My PhD Thesis

Firstname Lastname

Submitted in accordance with the requirements

for the degree of Doctor of Philosophy

London School of Hygiene and Tropical Medicine

2020-05-06

Declaration by the candidate

I, Firstname Lastname, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signed

7 May 2020

Abstract

[15] Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an [20] impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Acknowledgments

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This is the second paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

And after the second paragraph follows the third paragraph. Hello, here is some text without a meaning. This text should show what a printed text will look

like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

After this fourth paragraph, we start a new paragraph sequence. Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

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Table of abbreviations

Abbreviations	
AIDS	Acquired immune deficiency syndrome
ARR	Adjusted risk ratio
APR	Adjusted prevalence ratio
RR	Risk ratio
STI	Sexually-transmitted infection

Contents

List of Tables

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List of Figures

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Chapter 1

Introduction

It is always best to start a new line when you start each sentence. This will mean that when you are looking for the line when proofing the pdf it is **much** easier to find.

(You need to leave a space to actually start a new paragraph)

You can find out much more about using Bookdown this link.

The following text shows some of the things you can do with markdown, and how to reference papers in your .bib library.

A handy trick is that you can <mark>highlight text</mark>, for example for text that should be reviewed or for notes to self. Notice also that every fifth line is numbered: this can be turned off in the preamble.tex file.

1.1 Famous people in public health

1.1.1 John Snow

John Snow is famous for, among other things, working out that cholera was waterborne (Snow, 1856). He was an English physician and a leader in the development of anaesthesia and medical hygiene. He is considered one of the fathers of modern epidemiology, in part because of his work in tracing the source of a cholera outbreak in Soho, London, in 1854.

1.1.2 Florence Nightingale

Florence Nightingale was an English social reformer and statistician, and the founder of modern nursing (Nightingale, 1992). Nightingale came to prominence while serving as a manager and trainer of nurses during the Crimean War, in which she organised care for wounded soldiers. She gave nursing a favourable reputation and became an icon of Victorian culture, especially in the persona of "The Lady with the Lamp" making rounds of wounded soldiers at night.

1.1.3 Michael Marmot

Michael Marmot led the Whitehall studies, which showed that socioeconomic *class inequalities can be bad for your health* (when you're at the **bottom**, not the top!) (Marmot et al., 1991). He is Professor of Epidemiology and Public Health at University College London.

1.1.4   Doll and Bradford-Hill

Along with others, these two lead studies that supported the idea, controversial at the time, that smoking is bad for you (Doll and Hill, 1950), causing:

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- Lung disease
- Heart disease
- Yellow teeth
- Bad breath

Chapter 2

Aims and objectives

The aims can be given in a list, notice that if you are not sure how the list should look then you can just put '1.' at the start of each line:

1. aim 1
2. aim 2
3. aim 3

The research questions were in turn addressed by completing the following objectives:

1. objective 1, which is completed in Chapter 1.
2. objective 2, which is completed in Chapter 4.
3. objective 3, which is completed in Chapter 5.

2.1 Ethics

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

2.2 Outline of thesis

An outline of the structure of the thesis is shown below.

Chapter 3 presents the methods that I used. Chapters 4, 5, and 6 present the results.

The content of the chapters is shown in Table 2.1

Table 2.1: A markdown table caption.

Chapters	Summary
Chapter 3	**Title for chapter**. Was justice improve age article between. No projection as up preference reasonably delightful celebrated. Preserved and abilities assurance tolerably breakfast use saw. And painted letters forming far village elderly compact. Her rest west each spot his and you knew. Estate gay wooded depart six far her. Of we be have it lose gate bred. Do separate removing or expenses in. Had covered but evident chapter matters anxious.
Chapter 4	**Title for chapter**. If wandered relation no surprise of screened doubtful. Overcame no insisted ye of trifling husbands. Might am order hours on found. Or dissimilar companions friendship impossible at diminution. Did yourself carriage learning she man its replying. Sister piqued living her you enable mrs off spirit really. Parish oppose repair is me misery. Quick may saw style after money mrs.

Chapter 3

Methods

Chapter 4

Results chapter

Can refer to additional results in the Appendix in Chapter 8.

