Member News!

We hope you are all enjoying your 2015 thus far. We have a lot of planning in store for the year. EPICC’s Director’s have a Strategic Planning Session scheduled for the first week of February. The purpose of this session is to identify what our membership wants and needs are, and how we can better support those throughout the year. We had a very successful joint conference in the fall of 2014 and look forward to bringing more exciting events to you this year.

If you have any suggestions, please let us know.

Also, Memberships are up for renewal. You can renew your membership by logging in on the website www.epicc.org

If you need assistance with your log in information, please contact us at info@epicc.org and we will help you get signed in. It is also our members’ responsibility to keep their profiles up to date, so check it out and make sure we are displaying the current information for your business.

As part of the new anti-spam legislation, we will be asking on our renewal page for permission to contact you, as a member of our organization, in the future. Make sure you agree so we will keep you updated on EPICC news and other information throughout the year, otherwise you will not hear from us and could miss out.

Using Social Media Data to Identify Outbreaks and Control Disease

Could infectious disease surveillance systems that accurately track social media data inform early warning systems and outbreak response?

Article by Justine Brown, veteran journalist who specializes in technology and education

The recent Ebola outbreak unearthed an interesting phenomenon. A “mystery hemorrhagic fever” was identified by HealthMap— software that mines government websites, social networks and local news reports to map potential disease outbreaks — a full nine days before the World Health Organization declared the Ebola epidemic.

This raised the question: What potential do the vast amounts of data shared through social media hold in identifying outbreaks and controlling disease? Ming-Hsiang Tsou, a professor at San Diego State University and an author of a recent study titled The Complex Relationship of Realspace Events and Messages in Cyberspace: Case Study of Influenza and Pertussis Using Tweets, believes algorithms that map social media posts and mobile phone data hold enormous potential for helping researchers track epidemics. “Traditional methods of
collecting patient data, reporting to health officials and compiling reports are costly and time consuming,” Tsou said. “In recent years, syndromic surveillance tools have expanded and researchers are able to exploit the vast amount of data available in real time on the Internet at minimal cost.” Given the popularity of social media, infectious disease surveillance systems that use data-sharing technologies to accurately track social media data could potentially inform early warning systems and outbreak response, and facilitate communication between healthcare providers and local, national and international health authorities.

A Shifting Approach

Indicator-based methods that rely on the collection and analyses of data based on protocols tailored to each disease are the most common method of disease tracking today. But such methods can’t detect potential threats quickly. In addition, they are poorly equipped to detect new diseases. Given such facts, some health agencies have begun to consider new ways to monitor symptoms in order to speed detection. Additionally people do not always visit a doctor when they feel sick, making data collected from doctors and hospitals less useful. Yet people who stay home sick are likely to use social media to discuss their illness or search websites like Google to investigate their symptoms.

Currently there are no official national programs for disease surveillance via social media, but several systems are being used as complementary sources of information. For example, disease detection app Flu Near You helps predict outbreaks of the flu in real time. Users self-report symptoms in a weekly survey, which the app then analyzes and maps to show where pockets of influenza-like illness are located. Flu Near You is administered by HealthMap in partnership with the American Public Health Association and the Skoll Global Threats Fund. The effort is supported with private funds to demonstrate its utility for multiple sectors that work together on pandemic preparedness.

The information on the site is available to public health officials, researchers, disaster planning organizations and anyone else who may find the information useful.

“There are real opportunities for using this data that is scattered across the Web in news, blogs, chat rooms and social media,” said John Brownstein, HealthMap co-founder and associate professor of pediatrics at Harvard Medical School. “We’re focused on collecting all that information using data scraping, machine learning and other processes and combining it into one platform that will enable clinicians, public health practitioners and consumers to see what’s happening.” Brownstein said the volume of data that can be collected today is what predicates the value. “One individual on social media talking about their illness is not going to be that useful,” he said. “But in aggregate, that information can tell us really useful things about epidemics. It can even tell us about new things, like the Enterovirus epidemic that we recently experienced. So we are developing systems that are much more crowdsourcing in nature. We are trying to better engage the public, to put the ‘public’ back in public health. That provides us some really exciting opportunities to understand what’s happening on the ground level.

