MEETING MINUTES

Meeting title

CSRC Social Listening Think Tank Meeting

Date

03-Jun-2016

Objectives

– The purpose of this think tank is to explore current methods of collecting and evaluating social listening data. Representatives from industry, academia, and regulatory agencies will share their perspectives on the topic of social listening and discuss its potential implications in the field of cardiac safety.

Location

FDA Headquarters, White Oak Campus
Building 31, Great Room, Section A
10903 New Hampshire Ave.
Silver Spring, MD 20993

Agenda item	Notes/ Decision	Lead	Action required/ Due date/ Comments
Welcome/Intro (830-900)	• CSRC Introduction – purpose of the CSRC is to improve cardiac safety of all medical products (drug, devices, biological). Have held over 40 think tanks since being formed, there are 40+ member companies, regulators, strategic partnerships with e.g. DIA, various societies, organizations; a number of research projects. • DIA Introduction – relationship with CSRC includes the Cardiac Safety Education Collaborative to progress the issues that limit the science. DIA first brought patients into Biopharmaceutical development almost 10 years ago. Looking to progress patient engagement relationships – results will be shared at Annual DIA in June. • Overview of key concepts – leveraging social media for cardiac safety (how can this benefit the patients we care about). Social media will complement existing data sources for pharmacovigilance. Non-AE information could be important to understanding benefit, real world use. Interested in learning more about the strengths and limitations of social media – interested in understanding patient perspectives and perceptions. Social listening is a passive process without attempting to enter into the conversation. Cardiac Safety = anything from cardiac-related safety issues to safety issues for cardiac treatments, ProtoAE = terminology in social media posts that could represent a possible adverse event. Commonly asked questions about use of social media data revolve around: regulatory, privacy, data rights, legal and utilization of this data.	JF, RM, GP	ACTION: Reference Patient Engagement poster on DIA website.
Session 1 (900-930)	***Review of current safety surveillance methods and overview of social listening*** Session chairs: Greg Powell, GSK Harry Seifert, GSK **Review current safety surveillance methods** (Oanh Dang, FDA) **Overview of social listening methods** (Nabarun Dasgupta, Epidemico) **Practical examples of social listening for safety** (Lorrie Schifano, GSK) **Social listening for cardiac safety research** (Bruce Donzanti, Genentech) – FDA, Oanh Dang (PV) – 10 teams that evaluate the	GP, HS	Janssen, Genentech, MHRA, DIA, GSK, Epidemico, FDA – CDER, Inspire, Duke,

safety of products. Consider multiple data sources when looking for possible signals (FAERS, Manufactures' periodic safety update reports, safety data from NDA, citizens' petitions, medical literature, media, foreign regulatory agencies and more. Indiv. Case safety reports (ICSRs) are optional - 12M cases in the safety databases. Dechallenge and rechallenge information helps constitute a good quality ICSR. FAERS has limitations (see slide 8 in presentation). Slide 9 contains current guidance on monitoring social media sites. – Epidemico, Carrie Pierce – use machine learning and natural language processing to identify most relevant publicly available social media posts, deidentify, code using MedDRA and render in an easy, graphical data visualization user interface for further review and action by safety reviewers. Operating with 70% positive predictive value. With curation, 88% positive predictive value. – GSK, Lorrie Schifano – Key learnings from use of social listening: quantity of data, timeliness (traditional sources have a lag), geographical diversity and unique data not typically seen in traditional data source (26% of people were discussing whether a drug worked for them). Type of information that was useful: Product complaints (syringe misalignment led to recall), rich data on drug abuse, understanding efficacy from patient perspective. – FDA, Medical Device/epidemiology, Ben Eloff – looking to advance the use of real world evidence in regulatory decision making (social media is a rich source of real world data) and to improve patient engagement. Want to understand patient's perspective on e.g. medical procedures they're about to enter into. Understanding interactions between products - social media will give uncontrolled information. FDA using the same MedWatch forms agency-wide (4 pg. PDF is not as appealing to complete as posting an experience on Social Media). Epidemico and FDA developed a 3500 Form app so folks can complete and submit forms using their Smartphone. Social media is the way we have to go; can't rely on existing forms in MedWatch. – Genentech, Bruce Donzanti - pilot to look at cardiac toxicity. Are there patients discussing MI or Afib on social media? Used 4 forums, Reddit, Twitter and Inspire. Looked at 12,600+ posts most of discussion was around in-scope diagnosis -MI (80%), Afib (3%). Inspire provided the richest data. 58 posts had MI or Afib as an AE; 46 total posts provided the drug name 23 for MI, 23 for Afib. – 7 different drugs mentioned, several did not have these AEs in product label (See slide 4). A couple of striking differences seen between electronic health records and administrative claims data vs. social media. 1) Discussions are more on MI than Afib in social media versus the number of cases identified in EHRs over the same time period and 2) social media had far more discussions on the use of Adderall in association with MI and ibrutinib in association with Afib than indicated in either EHRs or	Penn State, UNC, Merck, Abbvie, Patients Like Me

