

# Difference in Differences

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# What causes cholera?

- ▶ Medical field oblivious as to how cholera is transmitted in 1800s
- ▶ Majority – microscopic particles floating through the air
  - ▶ quarantining and isolation did not help
- ▶ John Snow, physician, believed that cholera transmitted through air
  - ▶ through empirical evidence, changed his mind, and others
  - ▶ WATER !!

# Snow's Theory

1. living organism
2. interact with passed water
3. mixed with drinking water
4. contaminate water in Thames river
5. people drink contaminated water
6. cycle repeats

# How to get to the truth and provide evidence?

- ▶ Two major water companies in London in 1800s
  - ▶ Southwark and Vauxhall (SV)
  - ▶ Lambeth
- ▶ Both of these water companies received water from a similar location of Thames
  - ▶ mixed with sewage and other waste
- ▶ In 1852, Lambeth changed their source
  - ▶ upwards, which avoided sewage of London
- ▶ Districts that receive water from Lambeth also receive water from SV

## Two approaches

1. Compare closeby districts – just from SV vs. Lambeth and SV.
2. Focus on districts that receive water from both SV and Lambeth. Compare households that receive water from Lambeth vs. SV

**outcome variable: count of cholera related mortality**

source	cholera1849	cholera1854	change
SV only	2261	2458	197
SV and Lambeth	3905	2547	-1358
Lambeth only	162	37	-125