

Using big data to detect disease outbreaks: Is it ethical?

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Focus Feature. Credit: Steve Rainwater/Flickr

Personal information taken from social media, blogs, page views and so on are used to detect disease outbreaks, however, does this violate our privacy, consent and trust?

Dr. Effy Vayena from the University of Zurich and colleagues map the numerous ethical challenges confronting digital disease detection (DDD)

and propose a framework to address the questions.

In the article publishing this week in *PLOS Computational Biology*, the authors argue that this use of [big data](#) has the potential to strengthen global [public health](#) surveillance, including in low resource countries. However, the treatment and success of big data depends on answering [ethical questions](#) of confidentiality when using [personal information](#).

To address these ethical objections the authors focus on the following three categories:

- Privacy and consent - the requirements need to be adapted for a public health context (as opposed to a commercial context).
- Methodological robustness - methodology is evolving and requires constant adaptation to avoid false identification of outbreaks that could cause harm.
- Legitimacy - digital disease detection needs codes of best practice to meet ethical requirements as well as clear communication to the public to prevent hype.

The researchers say: "Big data can play a major role in public health and its potential has been demonstrated. However, we are only at the beginning and there is no way to tap into this resource without an ethical and trustworthy framework. The road to trust requires a lot of effort and ethical diligence."

More information: Vayena E, Salathé M, Madoff LC, Brownstein JS (2015) Ethical Challenges of Big Data in Public Health. *PLoS Comput Biol* 11(2): e1003904. [DOI: 10.1371/journal.pcbi.1003904](https://doi.org/10.1371/journal.pcbi.1003904)

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