Mental health-related conversations on social media and crisis episodes: a time-series regression analysis.

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Background and aims
The value of collecting digital information for healthcare monitoring has been progressively recognised. Taking advantage of ‘big data’ from both mental healthcare and social media, we sought to investigate the extent to which day-to-day fluctuations in Twitter discussions about depression and schizophrenia would be associated with mental health crisis episodes in secondary mental healthcare.

Methods
- Twitter – general/supportive schizophrenia /depression posts
- SLAM and Camden and Islington (C&I) - crisis episodes (incident inpatient, home treatment team and crisis house referrals)
- Time series regression analysis adjusted for autocorrelation, year, temperature, seasonality and bed occupancy level – Jan 2010-Dec 2014

Outcomes
- Higher volume of twitter posts was positively associated with an increase in crisis episodes on the same day
- 7-day delayed effects showed a pattern of early positive and middle negative associations with a return to positive associations by day 7
- Results were near identical in SLAM and C&I
- 9-15% increase in crisis episodes on above-median tweet days

Discussion
- Potential for social media to inadvertently impact mental health of vulnerable populations
- Effects suggest great need for identifying these groups and countering negative messages
- 7-day associations are consistent with precipitating and longer-term effects
- Monitoring system to identify risk days and communicate these to services and professionals