Welcome to the second lecture titled the Historical Development of Epidemiology

Your book provides an overview of the history of epidemiology. I am not going to review the materials in detail in this lecture but I want to give some highlights. I believe in using history to better understand the present and as such I am not interested in you memorizing dates but rather in you understanding the context and richness of epidemiological history. Sometimes in looking at history, I am reminded of the choice you make when you travel to a foreign country. Should you spend a lot of time in one location so you get to know it or should you travel to many different places to see as much as possible? The book gives you a general overview and our history assignment will do that as well, but I also want to stop at one very important site and spend a little time there, the important work of John Snow.

Cholera has caused epidemics for many years and it is still a great concern, especially in places with inadequate sanitation and crowded situations. But we are going to look back to cholera in the early 1800s. Symptoms of cholera included nausea, dizziness, violent vomiting, diarrhea, extreme muscle cramps, insatiable thirst. This disease resulted in severe dehydration that could lead to cardiovascular collapse and death.
At the time of the cholera epidemic, the bacterium had not yet been identified and people had a number of hypotheses about how it was spread including person to person exposure as well as through miasmas which are mysterious vapor from swamps, cemeteries or cesspools. You can imagine this was a very scary time.

John Snow was a London physician who treated poor people and developed and tested a different hypothesis about cholera. He did this using a systematic approach. He evaluated the water supply to determine if this was the cause of cholera.

John Snow looked at the water source from each of the three companies, identified the underlying population for each water source (the denominator) and identified the number of deaths in each of the three areas. He then calculated the number of deaths (numerator) per 10,000 houses (denominator) for each area. These calculations clearly showed the death rate was higher in homes who received water from Southwark and Vauxhall.
This slide shows the significance of Dr. Snow’s work.
• He proposed a new hypothesis for how cholera was transmitted based on observation & reason.
• He tested the hypothesis by collecting data systematically & comparing groups of people.
• He established an association between certain (contaminated) drinking water and getting cholera.
• He argued for an intervention to prevent more cases.
• We now know that cholera is transmitted by a bacterium, Vibrio cholera which is transmitted by ingestion of water or food contaminated by sewage.

Here is a link to a TED video on cholera by Stephen Johnson. If you are not familiar with TED lectures I would suggest you spend some time viewing the site. There are a series of lectures on many topics, and they are generally very well done. We will be using a number of them this semester. I think you will find this first lecture very interesting.

Clearly, infectious diseases are still an open book.

Here are photos of the John Snow pub located in London. Originally built in 1870, it was renamed after John Snow in 1955 to celebrate 100 years of his famous research.