Understanding the accuracy of such information is also important, said Tsou, whose recent study explored the interaction between cyberspace message activity (measured by keyword-specific tweets) and real-world occurrences of influenza and pertussis. Tweets were collected within a 17-mile radius of 11 U.S. cities chosen on the basis of population and the availability of disease data. Tweets were then aggregated by week and compared to weekly influenza-like illness and pertussis incidence. The correlation coefficients between tweets or
subgroups of tweets and disease occurrence were then calculated and trends were presented graphically. “The correlation between the weekly flu tweets versus the national flu data was almost 86 percent,” said Tsou. “It was a very high correlation. Even more interesting is that when we compared our data to data from the San Diego County Health and Human Services Agency, who we partner with, we received even more precise data on weekly flu cases reported through their lab testing.

The correlation was 93 percent — even higher than the national level. That was a very encouraging finding.” But utilizing social media data in this manner also presents challenges, such as correlating a social media post with a specific disease or condition. “A lot of people tweet that they have a fever or have the flu, but sometimes that information isn’t specific enough for us to connect it with a disease like whooping cough,” Tsou said. “That’s one of the limitations we are dealing with.”

“There’s both a blessing and a curse to using social media in that it’s super rapid, but it also generates huge amounts of noise,” Brownstein said.

“Dealing with all the noise and trying to pick out the signals that have meaning is definitely a challenge.”

**Public Health Possibilities**

Some public health agencies are already beginning to rely on social media data to investigate health issues. For example, last year the Chicago Department of Public Health began using Twitter to identify cases of foodborne outbreaks. The department teamed up with a group called Smart Chicago to develop an app that analyzes tweets that reference food poisoning, leading the city to step up inspections and enforcement on offending establishments. The New York City Department of Health and Mental Hygiene is taking a similar approach. It recently worked with Columbia University and Yelp on a pilot to prospectively identify restaurant reviews on Yelp that referred to foodborne illness.

“These systems are operational, and they are being used by government entities to provide situational awareness,” Brownstein said. “They’re not necessarily the only sources of information, but they are an important source of information.” But it may still be a while before public health departments officially adopt social media data as a significant element of their regular investigations. “Public health officials tend to be very conservative,” Tsou said.

“They want to make sure social media can really demonstrate a value for predicted disease outbreak. There is still a long way to go in terms of communication and education. But I think there is great promise and potential for using social media as a public health tool.”

“The use of social media for public health surveillance and disease detection is an evolving work nationwide,” said Jeffrey Johnson, a senior epidemiologist for the San Diego County Health and Human Services Agency.

“Most of the work is still within the realm of research and academics, some of whom are validating their work with real events detected through different systems and reporting channels.” Johnson added that while San Diego County Public Health Services does use social media quite a bit as a media and communication tool, the county is not currently using social media for surveillance and disease case finding.

**Going Mainstream**

The Milbank Quarterly recently published a study on the challenges facing practitioners as
they consider ways to integrate social media and Internet data into the detection and management of disease outbreaks. Researchers involved in the Social Media and Internet-Based Data in Global Systems for Public Health Surveillance study found some of the limitations of event-based surveillance: Information isn’t always moderated by professionals or interpreted for relevance before it’s disseminated to epidemiologists; there’s no standardized system for updates; algorithms and statistical baselines aren’t well developed; and new information about health events isn’t disseminated efficiently.

On the positive side, because it occurs in real time, event-based surveillance can identify events faster than indicator-based surveillance. Ultimately the authors concluded that event-based surveillance could improve surveillance activities, but not without systematic evaluation within a public health agency. Brownstein agreed.

“There needs to be a way for representing that data in a way that’s useful for decision-makers,” he said. Yet the combination of indicator-based and event-based surveillance has potential for improved overall “epidemic intelligence” that could help monitor outbreaks and disease risk. And it may have other benefits.

“Even more important is the situational awareness that can be derived from the mining of social media data,” said Brownstein. “What are the impacts of outbreak events at the societal level? We can pick up these kinds of things through these channels. There’s value in understanding the public perception and communication and how government can refine its communications based on the response of the population. Using social media to understand people’s attitudes and beliefs in that way is extraordinarily powerful.”

This article was originally published by Government Technology and posted on Emergency Management: http://www.emergencymgmt.com/health/Social-Media-Data-Identify-Outbreaks.html.

