

Data analysis and storytelling

In 1854, there was an outbreak of cholera in central London:

The most terrible outbreak of cholera which ever occurred in this kingdom, is probably that which took place in Broad Street, Golden Square, and adjoining streets, a few weeks ago. Within two hundred and fifty yards of the spot where Cambridge Street joins Broad Street, there were upwards of five hundred fatal attacks of cholera in ten days. The mortality in this limited area probably equals any that was ever caused in this country, even by the plague; and it was much more sudden, as the greater number of cases terminated in a few hours. The mortality would undoubtedly have been much greater had it not been for the flight of the population. Persons in furnished lodgings left first, then other lodgers went away, leaving their furniture to be sent for. . . . Many houses were closed altogether owing to the death of the proprietors; and, in a great number of instances, the tradesmen who remained had sent away their families; so that in less than six days from the commencement of the outbreak, the most afflicted streets were deserted by more than three-quarters of their inhabitants.²

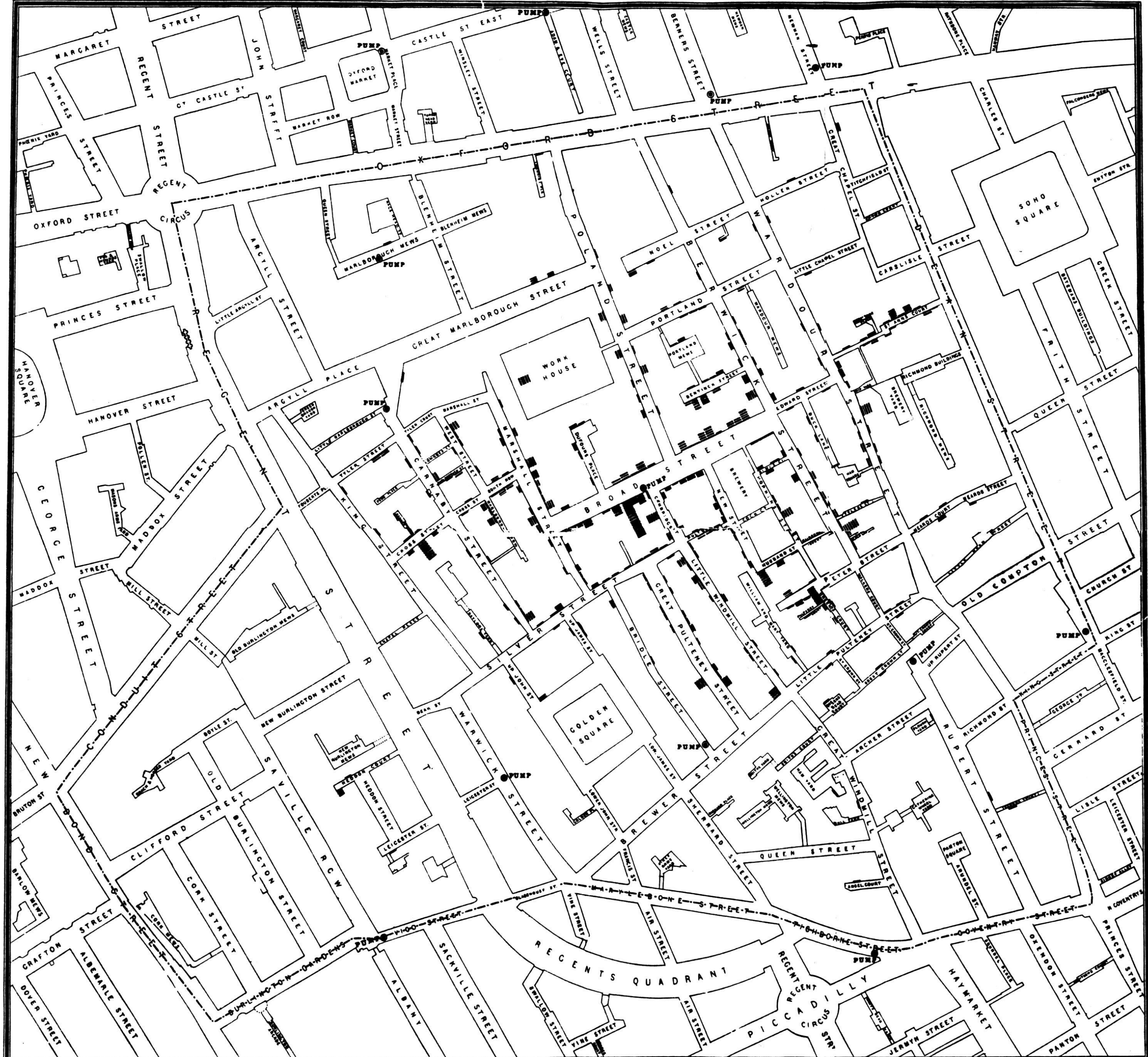
John Snow, *On the Mode of Communication of Cholera*, 1855

The outbreak began on the evening of 31 August 1854.