	administrative claims data. Pilot identified 11 events for further investigation. Efficiency of manual curation is an area for development moving forward.	
Session 1 Panel Discussion (930-1025)	– Should we do pilots before jumping in to ascertain the value of social media? There is no gold standard for drug safety source. EMR and claims data are only as good as the data being entered. Lack of correlation between data from social listening and EHR exists. Social media might be better for identifying manufacturing defects than traditional sources. To what degree can this compliment existing sources and provide incremental value– perhaps it's more around the topics that patients won't talk to their health practitioners about and that won't manifest clinically. – Is social media data or evidence? Lots of rich conversation which varies by selection of social media site. It is an ecosystem of data with methodologies etc. in order to get a picture of the current state of affairs – social media is just a component of this picture. – Need to establish trust with patients before there will be an exchange of information, It is important to recognize the demographics associated with the various social media sources as we look to reach out/engage with patient perceptions. – More questions surface than answers from the pilots and that is acceptable, although it can create confusion. Good to stay engaged with regulators to gain clarity on expectations as you develop pilot projects. – We all have a common goal at the end of the day and that is bringing the best possible products to patients. Partnerships like CSRC are about breaking down barriers to this goal and protecting and promoting public health. Patients want to be heard. – Interested in doing pilots and gathering new knowledge. Building and advancing the science behind having patient insights – establishing standards and criteria for assessing and evaluating this data given all the unknowns and rapid pace of social media. A reasonable approach should allow progress; we can't wait for regulations to guide us. – May need to reorganize how patients interact with their healthcare system – need lower barriers to communication. Should hospitals open Twitter accounts? PV is placed on pharma to distill and report to regulatory authorities...maybe this is wrong chain of communication. How many medical related communications are we seeing in SM that don't go to the healthcare system? How much more useful would it be to direct these to an information source (not thinking of a third party but within the patient-provider context) that would responsibly respond in timely ways? Need to be flexible in our approach and guidance. Two way communications creates a sense of duty. – Begin with the end in mind as you embark on pilots – what is going to be done with this data beyond RWE, safety signals.	OD, ND, LS, BD

