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*Puzzles in the Patterns of Plagues*

Over the last century, there has been tremendous progress in understanding the transmission of infectious diseases in human populations. However, most historical outbreaks have not been studied in detail because data that might permit such investigations are buried in thousands of handwritten records. In recent years, my research group has digitized a large number of these historical records and begun to dissect the epidemic patterns. Modern computers allow us to visualize these patterns, and mathematical methods are helping us unravel the biological mechanisms that gave rise to the outbreaks. I will discuss our ongoing work, focussing primarily on outbreaks of plague, from the Black Death in the 14th century to the Great Plague of London in the 17th century.