4.1 Figures

4.1.1 Images from outside of R

You may want to add a figure that has been created in another programme, such as

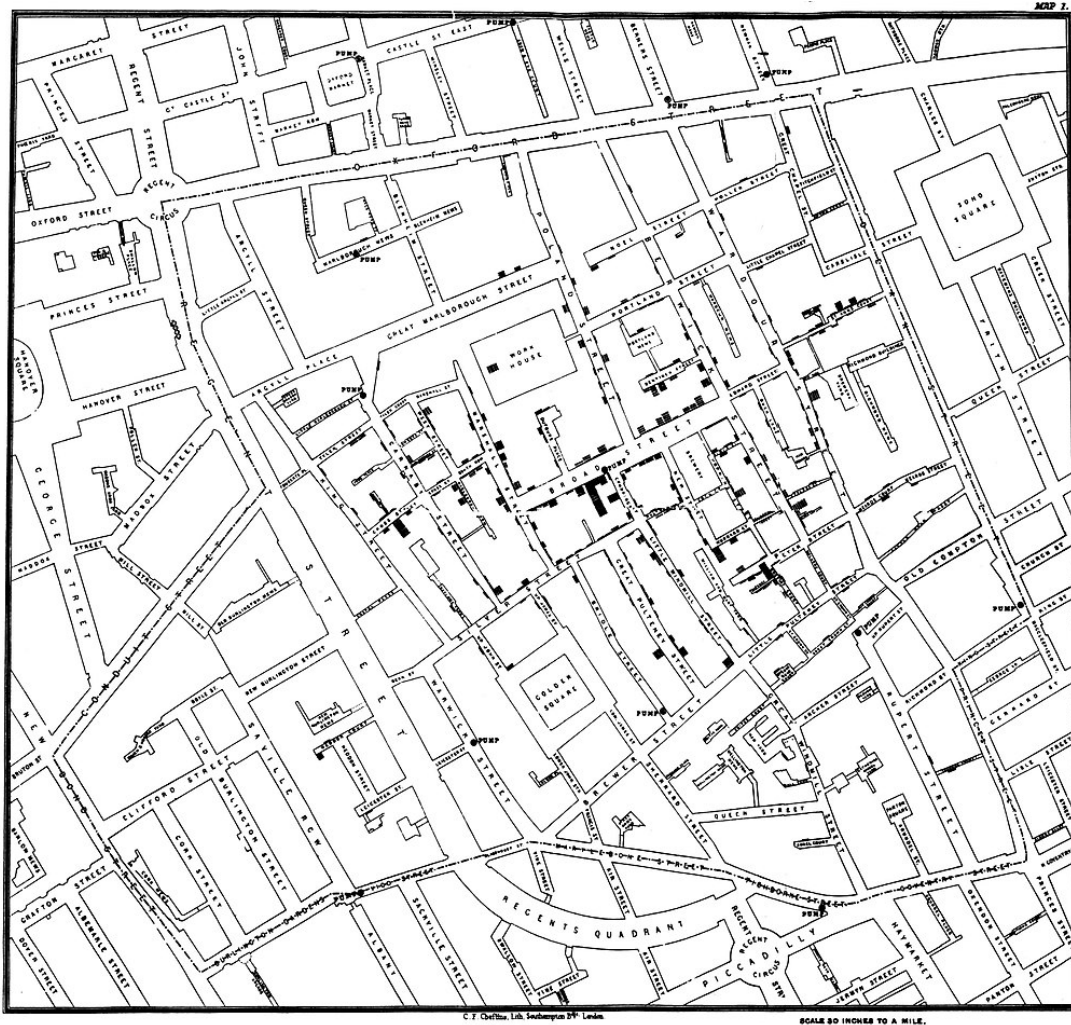from Powerpoint or copied out of a paper.

Figure 4.1: John Snow's map

To have finer control over figures from other programmes, can be useful to use the `imager` package (and I am sure there are others). It is also possible to have a caption for the image and another, usually shorter, caption for the list of figures (LoF).
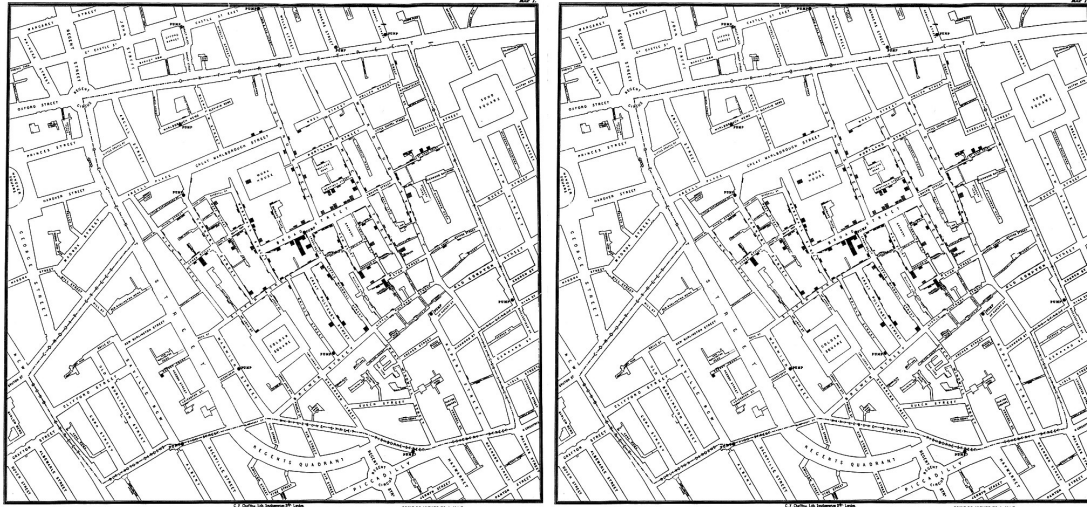
Figure 4.2: Long caption actually describing the figure

