



FOR 2012, focus on highlighted Qs  
ie skip Q4 and Q8.

EPIB-609: ASSIGNMENT: "On the mode of communication of cholera" (v2011.09.19)

The purposes of this exercise are to (i) become familiar with the 19th century work of Farr, Snow, and Koch and (ii) reflect on several issues regarding Snow's work raised in this century by geographers Koch and Denike. When addressing the following questions, consider whether (i) Snow, in his treatment of the South London data, adequately dealt with the 'spatial' issue (ii) Koch and Denike's 'data' are accurate and their methods are appropriate and helpful, and (iii) if we rework Snow's and Simon's data using 'modern' statistical methods for the control of confounding, we might obtain different answers from the tighter 'spatial' comparisons.

1. Consult Farr's 1852 Report and list his conclusions as to the mode(s) of communication/transmission of cholera.
2. Find and describe the equation Farr derived to describe the relation between mortality rates and elevations. How might you have fitted this model with today's statistical technology?
3. Describe how the Appendix in the 1855 version of Snow's book differs from that in the version published in 1935 (W.H. Frost, Editor). [The Health Sciences library at McGill has both versions, but -- because of its frail condition -- the original is only available for consultation by special arrangement]. Which version was used in the UCLA website? the Michigan State website? *you don't have to consult it in-vivo (there are electronic copies!)*
4. Examine and briefly describe the contents of the maps in Snow's 1855 book.
5. Leave aside Snow's account --in that book -- of the Broad Street investigation, and focus on the lesser-known "grand experiment" as he (first) described it -- in the latter portion of the book.
  - (i) Make a table showing each company's water source in 1848-1849 and in 1854.
  - (ii) Starting from "The new water supply of the Lambeth Company", examine and describe the numerators and (if applicable) the denominators for tables VII to XII, and the sources for these (the source for the numerators in Table VII is not the same as that for subsequent tables). Locate any rate ratios or rate differences reported in the text.
6. What additional information is provided in Snow's 1856 paper? How do his more refined tables compare with those in the report by Simon?
7. Give two reasons why Snow focused on the first 4 (or 7) weeks of the epidemic.
8. Comment on the quality, clarity and usefulness of Koch and Denike's work.
  - . Begin with the care with which (in Figs 1,2) they transcribed Snow's column headings and counts.
  - . Describe their main criticism of Snow's data-analysis.
  - . What's the purpose of the paired t-test results in Fig5?
  - . Try to explain what they did to get the numbers in their Figs 6 and 7.
  - . Can you see any problems with any of the entries in the 'EBE' columns in their Fig 6?
  - . In the end, how different are their findings from those of Snow?
9. Apply modern-day 'confounding control' (and teamwork) to the data in Table V of Snow1856 and Table V of Simon1856. How much do the rate ratios/differences change?
10. Did Farr ever 'come onsite' ? [See Eyler and others]
11. Who is the relevant 19th century Koch? What and when was his contribution?

URL: [www.epi.mcgill.ca/hanley/temp](http://www.epi.mcgill.ca/hanley/temp)  
Hand in your answers at the beginning of class on September 26, 2011.