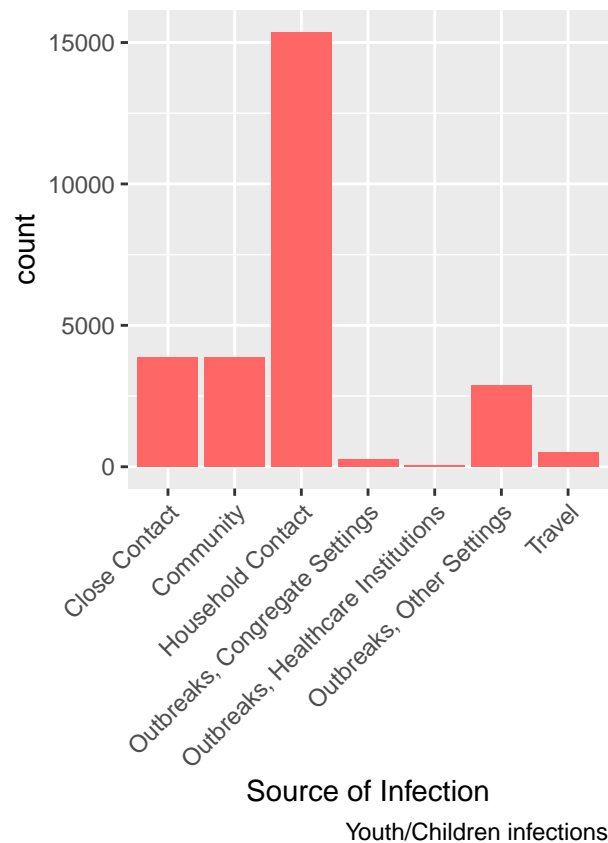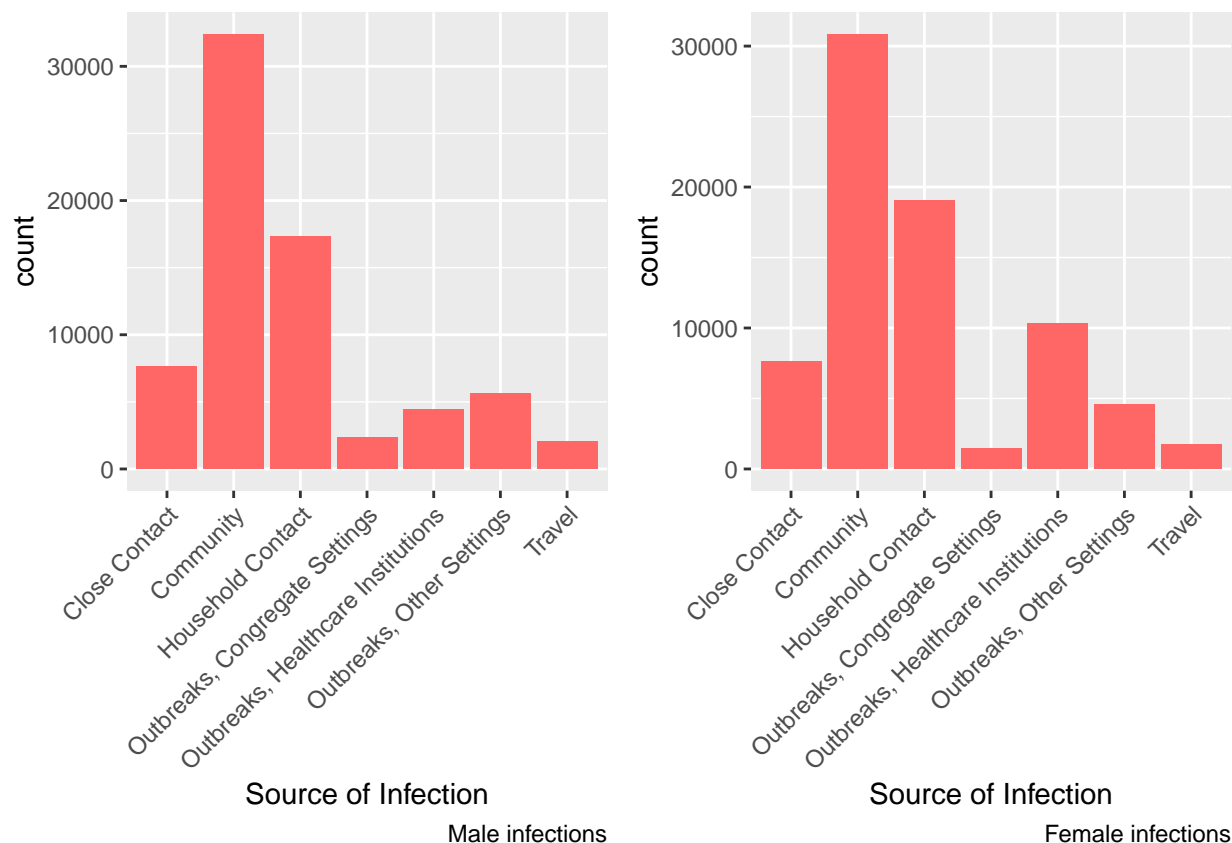
Talk more about it.