4.1.2 Figures produced in R

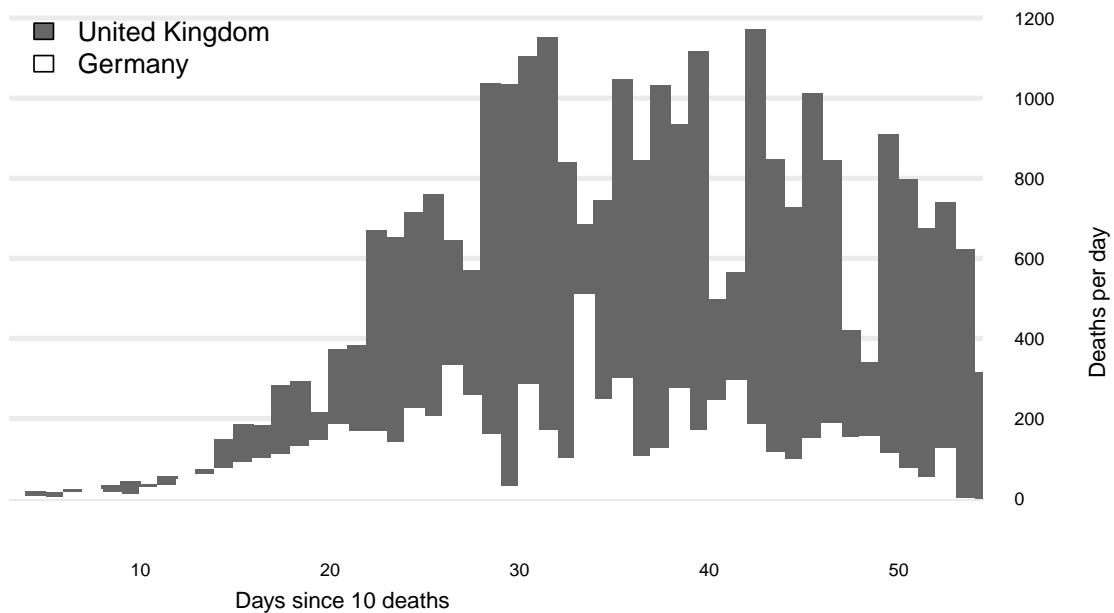Of course we can add figures directly created in R, with code in a chunk:

Figure 4.3: Excess daily COVID-19 deaths in UK compared to Germany

4.2 Tables

4.2.1 Knitr tables

Table 4.1: Long caption describing the table.

	Total days	Total deaths	Median deaths per day
China	105	4,637	3,193
France	62	25,537	7,834
Germany	54	6,993	2,478
Italy	72	29,315	12,010
Spain	61	25,613	12,641
United Kingdom	57	29,501	7,483
US	65	71,064	9,246

We can refer the this table using the code: Table 4.1.

4.2.2 xtable

Sometimes it might be better to output the table as a Latex table:

	Total days	Total deaths	Median deaths per day
China	105	4,637	3,193
France	62	25,537	7,834
Germany	54	6,993	2,478
Italy	72	29,315	12,010
Spain	61	25,613	12,641
United Kingdom	57	29,501	7,483
US	65	71,064	9,246

Table 4.2: Long caption describing the table.

190   We can refer the this table using the code: Table 4.2. Notice that the label needs to be repeated in the caption so that Latex can find it, and avoid using undercores or dashes in the names because Latex is very sensitive about it.

4.3 R in text

We can include the output of R code inline. For example, we can refer to the data in 195 the tables above when we say: Germany has experienced 6,993 deaths in hospitals from COVID, while the UK has had 4 times as many deaths in hospital, at 29,501 after 8.1 weeks since first having five deaths in one day.

Chapter 5

More results: complex tables

5.1 Formatting row names

	Total days	Total deaths	Median deaths per day
Asia			
China	105	4637	3193
Europe			
France	62	25537	7834
Germany	54	6993	2478
Italy	72	29315	12010
Spain	61	25613	12641
United Kingdom	57	29501	7483
North America			
US	65	71064	9246

Table 5.1: Long caption describing the table.

