

Maps in the Time of Cholera Epidemics

In **medical geography**, mapping the distribution of a disease is the first step to finding its causes. In 1854, Dr. John Snow, a noted anesthesiologist in London, mapped cases of cholera in London's Soho District. Cholera is a term used to denote a set of diseases in which diarrhea and dehydration are the chief symptoms.

Cholera is an ancient disease and was confined to India until the beginning of the nineteenth century. In 1816 it spread to China, Japan, East Africa, and Mediterranean Europe in the first of several **pandemics**, a worldwide outbreak of the disease. This initial wave abated by 1823, but by then the very name cholera was feared throughout the world, for it had killed people everywhere by the hundreds, even thousands. Death was horribly convulsive and would come in a matter of days, perhaps a week, and no one knew what caused the disease or how to avoid it.

Soon a second cholera pandemic struck. It lasted from 1826 to 1837, when cholera crossed the Atlantic and attacked North America. During the third pandemic, from 1842 to 1862, England was severely hit, and cholera again spread into North America.

When the pandemic that began in 1842 reached England in the 1850s, cholera swept through the Soho District of London. Dr. Snow mapped the Soho District, marking all the area's water pumps—from which people got their water supply for home use—with a P and marking the residence of each person who died from cholera with a dot. Approximately 500 deaths occurred in Soho, and as the map took shape, Snow noticed that an especially large number of those deaths clustered around the water pump on Broad Street. At the doctor's request, city authorities removed the handle from the Broad Street pump, making it impossible to draw water there. The result was dramatic: almost immediately the number of reported new cases fell to nearly zero. Snow's theory about the role of water in the spread of cholera was confirmed.

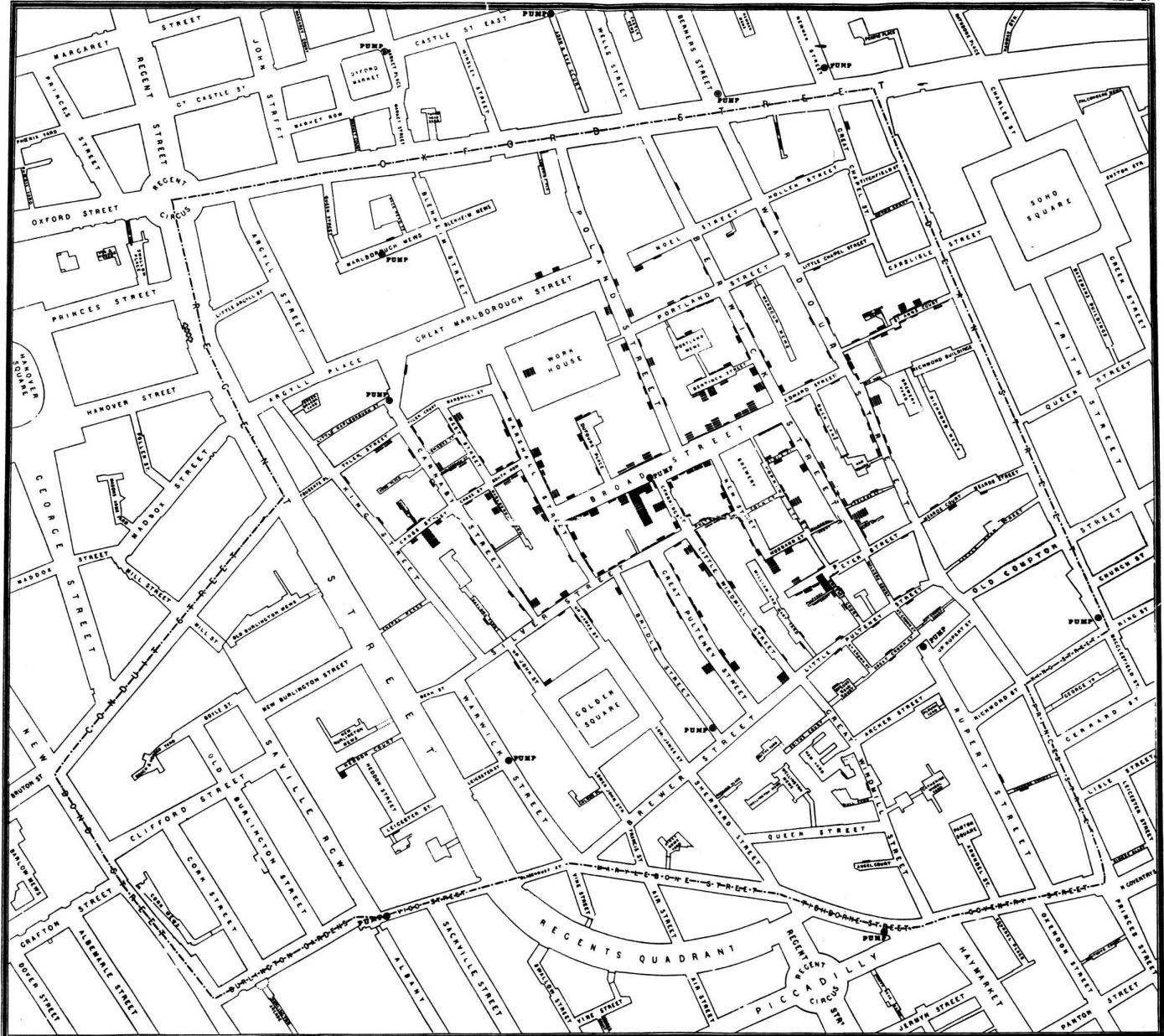
Dr. Snow and his colleagues advised people to boil their water, but it would be a long time before his advice reached all those who needed to know, and in any case many people simply did not have the ability to do so.

Cholera has not been defeated completely, however, and in some ways the risks have been rising in recent years rather than falling. In the teeming shantytowns of the growing cities of the developing world, and in the refugee camps of Africa and Asia, cholera remains a threat. Until the 1990s, major outbreaks remained few and limited (after remaining cholera-free for a half century, Europe had its first reappearance of cholera in Naples in 1972), and Africa reported most cases. But an outbreak in the slums of Lima, Peru, in December 1990 became a fast-spreading **epidemic** (regional outbreak of a disease) that, though confined to the Americas, touched every country in the hemisphere, infected more than 1 million people, and killed over 10,000.

Hygiene prevents cholera, but contaminated water abounds in much of the tropical world's cities. A cholera vaccine exists, but it remains effective for only six months, and it is costly. Dr. Snow achieved a victory through the application of geographical reasoning, but the war against cholera is not yet won.

The fruits of geographical inquiry were life-saving in this case, but they typically go further in life-understanding. Geographers want to understand why people do different things in different places and how the relationship between people and the physical world varies across space.

1. BEFORE YOU READ – look at the title and examine the map on the back. From this, formulate 3 questions that you as a Human Geographer would want to know.
2. List the steps that Dr. Snow took in solving the cholera problem in London.
3. What course of action would you suggest city officials take when presented with Dr. Snow's map.
4. Research the spread of specific diseases, for example, AIDS, smallpox, malaria, or typhoid from Goode's Atlas. Then describe the spread over time of diseases.



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SCALE 30 INCHES TO A MILE.