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## Mobility, Connectivity and Pandemics of Modern World



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In a recent piece for Campaign for Social Care, [Andrew Tatem](#), Professor of Spatial Demography and Epidemiology, University of Southampton and Director of [WorldPop](#) and [Flowminder](#), analyses how increased global connectivity has helped COVID-19 to become the fastest-spreading disease in history.

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The pace of disease spread across the world has been rising, and the COVID-19 pandemic has broken all records. For example, smallpox took centuries to spread from Asia to Europe and Africa. For bubonic plague to reach Western Europe from its apparent origin in China it took 15 years, and with the influenza pandemic of 1918 it was just a few months before the disease had spread globally. In contrast, SARS-CoV-2 has reached nearly every country in the world in only around 70 days – as Prof. Tatem notes only the recent H1N1 swine flu pandemic comes close.

Understanding the specific causes that drive these trends is challenging as there is a variety of factors involved, eg, the infectiousness and other features of the pathogen, the susceptibility of different populations, surveillance and testing abilities, and so on. One factor that stands out, however, is growing global connectivity and the movement of people.

Until recently, global travel was reserved for only a few. Today, however, basically anyone can travel across the world in less than 24 hours – and so can the pathogens that they carry. In addition, the volumes of passenger traffic have also increased enormously. “On the scale of human history, very suddenly a disease outbreak in many parts of the planet can become a problem for the other side of the planet within days, with the growing numbers of people travelling providing ever greater numbers of opportunities for a pathogen looking to spread and reproduce,” writes Prof. Tatem.

With this in mind and in the absence of a vaccine or treatment, a variety of suppression and mitigation measures adopted around the world in response to the COVID-19 outbreak have proven effective in slowing down the spread of the virus. Therefore, the author claims, measuring, mapping and monitoring population mobility changes is key to planning policies for both current and future pandemics.

Population mobility data, such as mobile phone records, device location histories, or flight passenger data, are abundant. While “each source has its own biases,” a more complete picture of movement patterns can be built through combination of metrics to proactively monitor a newly emergent pathogen and its opportunities to spread instead of “chasing diseases as they ride with us across an increasingly connected World,” Prof. Tatem concludes.

Source: [Campaign for Social Science](#)

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