Topic 6: Analysis of social media comments for pharmacovigilance purposes

Research

December 10, 2014

WEB-RADR

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Summary of the 3 research topics

- Identification of suspected drug-related events
- Record Linkage (ie how to handle “duplicates”)
- Signal Detection

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Summary – WP2B – Research

KEY ISSUE

- How to extract and analyze safety data from unstructured, variable quality free text, posted in very large volumes
- How to synthesize and harness the real information from tweets, facebook posts, blogs etc
- How to aggregate this information and assess whether this aggregated information really is indicative of a drug safety issue

CHALLENGES

- How do we find the products and events of interest?
- How do we make sure there are no duplicates or fraudulent postings?
- How should we count occurrences and apply thresholds for ‘signaling’?

A TWEET

Product recognition

Event recognition

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PRODUCT RECOGNITION

Paraceutamol

Bamyl

Viccilin

Panodil

Penicline

Adalat

Broadcilin

Alvedon

Acetylsalicylic acid

Ampicillin

Nifedicor

Nifedipine

Aspirin

Panodol

Magnecyl

Ampicillin sodium

PRODUCT RECOGNITION

Paracetamol

Viccilin®

Bamyl®

Panodil®

Penicline®

Adalat®

Broadcillin®

Alvedon®

Acetylsalicylic acid

Ampicillin

Nifedicor®

Nifedipine

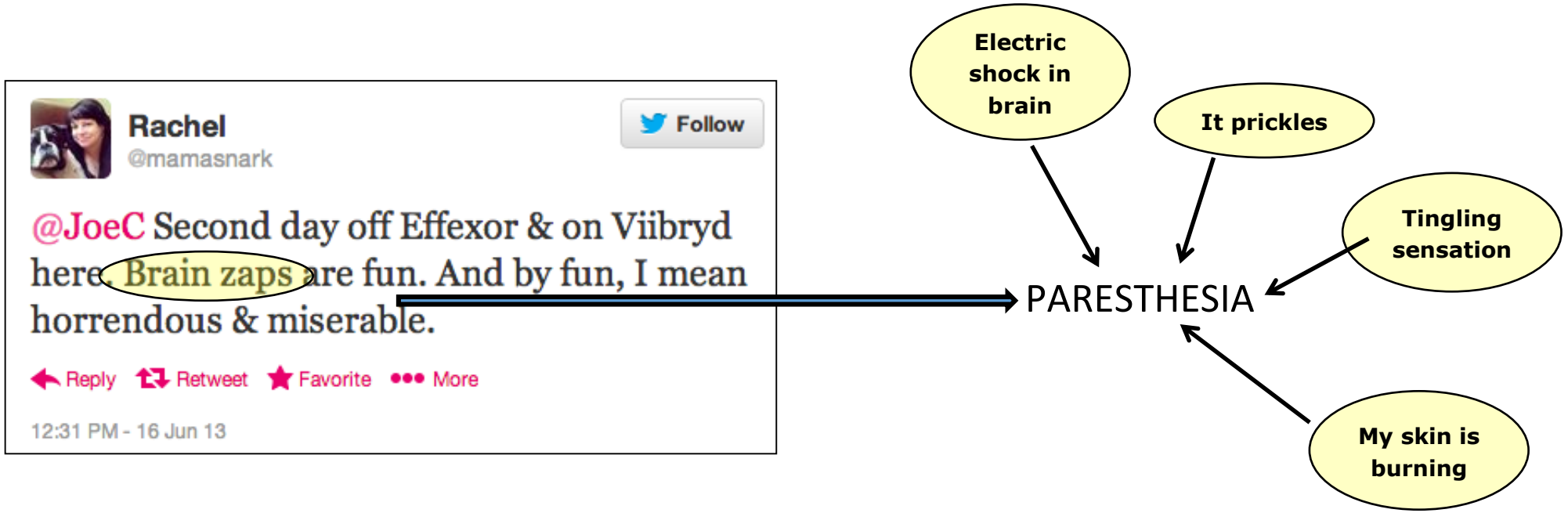
Aspirin®

Panodol®

Magnecyl®

Ampicillin sodium

EVENT RECOGNITION



SOCIAL MEDIA VERNACULAR → MeDDRA (Medical Dictionary for Regulatory Activities)

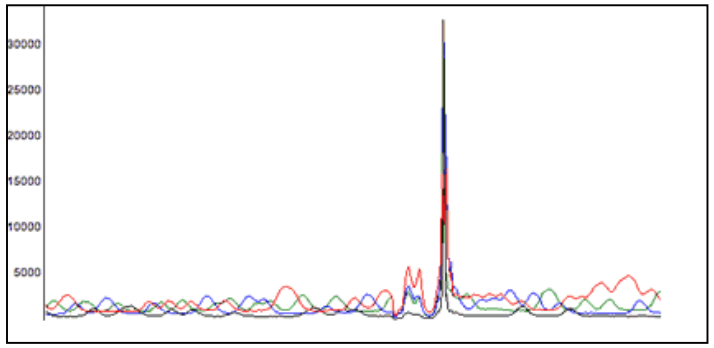
Duplication within platform and across platforms

People post the same experience multiple times.

IS THIS THE SAME EVENT?

Signal Detection

When does something become a signal?



Signal: as information that arises from one or multiple sources (including observations & experiments), which suggests a new potentially causal association, or a new aspect of a known association, between an intervention and an event or set of related events, either adverse or beneficial, that is judged to be of sufficient likelihood to justify verificatory action.

(Module IX, CIOMS, Geneva 2010)

→ Count events found in social media for a product, eg PARESTHESIA

- Do these counts go up over time?
- Are these counts 'higher' than for other products?

Signal Detection Plan

Stepwise approach

1. Apply standard approaches used in spontaneous reporting databases

2. Adapt existing methods to social media data

3. Explore additional approaches:
   - How to assess trustworthiness of individual items and aggregate data
   - How to handle “stimulated” posting