

Study shows asthma-related Twitter posts can predict rise in hospital visits

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New research at the Pediatric Academic Societies 2016 Meeting suggests that to predict—and possibly prevent—severe asthma attacks in a community, physicians can look for clues in social media.

For the study, "The Twitter Asthma Pulse: Using Real-Time Twitter Data to Prospectively Predict Asthma Emergency Department Visits or Hospital Admissions in a Population," researchers collected tweets posted between October 2013 and June 2014 and narrowed them down to the 3,810 that mentioned asthma attacks and that originated in the Dallas-Fort Worth area. During the same time period, incidences of asthma-related emergency department visits and hospitalizations across the region area were recorded.

When the number of asthma-related tweets increased in a given week, the researchers found, the number of asthma emergency department visits or hospitalizations increased proportionally during the following week.

"If the number of asthma-related tweets increased by 20 in a given week, for example, we would expect asthma-related emergency department visits or hospitalizations to increase by 12 in the following week," said lead researcher Yolande Mfondoum Pengetnze, MD, medical director at Parkland Center for Clinical Innovation (PCCI), a non-profit research and development corporation in Dallas. "This is an important finding that can change the way health departments and other healthcare stakeholders monitor asthma activity in a community."

Currently, Dr. Pengetnze said, asthma activity in a community is usually measured after emergency department visits or hospitalizations already have occurred.

"By using real-time Twitter activity," she said, "health departments could actually anticipate asthma ED visits or hospitalizations in the following days and possibly intervene before some of them occur. For instance, a notification might be sent by the health department when there is an increase in asthma-related tweets in the community, giving people with asthma a heads-up to take necessary precautions, like avoiding exposure to asthma triggers or being more assiduous in taking their [asthma medications](#)." In turn, she said, this could help prevent some asthma flare-ups, improve people's health and decrease the number of asthma-related emergency department visits and hospitalizations.

"We live in the era of Big Data," said study co-author Sudha Ram, PhD, referring to increasingly immense sets of information that lends itself well to analysis revealing patterns of human behavior. "Our research is innovative and unique because it harnesses the power of Big Data from social media and other sources to address the problem of anticipating [emergency department](#) visits for a chronic condition, in this case [asthma](#), in close to real-time conditions. We believe this work paves the way to address signal extraction and prediction for other chronic conditions and goes beyond current work that mostly looks at infectious conditions."

More information: www.abstracts2view.com/pas/view...hp?nu=PAS16L1_4600.8

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