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An Adaptive Digital Intelligence System to Support Infodemic Management: The WHO EARS Platform

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Abstract. The WHO Early AI-Supported Response with Social Listening (EARS) platform was developed to help inform infodemic response during the COVID-19 pandemic. There was continual monitoring and evaluation of the platform and feedback from end-users was sought on a continual basis. Iterations were made to the platform in response to user needs, including the introduction of new languages and countries, and additional features to better enable more fine-grained and rapid analysis and reporting. The platform demonstrates how a scalable, adaptable system can be iterated upon to continue to support those working in emergency preparedness and response.

Keywords. Social listening, infodemic, AI, COVID-19, pandemic response, pandemic preparedness, social media monitoring

1. Introduction

The infodemic during the COVID-19 pandemic has impacted poorly on public health [1]. The WHO EARS platform was developed to enable infodemic managers to understand COVID-19-related narratives online. EARS uses Artificial Intelligence (AI) and machine learning to categorize publicly available digital and social media data to a public health taxonomy. Understanding the concerns, questions, information voids and narratives among citizens can help to inform pandemic and infodemic response [2]. The platform was launched in December 2020, initially covering 20 countries and four languages, and has analyzed over 86 million posts to October 2022.

2. Methods

Regular internal processes to understand the needs of those using the EARS system were implemented. Evaluation was conducted during training sessions, as written reviews, and through user consultations. Technical review was conducted each month with the development team to review global trends, the public health taxonomy, data sources and

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data volume. The following were identified from end-users: need for more fine-grained exploration of COVID-19 vaccine narratives; features to better support rapid analysis; more streamlined reporting features; and broader coverage of countries and languages.

3. Results

The EARS platform underwent iterations in response to user needs. Several new features were added to the platform to enable faster identification of insights and reporting. A 'stories' header on the main analysis page summarizes key rising narratives, alerting users to gender, category and country indications. A new sophisticated 'social indictors' panel helps users to identify social change in narratives across categories such as distrust, civic unrest, or polarization. An added reporting feature allows users to create, store and collaborate on producing reports, including options for automation. An additional five languages and 10 countries were added, and iterations made to the taxonomy. To enable more informed narratives about the COVID-19 vaccine roll-out, a new dashboard interface was added. This involved the development of a new vaccine-specific taxonomy comprising of 21 categories, for 15 priority countries and 10 languages.

4. Discussion

The innovative EARS platform is the first we are aware of to offer free, real-time access to data, categorized to a public health taxonomy, to enable rapid social understanding. Much social listening research is from high income countries [3] and EARS platform filters enable prioritization of narratives by gender, country or language. The needs of end-users evolved throughout the pandemic and the rounds of evaluation and iteration enabled the platform to remain relevant and useful. The adaptable and scalable use of AI technology to inform response and adapt to user needs is an example of how technology can support the changing needs of infodemic managers during a health emergency.

5. Conclusion

Digital social listening platforms can provide useful data, which when combined with other sources can produce actionable insights to guide response. Remaining agile and adaptable during a health emergency is important, the work done with the WHO EARS platform highlights how digital intelligence gathering can pivot to need changing needs.

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