Practical Examples of Social Listening for Safety

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Project CRAWL Overview
Contextualization of Real-World Drug Use Through Social Listening

Publicly available data is collected from multiple sources (Facebook, Twitter, Internet chat rooms)

System filters out noise, highlights important information, and supplemental data is added (spontaneous data, etc.)

Users can interactively explore the information using an easy to use interface that helps facilitate the review process

Key Learnings

- **Quantity of data**
    - A PEW study found that 3-4% of adult internet users have posted their experience with health care service providers or treatments in the previous 12 months.
    - A study completed by GSK showed 22 million potential adverse events (over 2 year period) for about 1,000 drugs (publicly available Facebook and Twitter posts, English language only).
    - For comparison, the FDA's FAERS database has ~7.5 million adverse event reports since 1968.

- **Timeliness of the data**
    - Traditional data can lag behind (9-12 months for observational data).
    - Social listening data is usually available within hours from the time a person posts their comments online.

- **Geographic diversity of the data**
    - Traditional post-marketing safety data is US and European centric.
    - Three of the five largest users of the internet are Asia, Latin America/Caribbean, and Africa.

- **Unique Data (not typically seen with traditional data sources)**
    - Approximately 26% of people discussing drugs will talk about efficacy.
    - Complaints about a product (trouble using device, dislike of smells/appearance, etc.)
    - People will ask safety questions and provide safety information online.
    - Drug abuse/misuse

What kind of numbers are we talking about?
(Over 2 year period)

	Spontaneous reports	Twitter	FB
Total events mentioned	682,036	6,441,679	15,650,108
Number of distinct PT	8,088	702	946

- Where do posts come from?
  - 50% mobile devices
  - 25% desktop
  - 25% unknown

Value of Social Listening in Pharmacovigilance
What Has Worked Well

- Safety monitoring OTC switch products early post launch

- Monitoring of product safety of newly approved pharmaceutical products early post launch

- Drug Abuse

- Product complaints
  - Syringe misalignment leading to product recall
  - Inhaler color confusion
  - Counterfeit product identification

- Understanding efficacy from the patient's perspective
  - 26% of patients who discussed GSK drugs discuss if the drug worked

Capabilities to be Evaluated

<u>Continue to advance the science, research in the following areas:</u>

- Maximize existing data sources (linking posts, understanding strengths/weaknesses, etc.)

- Leverage new data sources (Youtube, Reddit, etc.) and new languages

- Scalability: quantitative signal detection, command center, better classifiers

- Advanced analytics: accounting for influencer scores, correcting for emotions

- Explore extending capability to clinical trials: assessing unmet need, patient desired outcomes, protocol review, Social Media to facilitate clinical trial communications

- Understanding disease characteristics (signs/symptoms most problematic, which outcomes are most important)

- Overdose: Can social media provide supplemental data to the Poison Control Centers

- Drug Use in Pregnancy

- Longitudinal posting records