
EDWARD THOMMES, Sanofi/University of Guelph

Long-range forecasting of seasonal influenza vaccine uptake using web search data

The population-level burden of an influenza season depends strongly on the proportion of people vaccinated beforehand. Being able to predict whether a given season is on track to have low, high or average uptake would provide a critical piece of highly actionable intelligence for all stakeholders involved: Governments, public health authorities, healthcare providers, vaccines manufacturers, and not least, the population itself. In particular, sufficiently early advance warning provides the opportunity for interventions—such as increased investment in awareness programs—to proactively boost participation and avert a projected shortfall. We present an ensemble forecast model which utilizes a panel of Google web search queries to make meaningful predictions about US national-level total seasonal vaccine uptake as early as the beginning of the year in which the season begins.

FUNDING AND DISCLOSURES: This work was supported by an NSERC Alliance grant co-funded by Sanofi. ET is an employee of Sanofi and may hold shares and/or stock options