John Snow, who investigated earlier epidemics, suspected the water from a community pump-well at Broad and Cambridge Streets was contaminated.

However, he couldn't reach any definitive conclusion from looking at the water.

He obtained a list of 83 cholera deaths from the General Register Office and plotted them on a map.

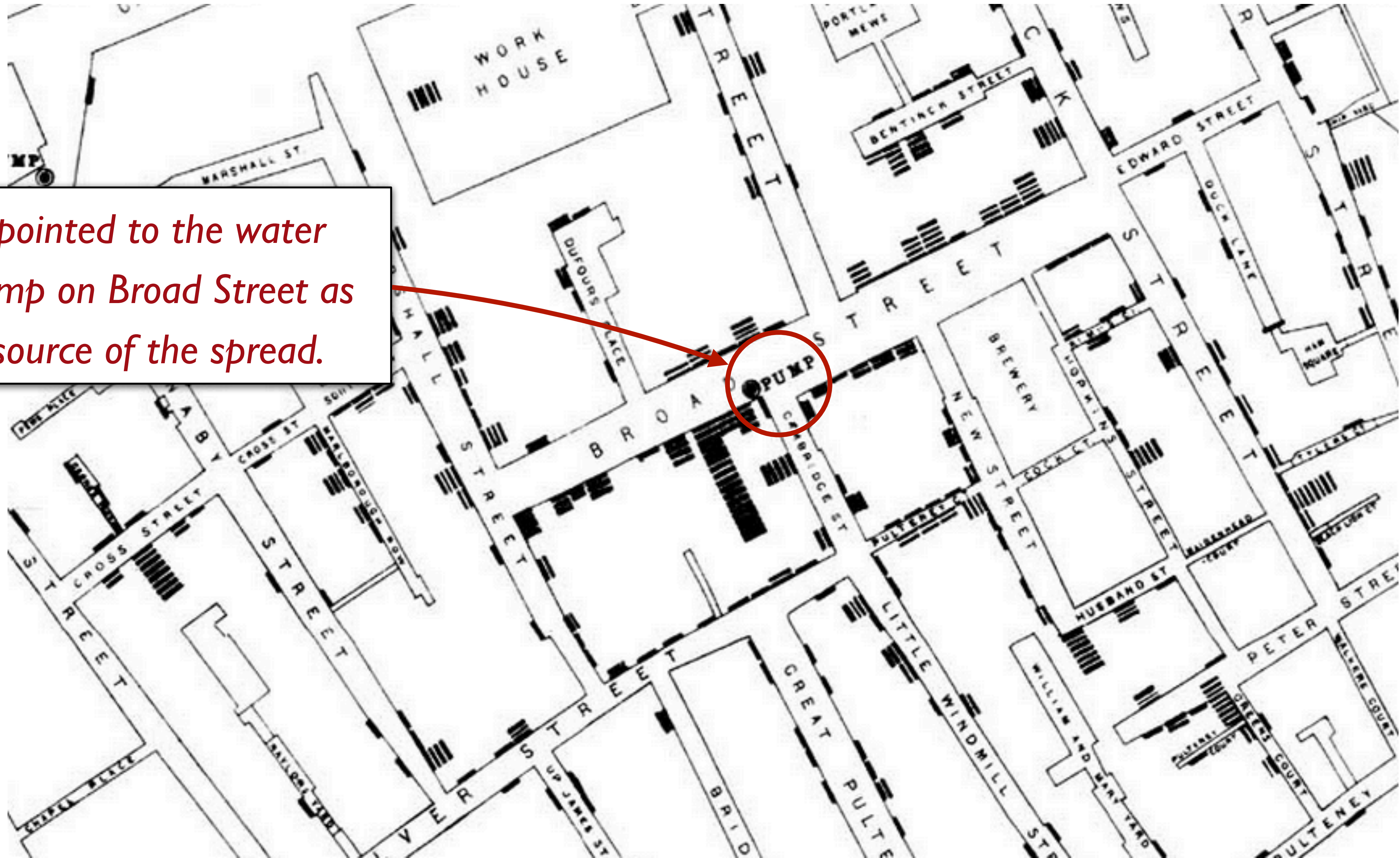


On proceeding to the spot, I found that nearly all of the deaths had taken place within a short distance of the pump. There were only ten deaths in houses situated decidedly nearer to another street pump. In five of these cases the families of the deceased persons informed me that they always sent to the pump in Broad Street, as they preferred the water to that of the pump which was nearer. In three other cases, the deceased were children who went to school near the pump in Broad Street. Two of them were known to drink the water; and the parents of the third think it probable that it did so. The other two deaths, beyond the district which this pump supplies, represent only the amount of mortality from cholera that was occurring before the irruption took place.

