BABELSTREET

USE CASE

Using Babel Street Insights to Improve Public Health

During the Middle Ages, merchants on the Silk Road brought unimagined wonders to Europe. Silk, spices, paper, tea — and, in the mid-1300s, the Black Death (bubonic plague). Transmitted by fleas living on diseased rats, the plague wiped out between 30 and 60 percent of the European population.[1]

Today's shrinking world provides increased opportunities for cross-border contagion. COVID-19 illustrated how air travel enables pathogens to spread across continents in hours. International trade of goods and animals has led to global outbreaks of zoonotic diseases including avian flu and swine flu. Rising temperatures associated with climate change broaden the habitable environment of mosquitoes and can lead to increased instances of insect-borne diseases like zika and dengue fever.

Finding online evidence of disease

The first step in stopping an epidemic or pandemic is learning that one has begun. Open-source intelligence (OSINT) technologies can help epidemiologists, public health officials, and others spot and track outbreaks of infectious disease. Concurrently, these technologies aid professionals in finding the harmful misinformation and disinformation too often propagated across social media platforms. Once public health professionals become aware of false information, they can begin to combat it.

The Babel Street Insights OSINT platform provides AI-powered, cross-lingual, persistent search of thousands of global and regional sources of publicly available information (PAI). These sources, published in more than 200 languages translated by Insights, include social media platforms and message boards. Using Babel Street Insights to monitor social media, public health officials can detect spikes in usage of words indicative of emerging or spreading epidemics and pandemics. These terms may include "cough," "chills," "fever," "outbreak," and "ICU." Examining geotags appearing on these posts — along with searches of common health tracking sites — can help chart disease origins and spread. Keyword search for misinformation is also available. Terms will vary from crisis to crisis.

Using Babel Street to track disease spread

First detected in United States flocks in 2022,[2] avian flu has killed roughly 165 million birds nationwide[3] — disrupting the poultry industry and dramatically increasing egg prices. The flu has also infected cows, and, thus far, at least 70 people.[4]

How can public health investigators search PAI for the possible spread of avian flu in humans?

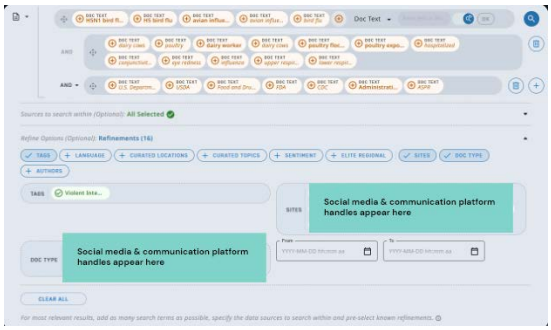

Figure 1: An Insights search showing search parameters and various refinements

Search for keywords

Using Babel Street Insights, investigators can search different name variations of the avian flu, along with associated health symptoms and common carriers of such diseases. Additionally, investigators can look for specific mentions of agencies or departments responsible for controlling outbreaks and managing public awareness of these diseases. Search results can be narrowed by time and date ranges.

Discover trends and sentiments

Investigators can use the Overview tab to review the reporting timeline and identify trends or patterns in the results that might indicate specific outbreaks or documented cases. This can help further narrow the results to the most relevant information and time period. Sentiment analysis on results yields a score from very negative to very positive. This helps identify general attitude and feelings toward a specific topic.

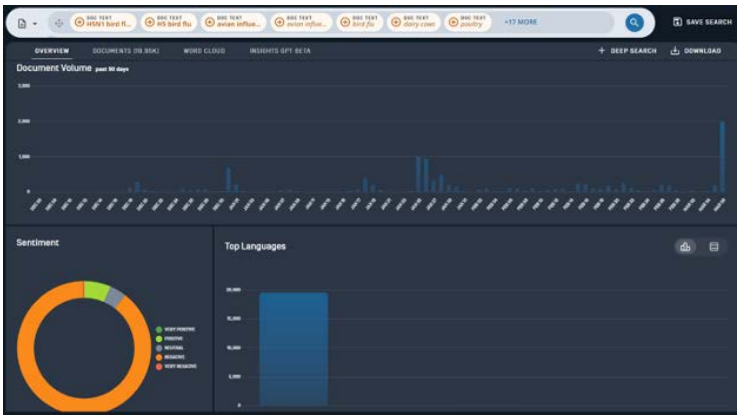

Figure 2: Trends and sentiment analysis are displayed on the Overview tab

Figure 3: An Insights search structured to detect false narratives

Detect disinformation

Investigators can search terms associated with disinformation or misinformation around avian flu to gauge public commentary and opinions on the virus. By focusing on social media and blog sites, these searches can uncover misinformation themes and narratives about the epidemic. Investigators can further analyze those users with particularly disruptive commentary.

Endnotes

1. Wikipedia, "Black Death," accessed February 2025, https://en.wikipedia.org/wiki/Black_Death#:~:text=The%20Black%20Death%20was%20a,the%20course%20of%20European%20history

2. Douglas, Leah and Polansek, Tom, "US will spend up to $1 billion to combat bird flu, USDA secretary says," Reuters, February 2025, https://www.reuters.com/world/us/us-will-spend-up-1-billion-combat-bird-flu-usda-secretary-says-2025-02-26/

3. Ibid

4. CDC, "H5 Bird Flu: Current Situation," February 2025, https://www.cdc.gov/bird-flu/situation-summary/index.html