

Predictive Analytics



“Analytics is the scientific process of transforming data into insight for making better decisions.”

Institute for Operations Research & the Management Sciences (IORMS)

(cited in Boyd EA. ‘Revisiting ‘What is predictive analytics ‘.)

“Predictive analytics is ... based on a basic fundamental: ‘past behaviour predicts future behaviour’.”

Jain, P. ‘What predictive analytics ‘is not.’

Analytics Magazine, July/August 2012



Predictive Analytics: Evaluation Project (June 2013)

Types of forecasting software:

Dedicated –

- ForecastPro
- OpenForecast
- Smart Forecasts
- Vanguard Forecast Server
- XL Miner



Predictive Analytics: Evaluation Project (June 2013)

Types of forecasting software:

Statistical software –

- IBM SPSS Modeller
- SAS Forecasting (Server & Desktop)
- Minitab
- NCSS 8
- Oracle Crystal Ball Suite
- Statgraphics
- Systat

Other software –

- Palo Suite
- Excel add ons (eg Actuarial Forecast, Peer Forecaster, Jedox for Excel)



Predictive Analytics: Evaluation Project (June 2013)

Growing range of uses eg:

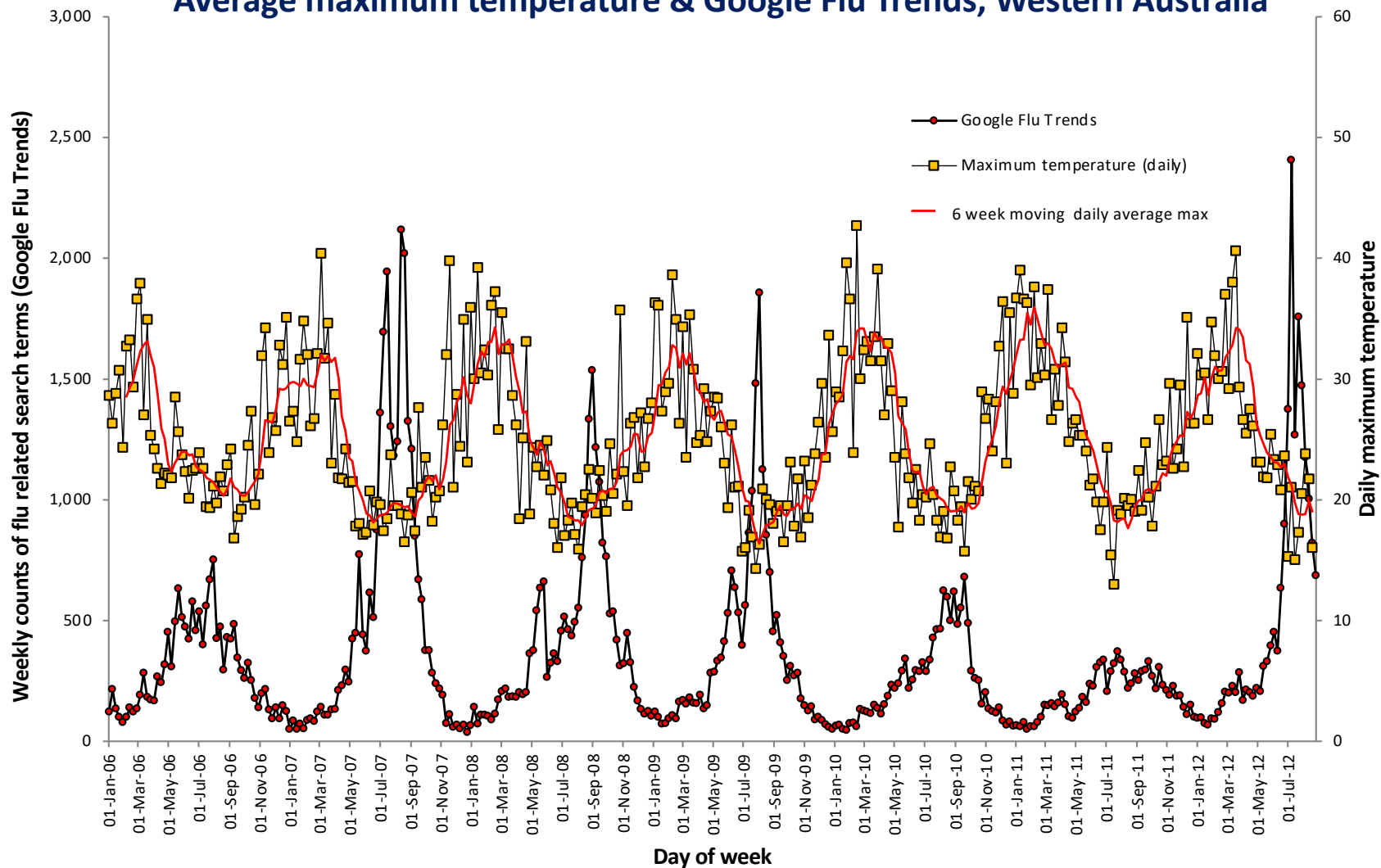
- Identify at risk patients to reduce hospital readmissions
- Analyse social medial data (eg Twitter)
- Measure public concern about flu epidemics (eg Google Flu Trends)
- Manage hospital ED activity (eg CapPlan ED module)
- Improve workplace safety
- Improve risk assessment & prediction in financial services
- Predict extreme weather events
- Assist in preparation for disasters (eg EMCAPS)