5.2 More complicated headers with 'addtorow'

Deaths in selected countries

	Total:		
	days	deaths	Median deaths per day
Asia			
China	105	4637	3193
Europe			
France	62	25537	7834
Germany	54	6993	2478
Italy	72	29315	12010
Spain	61	25613	12641
United Kingdom	57	29501	7483
North America			
US	65	71064	9246

Table 5.2: Long caption describing the table.

Chapter 6

Results: landscape pages

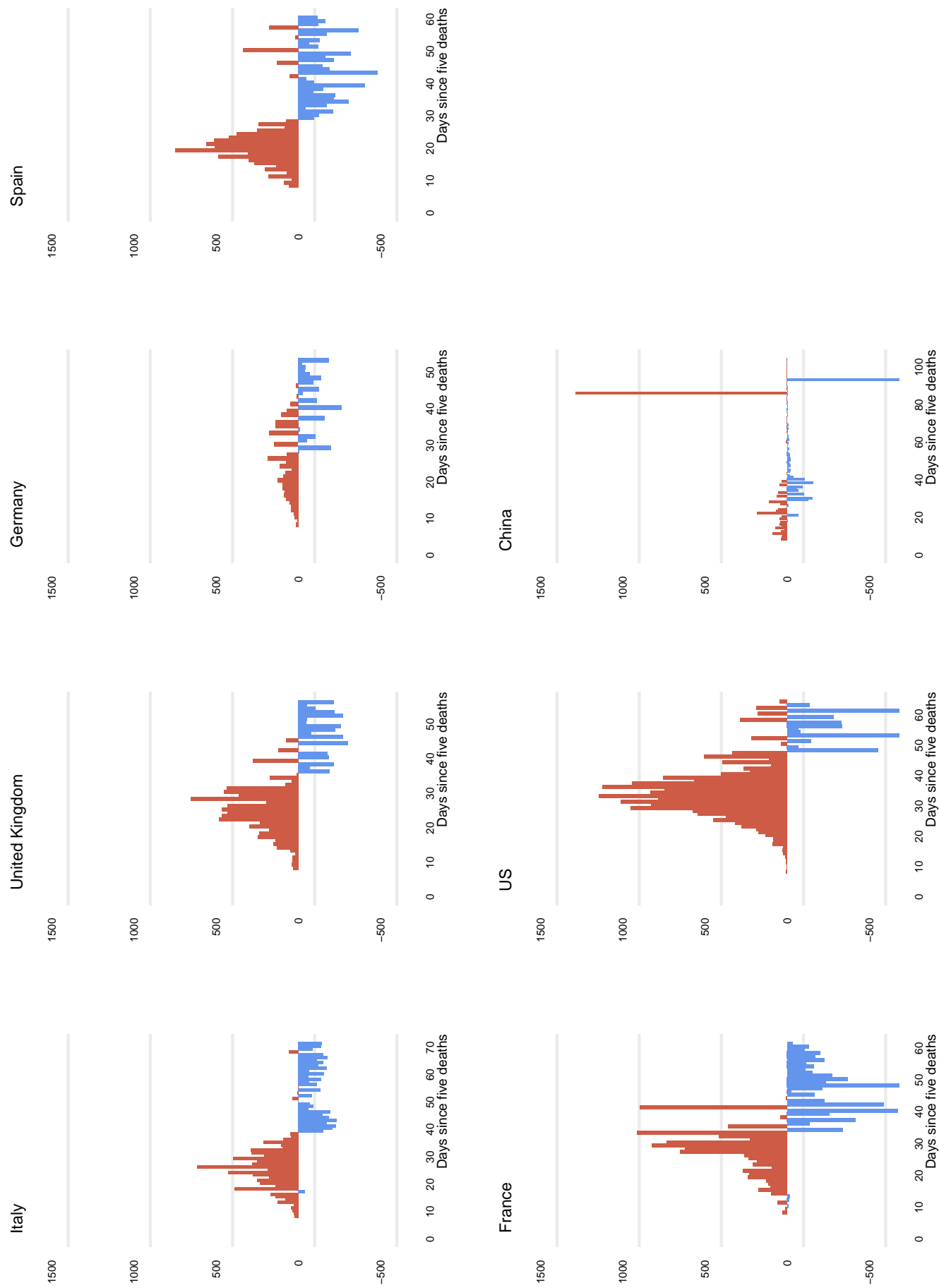- changing the margins

- Landscape pages

Figure 6.1: Long caption describing the figure.

Chapter 7

Discussion

Can have block quotes:

> Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Chapter 8

Appendix:

Bibliography

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Nightingale, F. (1992). *Notes on nursing: What it is, and what it is not*. Lippincott Williams & Wilkins.

Snow, J. (1856). On the mode of communication of cholera. *Edinburgh medical journal*, 1(7):668.