	– 3 components: 1) data source (demographics are a moving target), 2) additional languages and the way people talk about conditions will introduce complexities in terms of coding, 3) what type of AEs would be more useful to use (high background rates vs. not i.e. signal vs. underlying disease). Bruce gave example of using the word "heart attack" as a synonym for MI and what it brought out in the posts (e.g. this game is going to give me a heart attack!) – FYI - Epidemico has compared FAERS and social media posts.	
Session 2 (1035-1110)	***Practical considerations of social listening for cardiac safety – why this is valuable*** *Session chair: Melissa Truffa, Abbvie* **Patient perspective** (Sally Okun- PatientsLikeMe) **Regulatory perspective MHRA** (Phil Tregunno, MHRA) **Regulatory perspective FDA** (speaker TBD) **Pharma perspective** (Mondira Bhattacharya- AbbVie) – PatientsLikeMe, Sally – founded in 2004 by an ALS family to share experiences with the disease; deep patient data and experience in 30-40 life changing diseases (430K pts, 2300+ conditions; 30+M structured data points, 3+M free text posts) – create value from patient generated data. Have over 70 research publications. Entered into a collaborative research agreement with FDA to further understand the value of this social network and its data (learn about patients living with life-changing diseases, connect with others, track their journey and outcomes). Using ethnography approach to illuminating insights into common events, feelings and questions across patient/caregiver journey. Longitudinal profiles are available for others on the site to see (can provide as much or as little as they wish). Moving into wearables and fitbit data. All data is mapped to standard vocabularies (MedDRA), working with the FDA to share the science/coding that occurs with this data; how do you know the data is real? Compared IMS Health Data (94% of the patients were able to be identified in the IMS data). Continuing to apply structure to the patient data on PatientsLikeMe to provide insights. – MHRA, Phil Tregunno – worldwide evidence vs. privacy requirements across the globe. When you analyze a global dataset you have to understand the similarities and the differences (different legal and ethical frameworks, cultural diversity, etc. – how to make best use of the data for safety purposes). Active engagement vs. passive listening. Encourage dialogue and documentation of the approached being taken with regulators. Important to think about evidence and the conclusions/correlation being made (might need to use different analysis techniques for social media data). WebRADR helped highlight the utility of social media data – patient tolerance, impact of events to the patient. Opportunity - allows us to look at other areas where we haven't traditionally been able to gather data. – FDA, Carol Pamer – Postmarketing Safety Monitoring – learn new risks, unsafe use of drugs etc. Social media	MT

	may provide potential for faster signal detection? More efficient? Information not available from other sources (e.g. why do pts switch treatment – safety concern, insurance issue, not effective, etc. and what can we do as a result of these insights?) data quantity does not equal data quality for decision making. Amounts and data are rapidly increasing. Claims and EHR (more structured) has been the focus – need new methods and tools to see how patient generated data can be useful. FDA worked with Epidemico to see of social media can yield earlier detection of safety signals (results forthcoming). Collaborative with PatientsLikeMe to systematically explore the potential of patient-generated data - Can we improve patient outcomes using patient insights. For reporting purposes, AE data from social media with the required elements should be treated as spontaneous adverse events. – FDA, Sara Eggers – interested in gathering patient perspectives on their conditions and treatment options. Patients are uniquely positioned to inform understanding of the therapeutic context for drug development and evaluation. PFDD (Patient Focused Drug Development) meetings 2013-2017 – trying to elicit patient perspective on their disease and treatments. Issue Voice of the Patient Reports from each PFDD meeting – hoping to support drug development more broadly and to foster engagement with the patient community. Working to figure out ways and new methods to interpret this data received from the range of sources (multiple surveys, etc. – AbbVie, Mondira Bhattacharya – tantalizing to embrace social media as it represents big data, real world data and patient-generated data but you need well-formed questions to avoid chaos and to really add value. What sites should you select, need to understand the limitations, what can we learn that we didn't already know. The answer for AbbVie when conducting a pilot using 24 months of Facebook, Twitter and patient forum data provided by a third party vendor was that they didn't identify any signals for both old and newer products that they had not already known. Social media from their experience may not be the data source for identifying rare, serious adverse events but may be most suitable for products with certain profiles (e.g. drug misuse/abuse), medication errors, product quality issues, off-label uses. Social media data might also support confirmation of signals identified from standard sources, provide patient insight on decision-making, risk management, benefit-risk assessments, risk effectiveness studies. AbbVie enters cases that don't contain all 4 elements for reportability, which raises another concern since regulatory agencies have not provided definitive guidelines yet; should social media posts without all 4 elements available be entered into company postmarketing databases?	
Session 2 Panel	– 4 elements of reportability – what are regulators perspectives on social media and reportability? One	SO, PT,

