

EARS - A WHO AI--supported platform for real-time online social listening of COVID -19 and COVID -19 vaccine conversations

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Introduction

Listening to people's questions and concerns is an important way for health authorities to learn about what matters to communities in response to COVID-19. WHO infodemic management framework emphasizes the need for faster insights into concerns of citizens. The WHO Early AI-Supported Response with Social Listening (EARS) online social listening platform summarizes real-time information about how people are talking about COVID-19 and COVID-19 vaccines in public spaces online, so risk communication and infodemic response interventions can be better designed and more effectively implemented.

Methods

The platform allows for exploration of the online public conversations at global and country level, a private country-specific dashboard for in-depth analysis, and an open API with the aggregated and anonymized data. From the initial pilot launched in December 2020 the platform has grown significantly to now cover 30 countries across all 6 WHO regions, analyzing content in 9 different languages (Figure 1). Data is collected daily from online COVID-19 conversations in English, French, Spanish, Portuguese, German, Italian, Thai, Bahasa Indonesia and Arabic from publicly available sources (ex Twitter, online forums, news comments, and blogs). Country attribution of the data is generated separately per data source. Each country sample consists of about 3,000 opinions per 1 million inhabitants per month (in total across all sources), except for small countries for which sampling ratio is higher. Data is then categorized automatically into 41 categories, with human quality controls, as per the WHO-developed COVID-19 public health social listening taxonomy. This is achieved by a semi-supervised machine learning algorithm with proprietary technology from Citibeats, an Ethical AI Platform.



The public WHO social listening tool (EARS) can combine detected real-time narratives from online conversations with other data sources for better integrated analysis to support infodemic response in countries.



Short communication:
Purnat TD et al. EARS - A WHO Platform for AI-Supported Real-Time Online Social Listening of COVID-19 Conversations. Stud Health Technol Inform. 2021 May 27;281:1009-1010.



Journal article: Purnat, TD et al. Delivering actionable infodemic insights and recommendations for the COVID-19 pandemic response. Weekly Epidemiological Record = Relevé épidémiologique hebdomadaire. 2022 Jul 8;97(27):313-24.



Online platform:
WHO Early AI-Supported Response with Social Listening (EARS) online social listening platform



Figure 1: Posts, countries, languages, and categories displayed in EARS (COVID-19 dashboard, 03 October 2022)

Results

An average of over 130,000 datapoints have been collected and categorised daily since December 2020, totalling 85.5 million to Sept 2022. Analysis results are presented normalized by the relative proportion of the conversation per country to ensure comparability across countries (Figure 2). The dashboards show how the topics of conversation change and evolve country by country over time, such as: what are the most popular categories and those gaining traction, and their patterns; what are the top and rising terms and hashtags within each category; what are the differences in conversations by; the composition of the conversation by intention: questions (confusion), complaints (frustration) or praise.

Since the launch of the platform in January 2021, work has focused on evaluation of the program pilot with infodemic response teams in countries, and scaling up to include more languages and country coverage. Regular review of data sources is carried out to enable integrated infodemic landscape analysis, including sources such as Google factchecker API, epidemiological data, and population surveys. Further research will be carried out to deep dive into development of new measurements and measure dimensions.

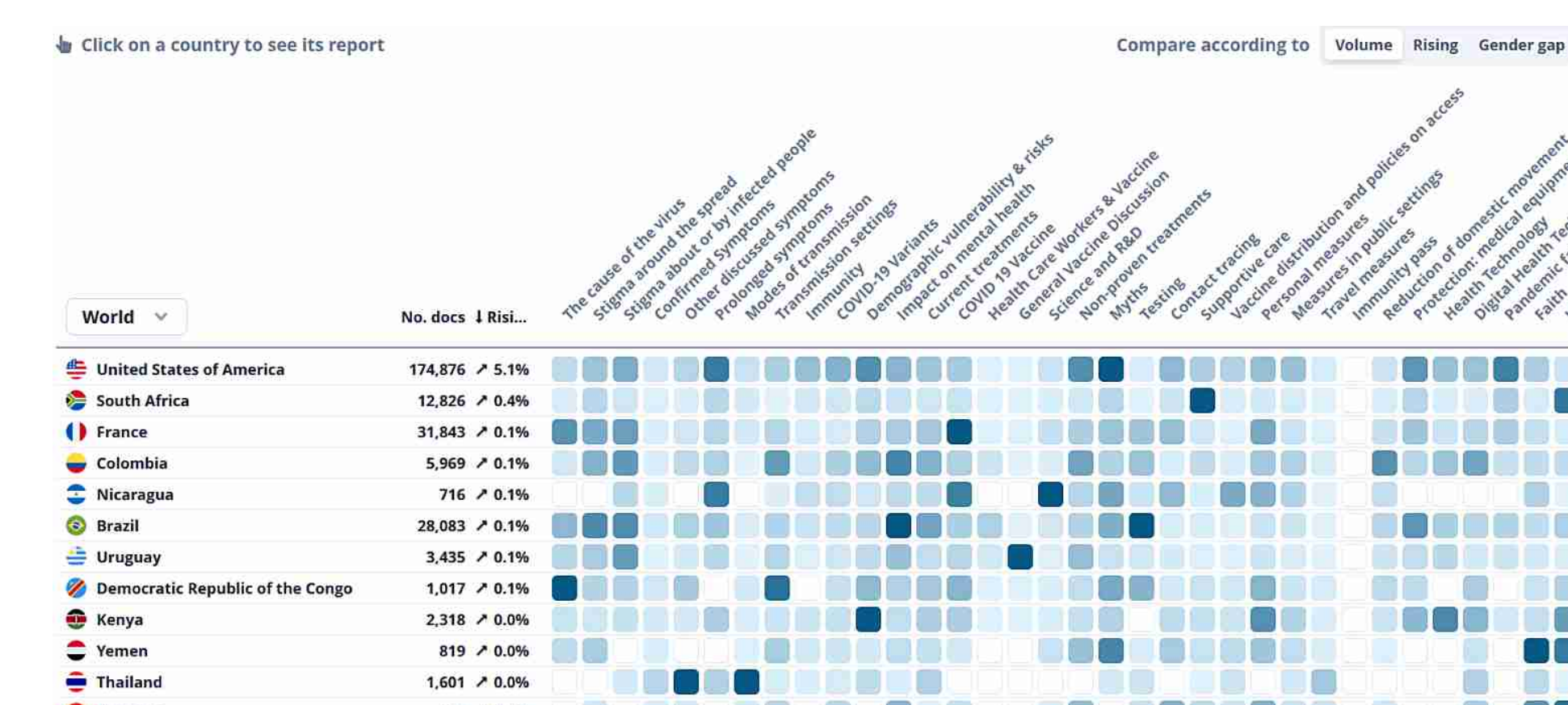


Figure 2: EARS dashboard showing topics of conversation per country

Conclusions

The configuration and application of the EARS platform has enabled progress towards more scalable and sustainable social listening to inform Infodemic management and response, compared to previous methods which were more manual, required data scientists in the team, or had fewer analytics capabilities.

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