Public Abstract
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Anthropology
Agent-based Modeling of Seasonal Population Movement and the Spread of the 1918-1919 Flu: The Effect on a Small Community
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A new agent-based, computer simulation technique was developed to study the spread of a flu epidemic through a small community. By using this simulation approach, a landscape can be created and populated with a group of agents who move and interact in ways that more closely resemble human behavior than is usually seen in other modeling techniques. Historical information from the Norway House community in Manitoba, Canada, during the 1918-1919 flu epidemic, was used to create a model of the epidemic. The results of the study demonstrate that seasonality in travel and population distribution influence the spread of the flu epidemic. In the summer, when the people are congregated around the fort, the epidemic is short and intense. In the winter, when the people are dispersed on the land, the epidemic is longer and less intense.

This type of research expands our knowledge of how epidemics spread through communities under different conditions. Information about the spread of infectious diseases during an epidemic can be used to improve current public health policies at the local, national, and international levels.