Discussion (1110-1200)	view is that social media data appears more useful at an aggregate level rather than at individual case level. There is a requirement to follow-up where appropriate...so you may likely run into privacy issues and should weigh the risks of privacy with follow-up. Encourage pharma to document in a clear narrative what approach you are taking and why. Secondary use of data should be considered – social media could be considered a secondary use. If you see a potential signal you would want to report out according to signal management practices. Working towards an appropriate framework to address these considerations. – Tweets/bots/internet trolls that distort the true picture/information around a product and potential safety considerations. Not everyone's intentions are good on the internet. If we do see something that appears to be a signal in social media, we would look for other evidence in our other data sources before making a conclusion. Privacy considerations should include deidentifying the data and being as transparent as possible (e.g. publish and present what we're doing, firewall PV/RWE from promotional/commercial activity, etc.) and will continue to evolve as we gain more experience with social media. – So by gaining access to global data via social media, what does this do/how does this benefit the cardiac safety consortium? Electronic media and sharing offer ways of communicating that we haven't had before...what does this do for cardiac evaluation? Maybe we need another forum of patients taking new drugs where they can share experiences (like a PatientsLikeMe). Tweeting is not the most used tool in elderly or underserved populations. Does passively mining versus deliberately creating a forum that serves the purpose make sense. PatientsLikeMe (PLM) was not set up to be a safety surveillance system; PLM environment is not geared towards that objective – so PLM developed reasonable approaches to getting information from patients, pushed back on first couple of pharmas that approached them trying to impose pharma requirements on PLM and then instead worked with pharma partners to facilitate their meeting their regulatory obligations from information provided on PLM (e.g. PLM will send a message to patient letting them know their AE has been reported to the manufacturer and providing contact info. if patient wishes to follow-up; PLM would not issue 3 follow-up letters to patient which is a pharma requirement not a regulatory obligation for PLM.) – MI, stroke, death – these are big events and the tip of the iceberg; listening to patients as they report such events in social media circles, could cause others to miss the potential benefits of a medicine because of concern over such events. What are the patient concerns and what is keeping them from being exposed to potentially beneficial therapies. – Ethical vs. legal considerations to balance = there are risks to taking particular approaches. Might be useful to	FDA, MB-A

	assess media impact on what we're seeing in social media data.	
Session 3 (1245-1305)	***What evidence is needed to inform use of social listening for cardiac safety*** *Session chair: John van Stekelenborg, Janssen* **Social Media-people sharing** CV experiences (Amir Lewkowics, Inspire) **Academia point of view** (Mitchell Krucoff, Duke Clinical Research Institute) **Cardiac risk factors** (Kevin Campbell, UNC) **Industry point of view** (John van Stekelenborg, Janssen) – Inspire, Jeff Terkowitz – social network for health that connects patients and caregivers in a safe, permissions-based manner. 800K members (100K in cardiovascular); 100 non-profit partners; more than 40% of consumers say the information found on social media affects the way they deal with their health. Inspire posts have much more depth (1600+ characters) than Reddit and Facebook. Enormous trove of data regarding conditions and treatments. – Duke Clinical Research Institute, Mitchell Krucoff - need to determine accuracy with respect to condition (MI, arrhythmia, reflux, etc.) and causal inference when deciding what evidence actually exists. Minimizing bias (media and other "viral" influence on public awareness (i.e. Oz presenting something on his show, legal commercials for compensation if harmed by product x etc.). Ethics and health information ("public" vs. private information) – who gave who what permission to share what? e.g. Grandma having a heart attack after taking a pill and the granddaughter tweets that Grandma had a heart attack after taking a pill. Analytic Objectives become important – confirming a signal, detecting a signal, mitigating a safety signal (restoring public confidence). Need to understand the relative and incremental certainty & cost/resources vs. other sources/modalities. – Janssen, John van Stekelenborg – how do we handle processing and reporting (Select few vs. entire dataset; integrate with other sources; does it add value at the end of the day). Useful to get a sense of how frequently your product of interest is being discussed (e.g. 220 ProtoAEs/mo vs. a handful in the case of a small biotech). Unexpected cardiovascular event pops up on a blog – can/should Company X contact this patient? i.e. requires a balance between privacy and public health. Quality and credence of posts as well as novelty are helpful considerations – social media might be better for quality of life type questions. Want to be able to focus your resources, – UNC, Kevin Campbell – why not go where patients are and where they need us to be? We must take advantage of social media/online networks. Tweeters expect a response within 12 minutes of tweet. Social media provides real time access to thoughts/ experiences.	JvS
Session 3 Panel Discussion (1305-1410)	– A signal does not mean causal relationship. 9 out of 10 signals turn out not to be causally related. Rarely do we rely on a single source to assess signals and whether causally related. Social media is meant to be another	AL, MK, KC, JvS