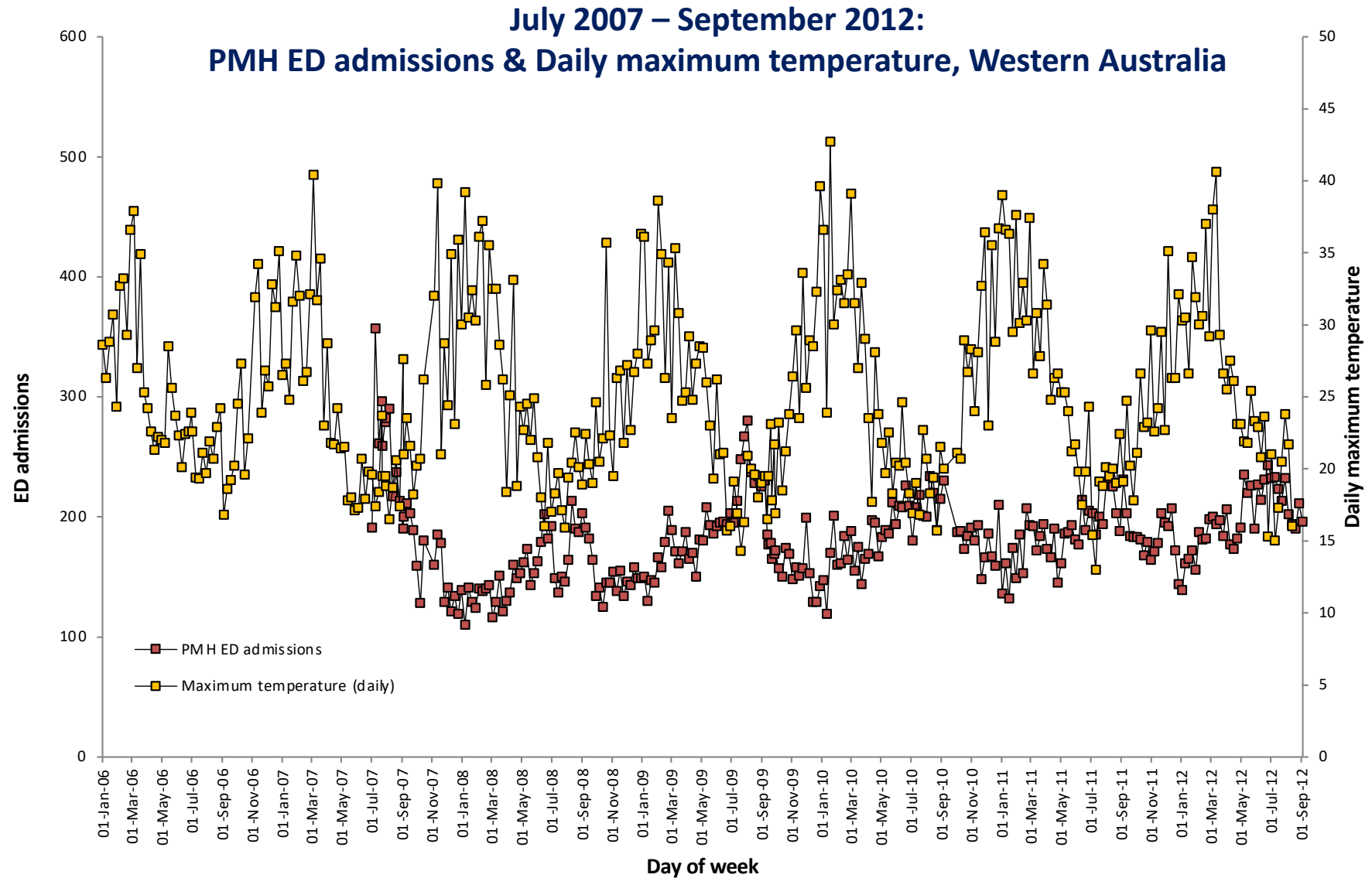
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January 2006 – August 2012:

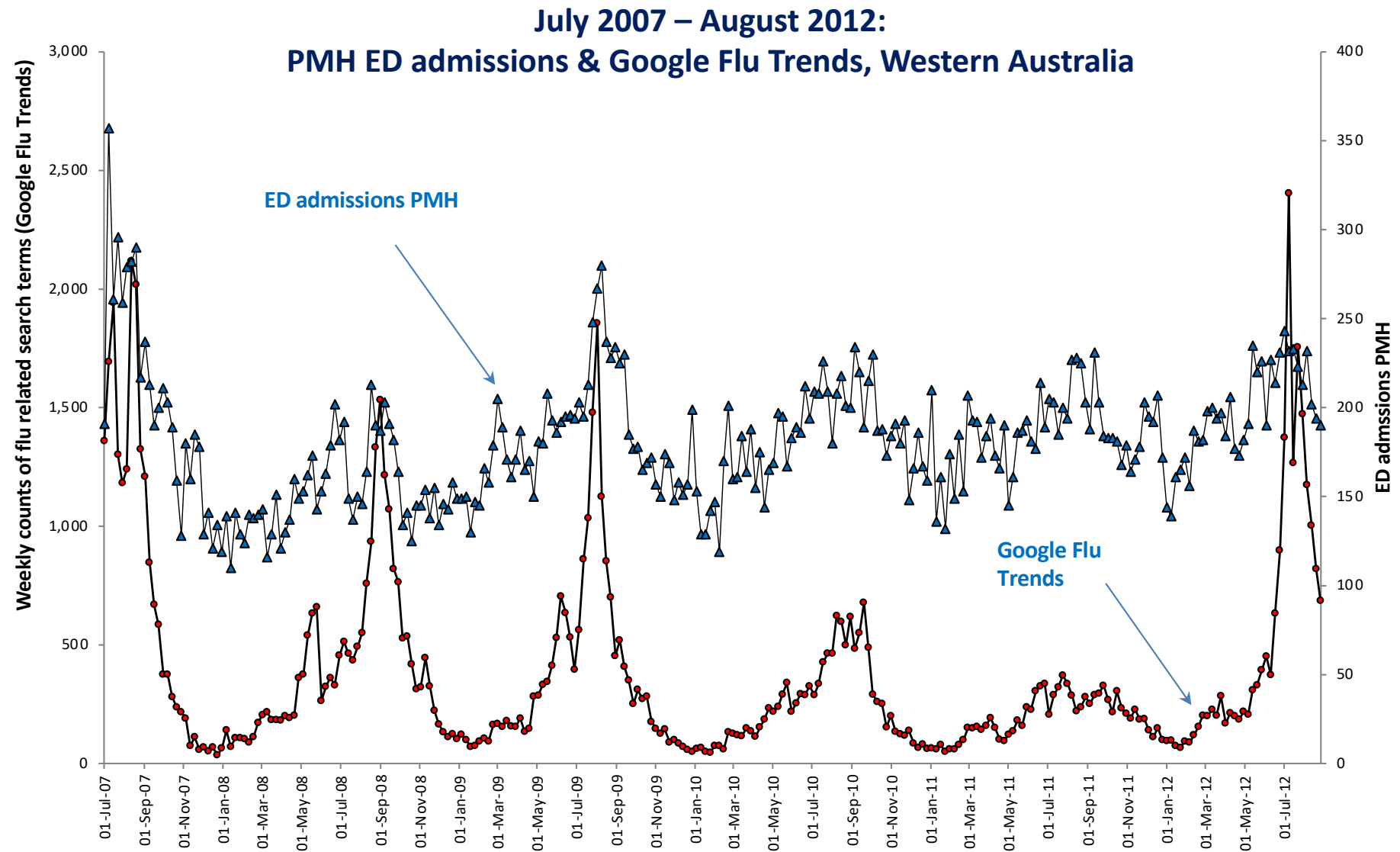
Average maximum temperature & Google Flu Trends, Western Australia