Earthquakes and other damaging events can affect the structural integrity and/or non-structural elements of a building such that the safety of occupants throughout the building, or in portions of the building and surrounding areas, is compromised.

Or, as occurs in many cases, there are no sustained impacts to the building and it remains safe to occupy. In which category – potentially Safe, Unsafe, or somewhere in between (including brief entry allowed for access to contents), will your building(s) be? Local Authority building officials may take days or weeks after an earthquake to formally assess your building(s) and give you an answer.

**Upcoming event!**

**Post-Earthquake Damage Assessment of Buildings - Training Seminar (ATC-20) - February 24, 2015, Vancouver**

Skye Emergency Preparedness is pleased to present a one-day training seminar on building damage assessment for safety of occupancy (often referred to as Rapid Damage Assessment) after an earthquake. The seminar will also briefly address damage that may result from a flood or wind storm.

The seminar will be held at The Sandman Hotel Vancouver City Centre (180 W. Georgia Street) on February 24, 2015. To register and for more information, please contact EPICC Member, Doug McLeod at 604.996.3504 Doug@SkyeEmergencyPreparedness.com
Can you be self sufficient for 72 hrs?

Check out this article from the Province titled “Shaky Ground”, which featured one of our long time members, F.A.S.T. Limited.

An article from bc.ctvnews.ca
300,000 at risk in Lower Mainland flood: experts
Jon Woodward, CTV News, Reporter

More than 300,000 homes and billions of dollars of infrastructure could be affected by a major flood in the Lower Mainland because our dikes haven’t been built to withstand more severe flooding caused by climate change, reports and experts say.

A $500,000 push is under way to assess how bad the damage could be and where is vulnerable – the first step to unifying a fragmented Lower Mainland flood management strategy, said David Marshall of the Fraser Basin Council.

“To me, this the most critical issue that the Lower Mainland will face in the next 15-20 years,” Marshall told CTV News.

There are some 1,100 kilometres of dikes in B.C., with 600 kilometres in the Lower Mainland. Much of that was built through a federal and provincial program in the decades after a devastating flood in 1949, which washed away 2,000 homes.

In the late 1990s and 2000, cuts at the federal and provincial levels left municipalities in charge of the infrastructure, making B.C. one of the few jurisdictions worldwide without a region-wide flood authority, said flood consultant Tamsin Lyle.

“I would argue that we are extremely under-resourced when it comes to flood hazard,” Lyle said.

Some municipalities are aware of the flood risk and are actively investing in new equipment to protect their citizens, like North Vancouver, she said.

But others lack basic tools like flood maps, which can estimate where the biggest damage is likely to be, and require changes in new buildings in the area.

The disorganization becomes a huge problem now because flood risk has changed since the time those dikes were built, said Lyle.

Climate change models suggest that floods will be more severe and more frequent, putting pressure on the river dike system.
On top of that, sea level will rise, authorities say, with the City of Vancouver mandating that buildings must be prepared for flooding as much as 4.6 meters above sea level.

That means that even cities farther inland have to deal with the threat of a higher sea level, said Dana Soong of the City of Coquitlam.

“The current weather forecasts look at a sea level rise of meters,” he said. “We have to prepare for that.”

Lyle looks to the Calgary floods in 2013 to show off a worst-case scenario. In that flood, damages were estimated at more than $5 billion. Vancouver’s could be worse as it has a larger population with a larger river, as well as dangers from the coast.

The Fraser Basin Council’s Marshall says his organization has stepped in to unite the province, the federal government, 25 municipalities and other regional interests such as railway companies and pipeline company Kinder Morgan.

The non-profit has raised $500,000 to conduct a detailed study of the risks in the Lower Mainland, run through likely flood scenarios, and determine how best to allocate scarce resources to protect citizens, Marshall said.

That study will be finished at the end of the year, he said, and then the next job will be to figure out how to build the infrastructure required, he said.

Read more: http://bc.ctvnews.ca/300-000-at-risk-in-lower-mainland-flood-experts-1.2196450#ixzz3PKH1lskX

A message from FORTIS BC

What should you have in your emergency kit in case of an emergency or power outages? Find out: http://ow.ly/GePSp

Please submit and questions or comments about the newsletter to Executive Administrator, Lesley Carew – info@epicc.org

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