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05.002

UpToDate: Using clinicians’ searches to track outbreaks

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UpToDate is an online clinical decision support resource that is used widely by clinicians around the world. Digital surveillance techniques have shown promise for aiding with the detection and monitoring of infectious disease outbreaks. We sought to determine whether significant increases in UpToDate search activity for selected infectious diseases predate or coincide with infectious disease outbreaks.

We analyzed daily searches related to Middle East respiratory syndrome (MERS) in Jeddah and Riyadh, Saudi Arabia during three hospital-based outbreaks in these cities in 2014 and 2015 and compared them with reported cases during the same periods. We also compared UpToDate MERS searches in the affected cities to those in a composite of four negative control cities for the two outbreaks in 2014. UpToDate MERS searches during all three MERS outbreaks in Saudi Arabia showed a correlation to reported cases. In addition, UpToDate MERS search volume in Jeddah and Riyadh during the outbreak periods in 2014 was significantly higher than the concurrent search volume in the negative control cities.

UpToDate search activity for specific infectious diseases also increased during outbreaks of salmonellosis, measles, dengue, West Nile virus, and influenza in Arizona, USA, and cyclosporiasis in Texas, Iowa, and Nebraska, USA. For outbreaks of salmonellosis, dengue, and measles in Arizona, UpToDate search activity increased before cases were reported or confirmed, suggesting that UpToDate search log data could be used as a complementary method for the early detection of new outbreaks. Analysis of UpToDate search logs is also a promising tool for monitoring ongoing outbreaks.

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05.003

Tracking activity to improve the sensitivity of the OIE’s monitoring and early warning systems for human and animal diseases

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One of the important attributes that define the quality of a surveillance system is its sensitivity (ability to detect all animal disease events). The sensitivity of the OIE World Animal Health Information System (WAHIS) is mainly ensured by the legal obligation of Member Countries to report OIE-listed diseases and emerging diseases, as indicated in the Terrestrial and Aquatic Animal Health Codes. In addition, in 2002, the OIE introduced a tracking activity for non-official information relating to animal and public health. The OIE tracking activity covered more than 250 sources of information disseminated by the media, animal and public health networks, scientific journals, and reports from OIE Reference Laboratories. Finally, in 2006, jointly with its partners, the World Health Organization and the Food and Agriculture Organization of the United Nations, the Global Early Warning System (GLEWS) was created to combine public health and animal health surveillance. For 2015, more than 5,000 rumours were tracked by the OIE. Information was collected for 167 countries and 100 diseases (85% of the 118 OIE-Listed diseases). The results of this activity were used to evaluate the impact of tracking on WAHIS sensitivity in 2015, using two indexes: 1) Monitoring system index: % of reports where tracking added sensitivity (number reports with tracking confirmed / total number reports submitted); Early warning system index: % of events notified following tracking (number events notified after tracking / total number of events notified) The results for the monitoring system show that 23% of the reports submitted contained information confirmed through the tracking activity. For the early warning system, the index shows a value of 8-13%, with significant variation due to the geographical area (highest values observed in Europe with only 4-6% of the reports following tracking activity) and the disease reported (percentage lower than 10% observed for blue-tongue, low pathogenic avian influenza, foot and mouth disease, African swine fever). The analysis shows an overall good sensitivity of WAHIS, but more resources will need to be invested to increase its performance and to sensitize the countries to report disease events spontaneously and in a timely manner.

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06.001

The challenge of nomadic and remote populations to emergency response, emerging disease surveillance, and eradication

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Itinerant and remote populations can be important sentinels for emerging pathogens, as well as vectors or reservoirs of diseases such as malaria and polio. However, these populations—by dint of their perceived “disconnectedness”—are typically under-represented in surveillance data and surveys, and often untouched by services reliant on “outreach” paradigms or targeted service delivery campaigns. Why are these populations considered so “hard to reach”? The effectiveness of healthcare systems, designed foremost to serve sedentary populations, is modulated by the features of their immediate surroundings: geography, infrastructure, climate, and primary means of livelihood, to name a few. In remote or sparsely settled areas, service delivery is doubly-encumbered by these challenges. Thus, the concept of “poor access” defined by proximity is a common (and convenient) trope to rationalize suboptimal service uptake among geographically marginalized groups, while ignoring the social, environmental and economic realities that offer relevant countervailing narratives. In this symposium, we will explore common research narratives involving these populations and will illustrate the complex environs in which public health practitioners must navigate effectively and collaboratively to succeed. We will consider constraints to emergency response for diseases such as ebola, the role of climate change on population movement, and access to care for nomadic groups. The presentations will address systematic exclusion under wide-ranging circumstances, in an effort to expand both the narratives around “access” and the solution space to incorporate tools and perspectives from other fields.

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