CORONAVIRUS

Coronavirus exposes lack of common data approach

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The enormous differences between coronavirus cases reported worldwide raises questions on how countries are tracking their coronavirus outbreaks - or deliberately underreporting them.

In Europe, the European Centre for Disease Prevention and Control (ECDC) collects data about the coronavirus from member states through official websites and public health authorities.

The agency checks 500 websites daily to produce the update of data worldwide.

While ECDC recognises that small discrepancies in the number of cases between the various sources are normal, the agency believes that "such small differences in the total number of cases have no epidemiological relevance" as they would not influence the public health measures in place.

For example, it would be difficult to draw conclusions if the coronavirus has a relation to local climates, as there is missing information once the data is processed.

"One of the main problems is the duplication of data and lack of coordination between countries", said Mirjam van Reisen, who is part of the Virus Outbreak Data Network (VODAN) at the University of Leiden.

"This is a waste of resources and unnecessary," she added, calling for a new approach to data management that could enable faster AI-solutions and improve the response of the scientist community worldwide.

However, according to the European Commission, "there is no specific plan to present general guidelines on harmonising data collection methods and datasets across EU member states to feed Artificial Intelligence system to fight coronavirus".

'Wasteful and unnecessary'

Until now, hospitals and other medical facilities report data about cases, fatalities or recoveries to national health authorities. When this data is published, organisations such as the ECDC or the World Health Organization aggregate it to produce visualisations and analysis.

However, according to van Reisen, the more aggregate and centralised the data is the more difficult is it to compare.

That is why she and other experts are calling for a "decentralised" approach, where data is not moved, but AI instead can search the internet to find the data - within a specific framework.

imply that all data should be "Findable, Accessible, Interoperable and Reusable" (FAIR).

According to the commission, "this general approach is also central to the activities on sharing and managing coronavirus related research data".

So far, the commission and the EU's Molecular Biology Laboratory's European Bioinformatics Institute, together with national authorities and research partners, are deploying a dedicated European coronavirus research data platform which will facilitate data-sharing for the European and global research communities.

Traceability

However, Van Raisen believes "data alone is not enough, the origin of data is just as important as data itself, as it allows the validation of such data".

For example, a finding on the novel coronavirus may be related to the temperature or a moist climate in a certain location.

"It is important that data can be traced back to where it comes, from because data that has been manipulated for other purposes loses information that might be critical to the data scientist," Van Raisen told this website.

Additionally, this "decentralised" approach also promises to increase transparency and avoid data manipulation because the data would never leave the source - being able to solve questions about countries allegedly concealing the extent of the coronavirus epidemic.

Meanwhile, the commission launched an initiative to collect ideas about deployable AI and robotics solutions

A total of over 100 initiatives suggested from 14 different member states as well as Switzerland, Norway, UK, US, Japan, Brazil, United Arab Emirates and Turkey has been collected.

"Today's opportunity to build the internet of FAIR data and services should not be wasted as it only requires the commission to stand by its vision and implement it across its emergency and regular funding mechanisms," van Reisen concluded.

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