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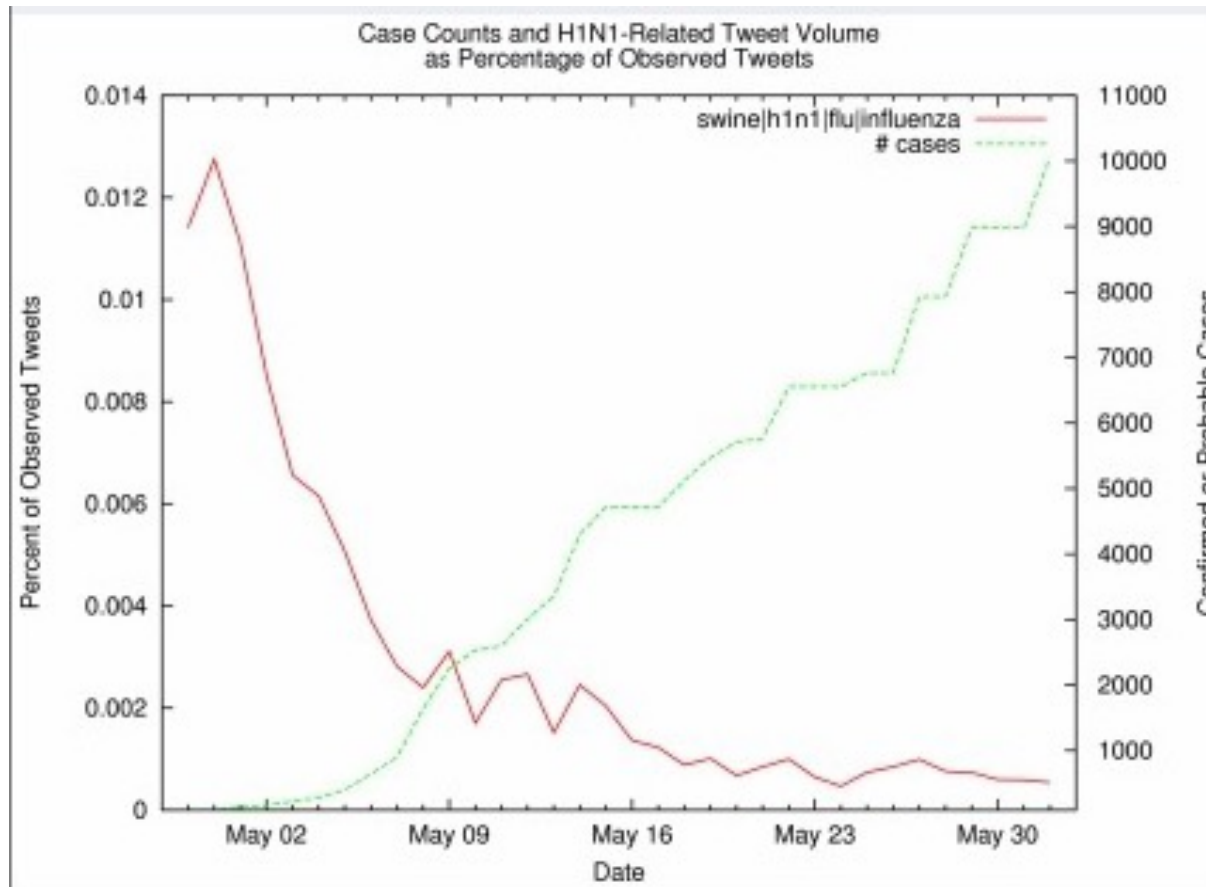


