Tweets speak volumes about prevailing epidemic situation within United States.

Harshavardhan Achrekar, a PhD candidate advised by Prof. Benyuan Liu, presented his paper titled "Predicting Flu Trends using Twitter data" at the International Workshop on Cyber-Physical Networking Systems (CPNS) 2011, in conjunction with IEEE INFOCOM 2011, held in Shanghai, China, April 10-15, 2011.

Seasonal influenza epidemics result in about three to five million cases of severe illness and about 250,000 to 500,000 deaths worldwide each year. Reducing the impact of seasonal influenza epidemics and other pandemics such as the H1N1 is of paramount importance for public health authorities. Studies have shown that effective interventions can be taken to contain the epidemics if early detection can be made. Traditional approach employed by the Centers for Disease Control and Prevention (CDC) includes collecting influenza-like illness (ILI) activity data from “sentinel” medical practices, resulting in a 1-2 week delay between the time a patient is diagnosed and the moment that data point becomes available in aggregate ILI reports.

In this paper the authors investigate the use of a novel data source, namely, messages posted on Twitter, to track and predict the level of ILI activity within US population. Their approach treats twitter users as “sensors” and the collective message exchanges with a mention of flu based keywords such as “I got Flu” and “down with swine flu” as early indicators and robust predictors of influenza. Based on the data collected during 2009 and 2010, they find that the volume of flu related tweets is highly correlated with the number of ILI cases reported by CDC, and can provide real-time assessment of ILI activity. This work is supported by National Institutes of Health under a Small Business Innovation Research Award. The co-authors of the paper include Avinash Gandhe, Ssu-Hsin Yu at SSCI and Ross Lazarus at Harvard. A copy of the paper is available at http://cse.unl.edu/~byrav/INFOCOM2011/workshops/papers/p713-achrekar.pdf