GEOGRAPHY AND ADULT MORTALITY FROM THE SPANISH FLU
How location affected death rates across Canada and the World
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The Spanish Flu often infected and killed many young, and otherwise healthy, adults. Typically, the flu exacts its heaviest toll on the very young and the very old, i.e., those who haven’t had the time to develop immunities, and those whose health may already be in decline. As such, the curve on a graph demonstrating flu mortality rates is normally U shaped. With the Spanish Flu, the curve more resembled a W.

Many different factors contribute to the deadliness of any given flu outbreak, but the Spanish Flu’s impact on young adults has consistently raised questions for researchers. There are several possible contributing factors: a lack of immunity among those under 30 for that specific flu strain, as well as increased immunity in those over 30 thanks to prior exposure. Yet geography is one frequently overlooked factor. How did a community’s distance from urban centres and routes of travel affect the mortality rates in the community? Often, the more remote a community was, the higher its death rate. This means that across Canada, rural communities, and especially Indigenous communities, were affected on a much larger scale than white, urban populations.

Not only was the death rate markedly higher; the W-shaped curve that characterizes the broader population had shifted as well. Mortality remained high among all adults, not simply the young and the old. The reason? Likely because geographic isolation meant less contact with milder flu strains that would have built up immunity in the population. This phenomenon, known as “herd” immunity, plays a crucial role in preventing serious outbreaks of communicable diseases. In small and remote populations, however, it is more difficult to develop immunities that help to protect the more vulnerable members of the community.

Generally, isolated communities around the world fared worse than their urban counterparts during the epidemic. For instance, Inuit settlements in Alaska and Labrador, as well as Aboriginal communities in rural Australia, fared the worst among European, North American, and Oceanic countries. Their death rates ranged between 50% and 90%. Even in less remote locations, First Nations communities in Canada suffered higher...
mortality rates than urban populations (3% overall mortality compared to the urban average of 0.6%).

The Inuit population in Labrador was a particularly tragic example of how geographical remoteness led to high mortality among the adult population. Okak and Hebron, two isolated villages in Labrador, had death rates of 78.7% and 68.2% respectively - a horrific mortality rate by any standard, and particularly shocking when compared to the Canada-wide rate of 0.6%. The only Inuit survivors in these communities were a handful of children aged 5-14 years.

In the case of Okak, death arrived on November 4th, 1918 aboard the Harmony, a supply ship that visited the village twice a year (Higgins 2007). Three days after the ship was triumphantly greeted, as they always were, by the Moravian church band on the dock, the population of Okak began to fall ill. Within five days eight people had died, and within two weeks seventy adults had succumbed as the rest of the village struggled for survival.1 As Inuit adults fell ill and died around town, orphaned children were moved from house to house, while the Moravian missionaries (of English and German ancestry) did what they could to help by distributing firewood and handing out soup.

The situation became more and more dire. The frozen ground prevented the burial of the flu’s victims, and eventually dogs gone mad with hunger started eating the bodies of the dead. The remaining adults, and any young boy old enough to hold a gun, were forced to shoot and kill the dogs around the town and burn their bodies in the harbour.2 By the end of December 1918, 204 of Okak’s 263 residents had died of the flu (Higgins 2007).3 In January, the surviving children were resettled into new homes in surrounding towns, and by the summer the town had been burned to the ground (Higgins 2007).4

1 The Last Days of Okak. Directed by Anne Budgell and Nigel Markham, National Film Board of Canada, 1985. www.nfb.ca/film/last_days_of_okak/
2 Budgell and Markham, The Last Days of Okak
4 Higgins, “The 1918 Spanish Flu.”
Geography is not, however, the only explanation for flu mortality. In general, remote majority Caucasian populations still fared better than Indigenous communities. Though this phenomenon is not universal, there is some evidence to suggest that those of European descent had enough prior exposure to influenza to build up a certain degree of immunity. Even if such individuals lived in predominantly non-Caucasian communities, people with European ancestry had a markedly lower mortality rate than the Indigenous and Inuit populations.

What’s more, the flu was most deadly when it passed among family members because the virus would mutate based upon the genetics of the original carrier, and thus it was better able to disable the immune systems of genetic relatives. This phenomenon was particularly dangerous in isolated communities with less genetic diversity – places where residents were simply more likely to catch the flu from a relative. Still, the relative influence of genetics on environmental factors remains a debated point, as studies conducted in Iceland and Utah have returned conflicting data on the role of genetics on influenza mortality.

Other factors determining morbidity rates also came into play in rural, non-white communities. Because these communities had few resources than larger urban communities, their residents tended to suffer from poorer health overall. The link between health and socio-economic status is well documented. The members of these communities had less access to education, faced discrimination in the labour market, and had sustained a loss of culture and language. In addition, residents contended with the compounding problems of simultaneously fighting both the flu and other illnesses, such as tuberculosis, as well as the ongoing health impacts of poor nutrition, a harsh climate and starvation.

Systemic racism played a role. It has also been reported that individuals in afflicted First Nations communities were, in certain areas, prohibited from leaving their reserves to seek care. The policy was intended to prevent them from spreading the illness to Caucasian populations.

Lastly, poverty reduced their ability to access resources, as did distance. It was difficult for health authorities to move personnel and medication to remote settlements that had fewer caregivers and generally poorer on-site health care. And over-crowding enabled the transmission of the virus. Because the inhabitants lived in close proximity to one another, the virus spread more quickly.

With the benefit of hindsight and a greater understanding of the confluence of socio-economic and genetic conditions in isolated Indigenous settlements, we can see the extreme danger that was posed by a disease that succeeded, in some cases, in virtually obliterating entire communities.

Adapted from:

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