Predictive Analytics: Evaluation Project (June 2013)



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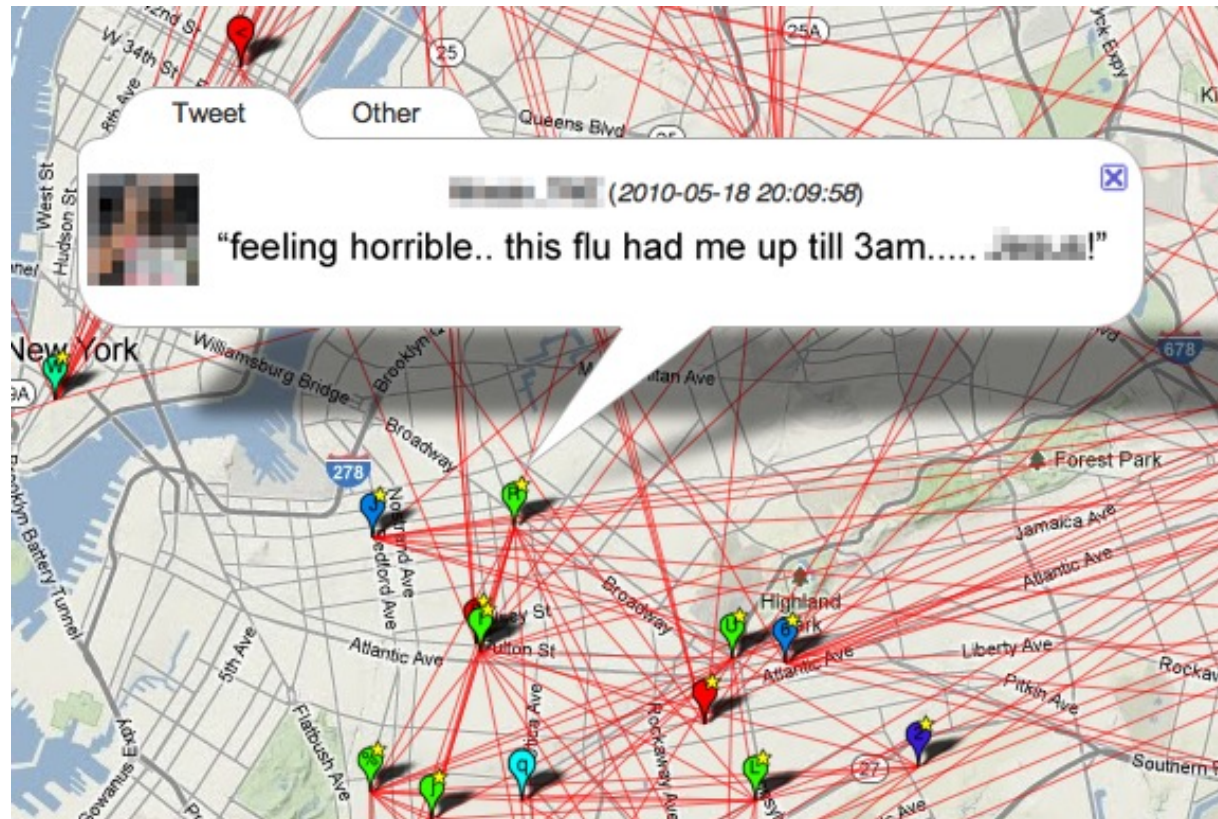
Flu (H1N1) outbreak: April – June 2009, USA



Source: Signori et al (2011)

Predictive Analytics: Evaluation Project (June 2013)

