

## Verification in EpiCore

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### Background

Innovative methods of disease surveillance are allowing earlier detection of potential threats. The key, however, is to rapidly determine which early warning signals are real and which may be false alarms.

Ending Pandemics created EpiCore, a robust global network of human, animal, and environmental health professionals committed to verifying disease outbreaks. On EpiCore, Requests for Information (RFI) are sent by human curators to volunteer experts in the geography of the potential health event through EpiCore’s online secure platform.

While RFIs are verified on average within 24 hours, creating RFIs on EpiCore requires several person hours of manual event information curation including entering of event details such as location, date, population affected, size of population affected, syndromes etc.

### Objective

To assess the accuracy and human time saved with automatic data extraction using AI for the generation of RFIs on EpiCore.

### What is EpiCore

*EpiCore is a network of >3,800 health professionals spanning 160 countries providing information through a secure online platform, to help verify potential health events.*

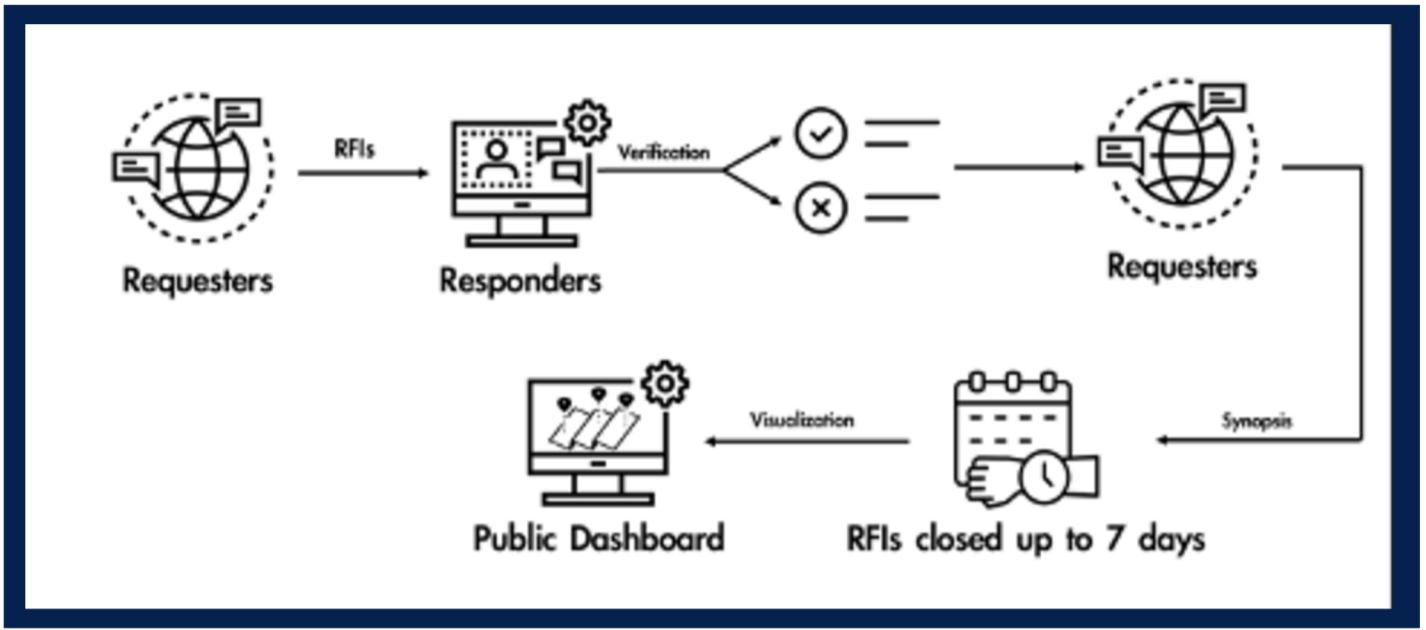


### Methods

AI technology was incorporated in July 2024 to reduce the person hours spent on creating RFIs on the system. EpiCore has recently adapted OpenAI’s Large Language Model (LLM) for information extraction and AI generated Requests (aka. Requests for Information (RFIs)).

Precision F1 scores for key fields in the auto RFI process were calculated – the AI model was trained to only use information within the ProMED article. Accuracy of information extraction and person hour reductions after incorporation of AI systems was captured.

### How EpiCore Works



### Findings

Overall The F1 scores for each epidemiologically relevant data field were:

- Event Location: 98.65%
- Event Date: 96.92%
- Population Affected: 100%
- Disease Syndrome: 96.97%
- Confirmed or Suspected Disease: 96.24%
- Number of Deaths or Illnesses (Case Count): 95.38%

Preliminary results based on the initial implementation show that the introduction of AI has reduced weekly person hours for the creation of RFIs on the platform by more than 50%.

### EpiCore Map of Members



### Conclusions

EpiCore is an innovative and scalable approach to improve signal quality and reduce false information supporting decision makers when used complementarity with official early detection and verification systems. AI for RFI generation has shown high accuracy and is a valuable tool that reduces the person hours for creating of RFIs on the platform. This allows for person hours to be dedicated to other tasks such as review of the responses and generating the event summary.

### Policy Recommendations

These results suggest that AI technology represents an effective way to make such systems more efficient, reducing human burden and errors. Further investment in AI to improve other functions of the platform is warranted and ongoing analysis of the impact of AI on EpiCore’s performance will continue.