Also bills and their average (Figure 1). (Notice how you can change the height and width so they don't take the whole page?)

```
## Warning: It is deprecated to specify `guide = FALSE` to remove a guide. Please
## use `guide = "none"` instead.
```

Talk way more about it.

3 Model

$$Pr(\theta|y) = \frac{Pr(y|\theta)Pr(\theta)}{Pr(y)} \tag{1}$$

Equation (1) seems useful, eh?

Here's a dumb example of how to use some references: In paper we run our analysis in R (R Core Team 2020). We also use the `tidyverse` which was written by Wickham et al. (2019) If we were interested in baseball data then Friendly et al. (2020) could be useful.

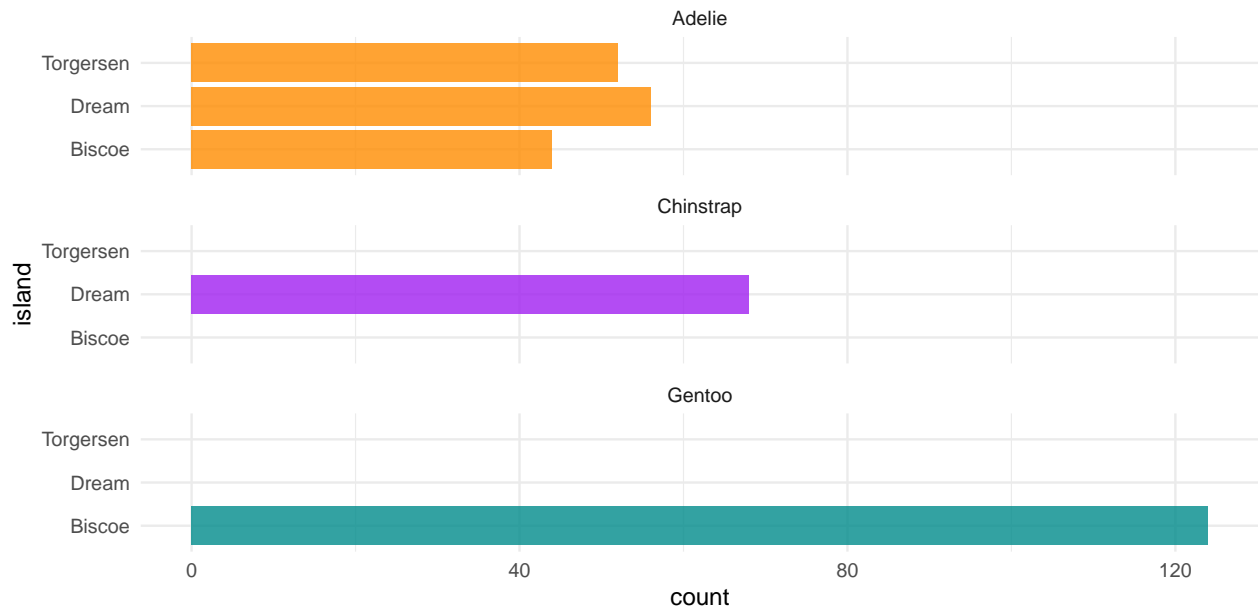We can use maths by including latex between dollar signs, for instance θ.

Figure 1: More bills of penguins

4 Results

5 Discussion

5.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

Appendix

A Additional details

References

Friendly, Michael, Chris Dalzell, Martin Monkman, and Dennis Murphy. 2020. *Lahman: Sean 'Lahman' Baseball Database.* https://CRAN.R-project.org/package=Lahman.

R Core Team. 2020. *R: A Language and Environment for Statistical Computing.* Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.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.