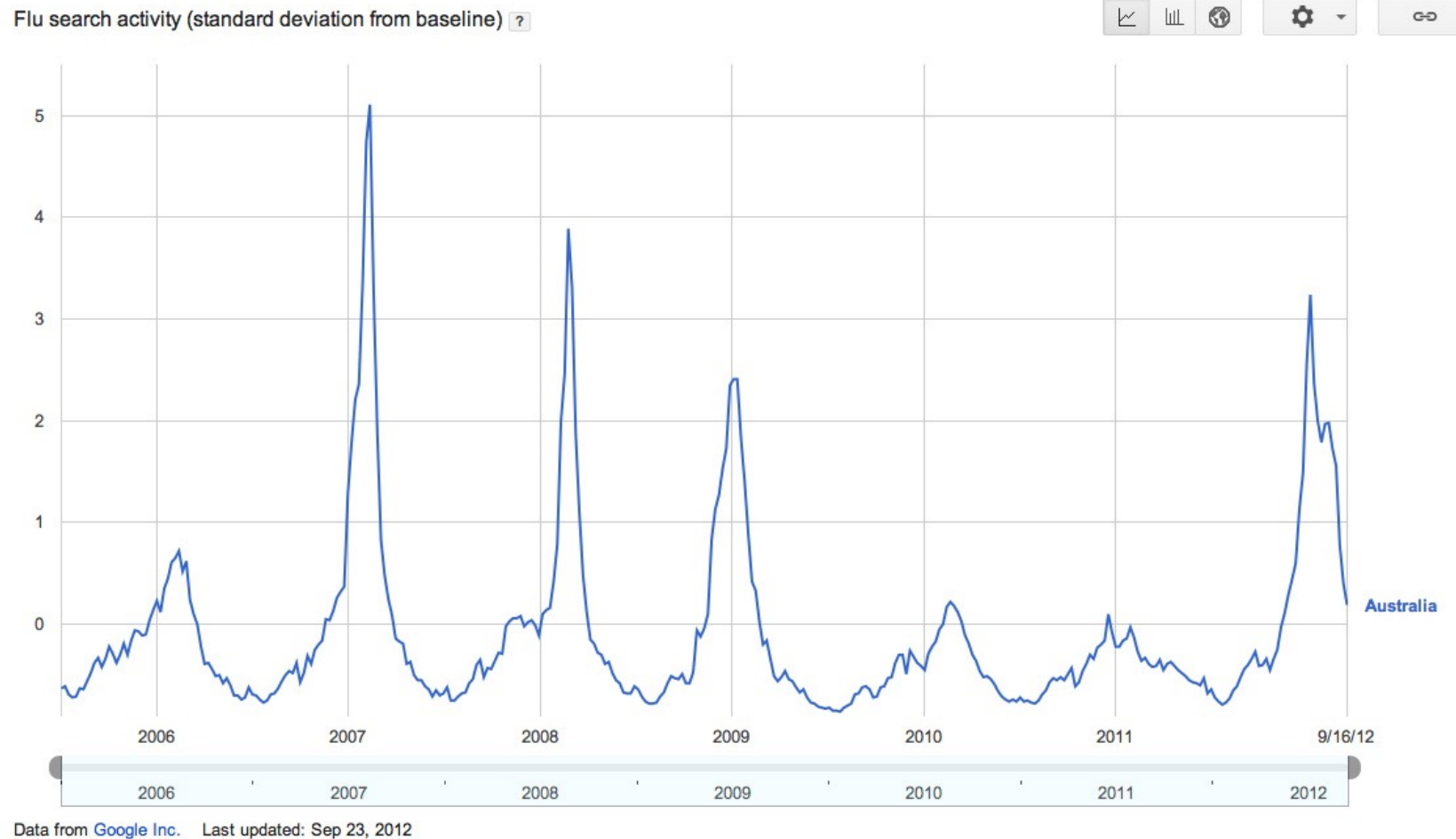
'Infectious disease' tweets: May 2010, New York



Source: Sadilek et al (2012)

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Flu search activity: 2006 – 2012, Australia



Source: Google Flu Trends (<http://www.google.com>)

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“The core of predictive analytics (is that it) relies on capturing relationships between an explanatory variable and the predicted variable from past occurrences, and exploiting it to predict future outcomes.”

Wikipedia – Predictive analytics (http://en.wikipedia.org/wiki/Predictive_analytics)

