DSEN ABSTRACT

Use of Social Media and Crowdsourcing Data Analytics for Pharmacovigilance in Canada

Summary

- Social media 'mining' for 'pharmacosurveillance' may be a way to detect adverse drug effects, and potentially assess those signals in order to prepare risk mitigation to safeguard the health of Canadians.
- We addressed the question:"What is the value of using social media surveillance for pharmacovigilance in a Canadian context?"
- We explored the feasibility of social media pharmacovigilance in Canada, using a commercial software platform to assess 10 drugs.
- We estimate the agreement of potential adverse events detected through social media posts, compared to adverse events spontaneously reported through an existing drug safety database.
- Our results suggested that it is feasible to conduct surveillance using social media.
- A caveat is that some manual curation is needed in addition to automated 'mining' of social media information.

Authors: David Buckeridge, Claudia Woronko, Nikita Boston-Fisher, Carrie Pierce

For more information, please contact
david.buckeridge@mcgill.ca

What is the current situation?

Pharmacovigilance entails monitoring drug safety in the real world. Social media platforms (e.g. Twitter, Facebook) have enabled millions of users to share their experiences about drugs and medical products publicly, and could be used to detect safety signals. Health Canada's Resource Management and Operations Directorate, in collaboration with the Marketed Health Products Directorate, was interested in evaluating the question "What is the value of using social media surveillance for pharmacovigilance in a Canadian context?"

What was the aim of the study?

We aimed to:

- Explore the feasibility of social media pharmacovigilance in Canada, using a commercial software platform for surveillance of 10 drugs
- Estimate the agreement of potential adverse events detected through social media posts, with adverse events available through an existing spontaneous reporting drug safety database.

How was the study conducted?

- We used a commercial system for social media pharmacovigilance (MedWatcher Social, Jan 2017-Apr 2018), a platform intended to be used by drug regulators, including scientific and medical reviewers and epidemiologists, to complement post market safety surveillance.
- We quantitatively analyzed potential adverse events identified by the Medwatcher Social system from three perspectives: frequency, precision, and agreement.

What did the study find?

- The overall frequency of adverse drug events noted on social media tended to be lower than for spontaneous reports.
- At a coarse level (i.e., type of organ affected by the drug adverse event) social media and spontaneous drug adverse event reporting data tended to agree in terms of the relative frequency of potential adverse events for a given product, though the actual symptoms reported through spontaneous reports tended to be more severe than those reported via social media.
- Based on our findings for the ten products selected, conducting pharmacosurveillance using social media in Canada seems feasible.
- However, automated processes are not sufficiently precise on their own, so manual curation of data is also necessary.

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