	tool in the armamentaria; it is a safety expert who needs to make the assessment and determination of causality. – Social media crowdsource challenge to identify AEDs in Phila area – volunteers identified 1500+ AEDs and are now mapped and available on Google for emergency responder use. – So in light of all this information, where is the low hanging fruit for cardiac safety. What can we converge around? – Are we more likely to hear health information on social media from educated people vs. underserved populations/lower education/lower socioeconomic status? PatientsLikeMe have found e.g. Epilepsy is generally more represented across populations. Often will put strategic engagement plans in place to increase representation where needed. – Quality to noise ratio will vary based on social media source – how do we sort this out because quality is critical for answering our cardiac questions. We need to work together in venues like WebRADR to answer these questions. Consider using Voice of Patient Reports or PatientsLikeMe characterization data to help identify the best source(s) of information for cardiac purposes. – What happens when patients are made aware that their medical/treatment experiences are being listened to for patient safety/public health purposes? What impact does that awareness have on the quality of such posts? – Working towards international regulatory convergence – what cultural differences are there that might impact what we're seeing in social media e.g. in Japan, a cancer diagnosis is shared with the family and they decide whether to tell the family member about the diagnosis. GSK is looking to assess cultural differences in Middle East social media data – should have something to report out by early next year. Epidemico is working to train their NLP algorithms to recognize certain language idiosyncrasies. – Once there is awareness of social listening for safety activities, will social media channels facilitate or block such efforts? Facebook, once aware of social listening, decided to create barriers and revoked access to their data despite it being publicly available.

Closing Remarks (1410-1430)	– What are the potential best uses of social listening for cardiac safety? Could include: Patient perspectives, adherence/compliance/barriers to care, product quality issues, etc
	– Stated differently, what questions are we trying to answer with social listening?
	  – What is the goal at the end – is it more than just signal detection?
	  – Social listening could be a way to learn about patients' perspectives, values, preferences, concerns
	– Science/methodologies are evolving
	  – Engage with regulators and each other to help

	progress the science around understanding and using patient insights for (in this case) cardiac safety – Is social listening only passive or can it be an active dialogue? – Are social media a data source or a way to engage with patients? – Moving forward, the White paper can be a summary of what was presented here at the Think Tank or it could inform next steps/future efforts. Whitepaper will be published.	
Feedback/ Questions	– This is the beginning and not the end of the journey into unlocking social media for cardiac safety. – Slides will be posted on the CSRC website	ALL
Meeting Close	– 2:15 PM Eastern	

Open Actions for Reference (3):

Ref	Description	Who	By When	Update
6/03-1	Post slides and recording of the Think Tank to the CSRC website	Valerie	23-Jun	
6/03-2	Issue minutes to Valerie for posting to CSRC teamsite and distribution as appropriate (team members? meeting attendees?)	Michele	20-Jun	Issued draft meeting minutes to Valerie and speakers 12-Jun-16 for revisions/additions.
6/03-3	Reference patient engagement poster on DIA website.	ALL	30-Jun	Patient Engagement efforts will be featured at the Annual DIA in June in Philadelphia.