With regard to the deaths occurring in the locality belonging to the pump, there were sixty-one instances in which I was informed that the deceased persons used to drink the pump-water from Broad Street, either constantly or occasionally. In six instances I could get no information, owing to the death or departure of every one connected with the deceased individuals; and in six cases I was informed that the deceased persons did not drink the pump-water before their illness.⁴

John Snow, *On the
Mode of
Communication of
Cholera, 1855*

This map pointed to the water from a pump on Broad Street as the likely source of the spread.



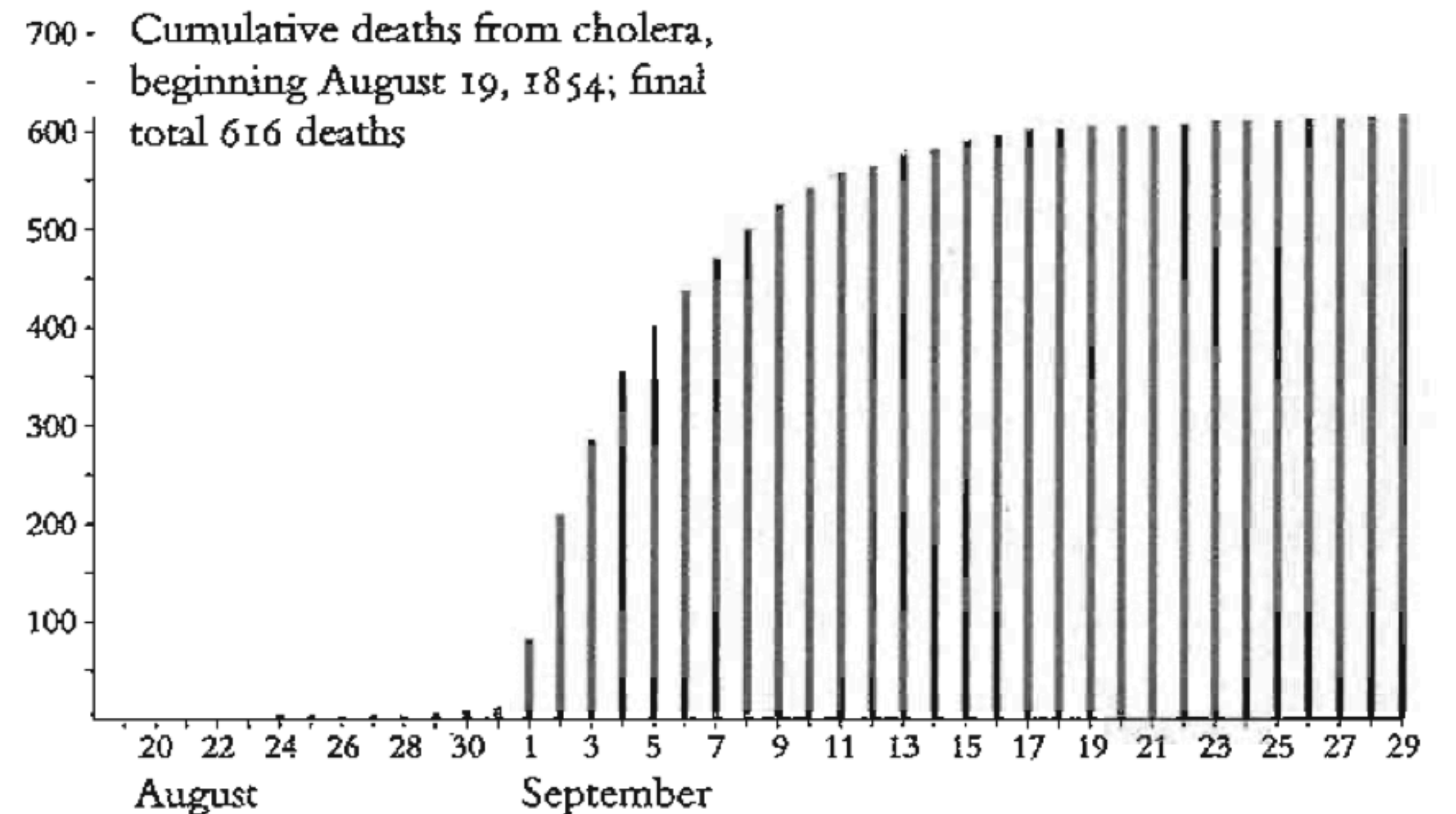
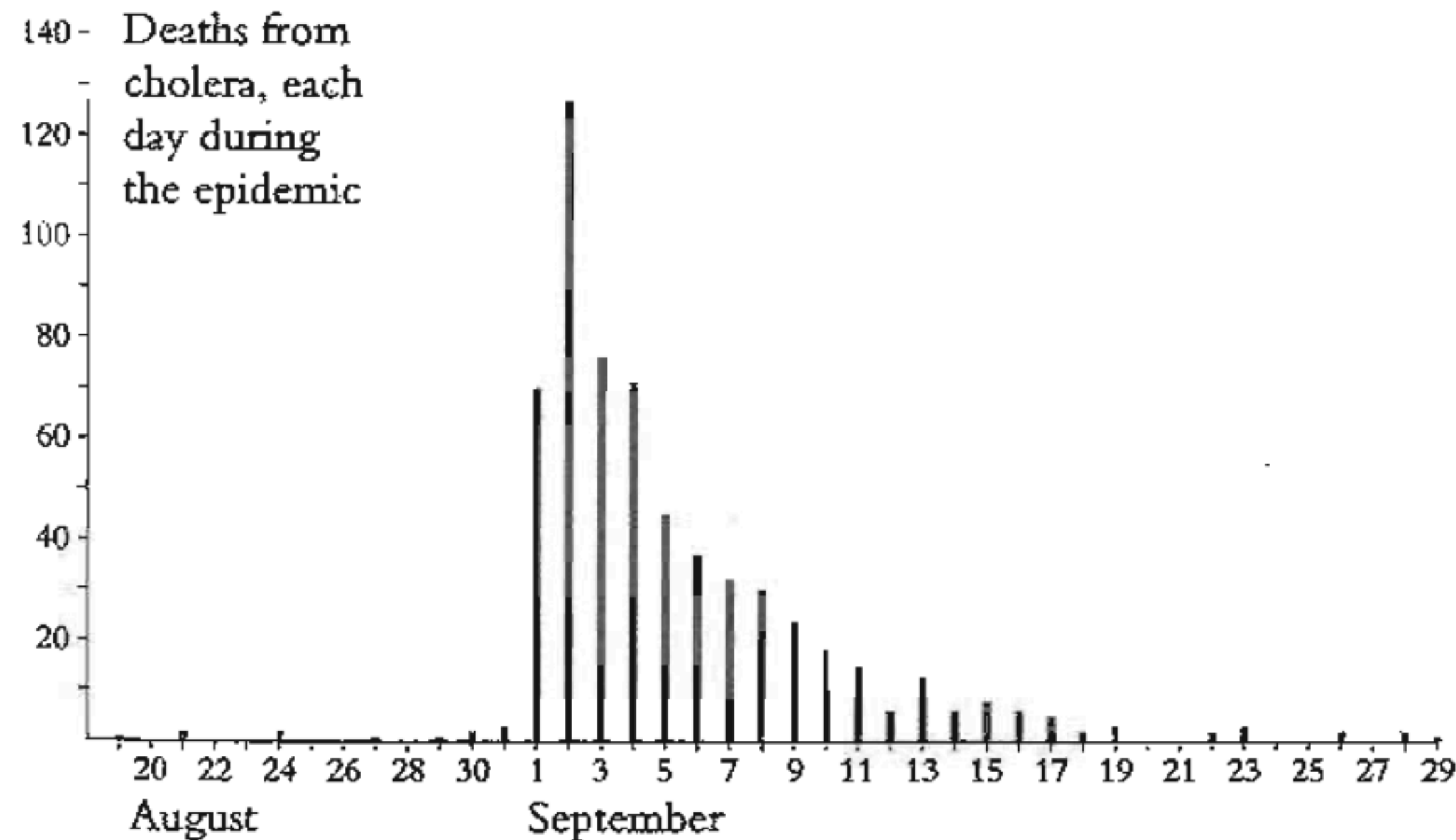
It was time to act.

Snow described his findings to the Board of Guardians of St James's Parish, who were responsible for the water supply.

The Board ordered the pump-handle be removed immediately, and the epidemic soon ended.

The original data Snow obtained listed the victims' names and described their circumstances, in order by date of death.

The obvious visualization would be a time series – a display of the progress of the epidemic, either daily or cumulative:



These visualizations would have been practically useless in discovering a strategy for stopping the epidemic.

They can, however, show that removing the pump handle may have been done too late to “save the day”. The epidemic was already in decline:

