Viral

PULSAR

TRACKING THE SPREAD OF FLU ON SOCIAL MEDIA

About this MAGAZINE

Viral magazine aims to provide health care insights with an understanding of the current online landscape across the UK with specific insights on flu and its treatment and remedies.

All data and insights are derived through our proprietary audience intelligence software Pulsar.

Viral magazine is an example of how big data insights can uncover what is important to the wider audience and how people handle their health in a rapidly changing landscape.

About PULSAR

Pulsar is the next generation social listening platform that's taking audience intelligence to a whole new level.

Pulsar goes beyond keyword-tracking and text-mining; allowing you to map brand audiences, track how content spreads and find out how people discuss topics online. Pulsar uses cutting-edge data science and image analysis on premium data sources.

Pulsar is available as a subscription, giving you immediate insights into brands and industries, or as a service whereby our team of experienced analysts produce in-depth reporting on the topics you need to understand.

Our clients include; Facebook, Instagram, Twitter, Tumblr, Spotify, Mazda, Tesco, Telefonica, Allianz, Publicis and Havas.

Keeping your brand healthy

Facing a generation that is more likely to crowdsource answers to health questions rather than asking their doctor, what role does social media play for health care organisations nowadays?

With more people than ever turning to social media to garner support, share and learn about their conditions; great opportunities are created for health care organisations to better serve the public while building brand awareness.

That said, the open nature of online conversations poses challenges for health care organisations that need to balance these opportunities with existing privacy and confidentiality regulations.

That's why we're here: to help you navigate possibilities and build solutions that work effectively, and in line with regulations.

Head of Social Media Research

Who's talking?

This report focuses on the flu and flu-like sickness; something that effects us all, and is lamented over on social media by an equally wide range of people. Let's start with the big picture: how large is flu-related conversation online?

There are

10
million

mentions of flu, coughs and colds each year [1]

52% [2]

Females

34% [2]

Males

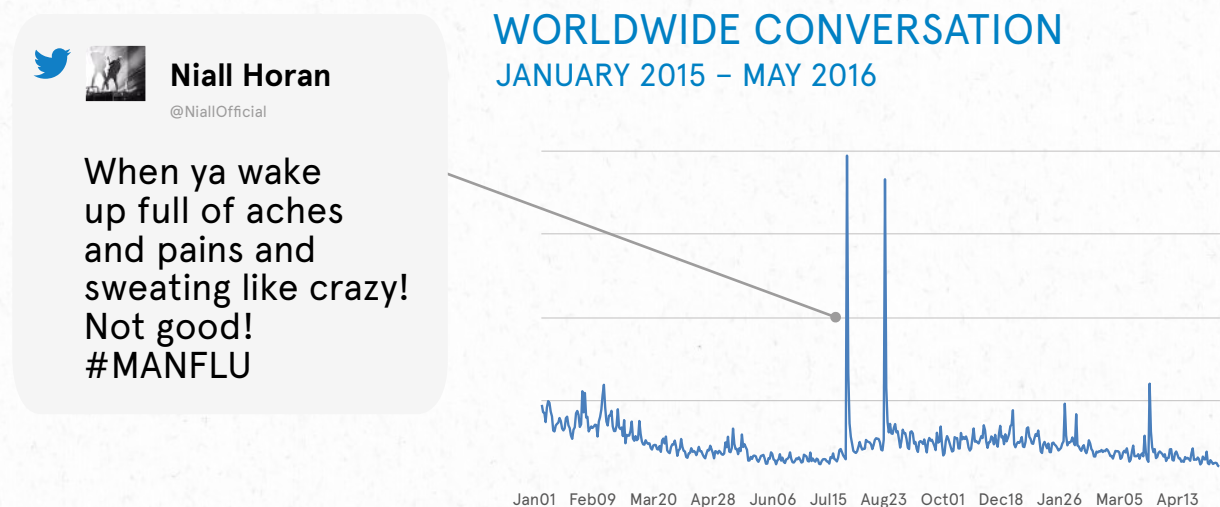**14%** [2]

Institutions

[1] Worldwide social interaction average from January 2013 to December 2015
[2] Social interaction: September 2015 – December 2015

Seasonality

While flu diagnoses come in annual waves, flu-related conversation online is relatively consistent.
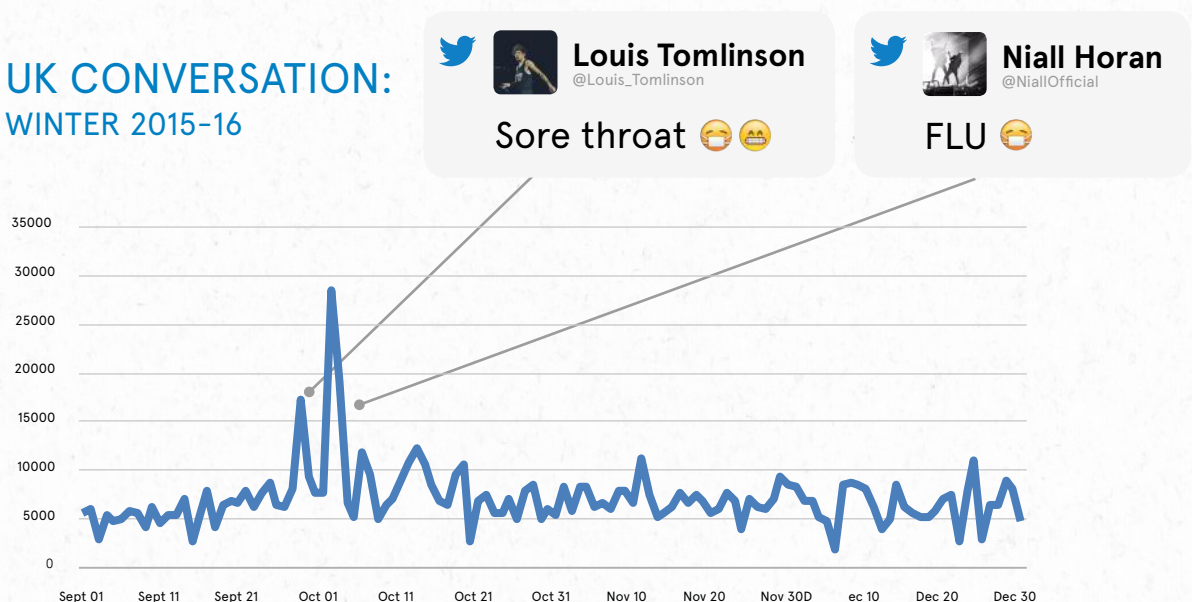
The explanation? Social media picks up people's ailments at home, before the need to visit the doctor. Flu diagnosis data misses out the thousands of people who are self-medicating with over-the-counter meds and duvet days.

Niall Horan
@NiallOfficial

When ya wake up full of aches and pains and sweating like crazy! Not good! #MANFLU

WORLDWIDE CONVERSATION
JANUARY 2015 – MAY 2016

Jan01 Feb09 Mar20 Apr28 Jun06 Jul15 Aug23 Oct01 Dec18 Jan26 Mar05 Apr13

Over 98k people worldwide had flu on their minds on August 30th 2015 when One Direction star Niall fell ill and tweeted about it. This could have come as a warning sign for fellow group member Louis' sore throat a month later, which garnered over 111.5k retweets. Such moments are rare but valuable opportunities for brands to engage with a huge audience.

By filtering conversation by location and time range, you can find the relevant talking-points through which to connect...

UK CONVERSATION:
WINTER 2015-16

Louis Tomlinson
@Louis_Tomlinson

Sore throat 😩😫

Niall Horan
@NiallOfficial

FLU 😷

35000
30000
25000
20000
15000
10000
5000
0

Sept 01 Sept 11 Sept 21 Oct 01 Oct 11 Oct 21 Oct 31 Nov 10 Nov 20 Nov 30 Dec 10 Dec 20 Dec 30
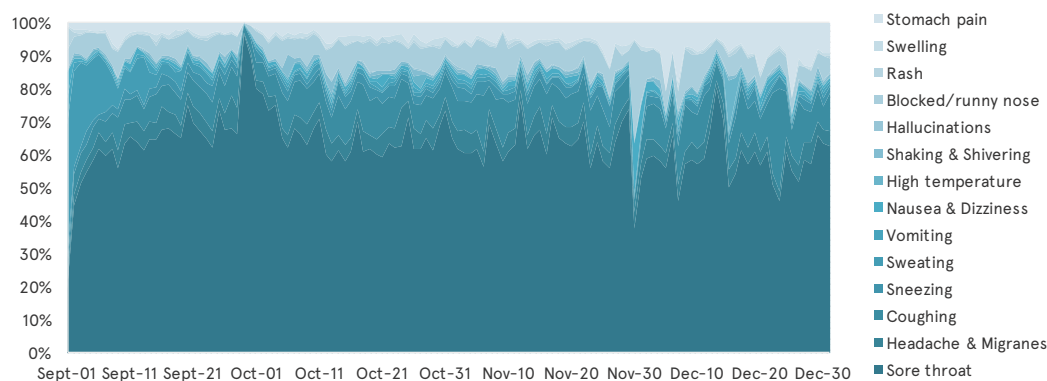
Flu Symptoms

MONITOR UNUSUAL OUTBREAKS OF SPECIFIC SYMPTOMS

What are the specific problems that people are responding to? How should health care brands respond to their needs? How can you know when and where the next flu outbreak will be? Let's explore the data behind the graph in order to locate the source of the problem.

Be ready to go. Right place. Right time.

SYMPTOM-SPECIFIC COMPLAINTS
UK, SEPT - DEC 2015

Legend: Stomach pain, Swelling, Rash, Blocked/runny nose, Hallucinations, Shaking & Shivering, High temperature, Nausea & Dizziness, Vomiting, Sweating, Sneezing, Coughing, Headache & Migranes, Sore throat

Sore throats are consistently people's predominant problem. A sudden rise in a less common symptom could be the all-important warning sign of a new strain of virus.

By monitoring these signals in real-time, flu outbreaks can be better predicted by time and location, in order to effectively allocate resources - such as pharmacy stocks, hospital staffing and public announcements. Whether you are coordinating on a local or national level, data like this allows for immediate responses to changes in people's health.

Case Study: *Norovirus*

Using social media data to help predict, rather than just report on diseases such as the Norovirus is something the Food Standards Agency (FSA) can now do at an 70% accuracy level.

Most researchers working on health and disease topics rely on information they receive from labs, hospitals and GPs. For example, collating lab reports of quantities of people getting a virus at a given time will give a good understanding when outbreaks occur, after they've happened. Useful? Absolutely. But how can you wrangle data to help you predict, rather than just report, on outbreaks of diseases in order to inform the wider public?
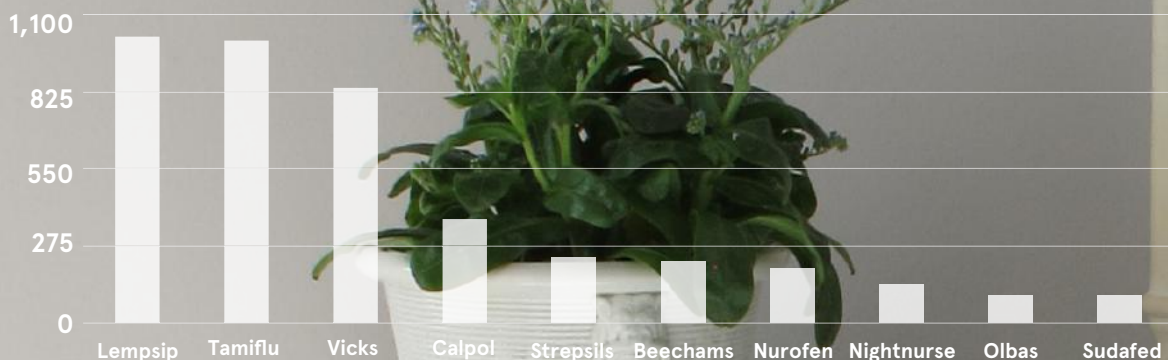
Read more

How far will people let their flu go, before turning to the drugs cabinet?

NOT VERY FAR...

With exception of Tamiflu, the top 10 mentioned drug brands are over-the-counter products. The most popular by far – *Lemsip* and *Vicks* – are non-invasive products that are easily integrated into day-to-day life. They are products that can be taken long before the rock bottom of flu is hit. They have successfully crossed the line into "medicating"-for-comfort.

TOP 10 BRANDS BY SOCIAL INTERACTION
UK, SEPT - DEC 2015

1,100	
825	
550	
275	
0	

Lempsip · Tamiflu · Vicks · Calpol · Strepsils · Beechams · Nurofen · Nightnurse · Olbas · Sudafed

Preventative medicine is much more popular

TAMIFLU appears almost as popular as Lemsip, until we have a closer look at what people are actually saying...

> "Some natural cold and flu remedies can stop an infection within 24 - 48 hours; Tamiflu takes up to 6 days."

> "Tamiflu is so dumb, have fun paying $200 w/ insurance for something that could've been avoided by a free flu shot"

> "Hmm. Side affects from a flu medicine being nausea and vomiting? I call your bluff, Tamiflu."

By coding for sentiment, we find that a staggering 64% of mentions speak negatively about the drug.

LEMSIP is used almost equally across the genders, and people certainly don't wait around. Taken both on-the-go, and at bedside, Lemsip means healing, warmth, self-carea and calm. A steaming mug of comfort.

> "Last bout of manflu required all 3 extended versions of the Lord of the Rings films. And Lemsip, lots of Lemsip."

> "Today, I will mainly be powered by lemsip #manflu"

VICKS mentions nearly double as many women than men are talking about their products. Rather than a stand-alone product, Vicks is applied along side pain killers and hot drinks. The splatter-gun approach.

We see that women tend to let their symptoms get a bit worse before turning to the drugs cabinet, when compared with men.

> "Need a proper Vicks vapo-Rub for my chest and back and flu mix then I'll be fine"

From the kitchen cupboard

THESE PRODUCTS INTEGRATE SEAMLESSLY INTO A PLETHORA OF HOME REMEDIES. WARM, SOOTHING, DRINKABLE, RUBBABLE, HOMEY...

Home remedies also give clues as to what people want to do, feel and taste when they are feeling under the weather. Pills are functional, but people are looking for something more... Something sensorial.

TOP HOME-REMEDIES BY SOCIAL INTERACTION
UK, SEPT - DEC 2015
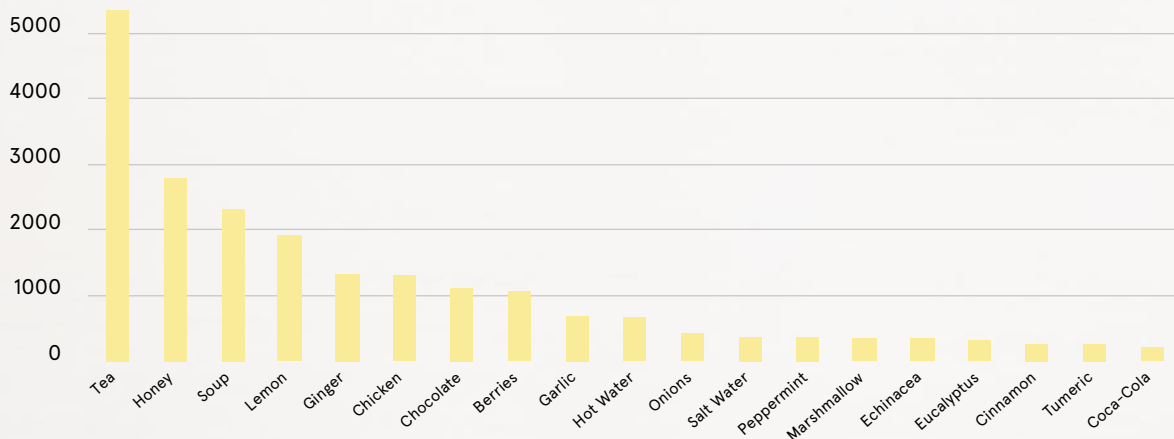
No drug is quite the same as a good cup of tea, but people try...

"Not saying I'm tired and man flu'd up today but I just put milk in my lemsip #eeeerrrrrrrrr"

"Public service announcement: Putting a lemon Earl Grey tea bag in a Lemsip cold and flu hot drink does not improve the taste. Thank you."

Attitudes to the flu Vaccination

Every year, new strains of the flu virus emerge. A new vaccine is formulated based on the WHO's recommendations from flu epidemiology around the world. Yet public perceptions of the changing vaccine are carried over from one year to the next.

We witnessed this in 2015-16, when vaccine uptake fell across all at-risk groups[1], following bad press for the 2014-15 vaccine, which achieved only 34% immunity effectiveness[2].

Looking to social media unearths public concerns surrounding the vaccine, and is crucial to developing a campaign that effectively shapes behaviours. We see a broad misunderstanding that the flu vaccine can in fact cause flu. Whilst people do fall ill post-vaccination, the #flumythbuster tweets fail to explain why, allowing people's lack of trust in the vaccine to prevail.

"Its #Flumythbuster time! Did you know the vaccine is the best way to fight flu? #flufighter"

"The flu jab is supposed to stop flu but all you get is a dead arm and flu."

Positivity is driven by efficient service, whether through the NHS, Boots Pharmacy, or UberHEALTH flu shots in NYC. Positivity over UberHEALTH in particular indicates that there is scope for novel modes of vaccine delivery to improve uptake rates.

"Just got my #UberHealth #dischempharmacies #discoveryhealth flu vaccine at work. Great iniative!"

"Flu jab done. In and out in seconds. "

In the short term, campaign monitoring can be used to inform the positioning and communication surrounding existing drugs. When scare-mongering, anti-vaccine tweets go viral, hospitals need to know so that they can address concerns before playground chat expands to widespread negative sentiment for the jab.

In the long term, we can draw guidance for product innovation. When the most common complaint about vaccinations is the needle itself, could a move to nasal spray administering transform uptake rates?

We anonymise all social information to protect the identity of the individual.
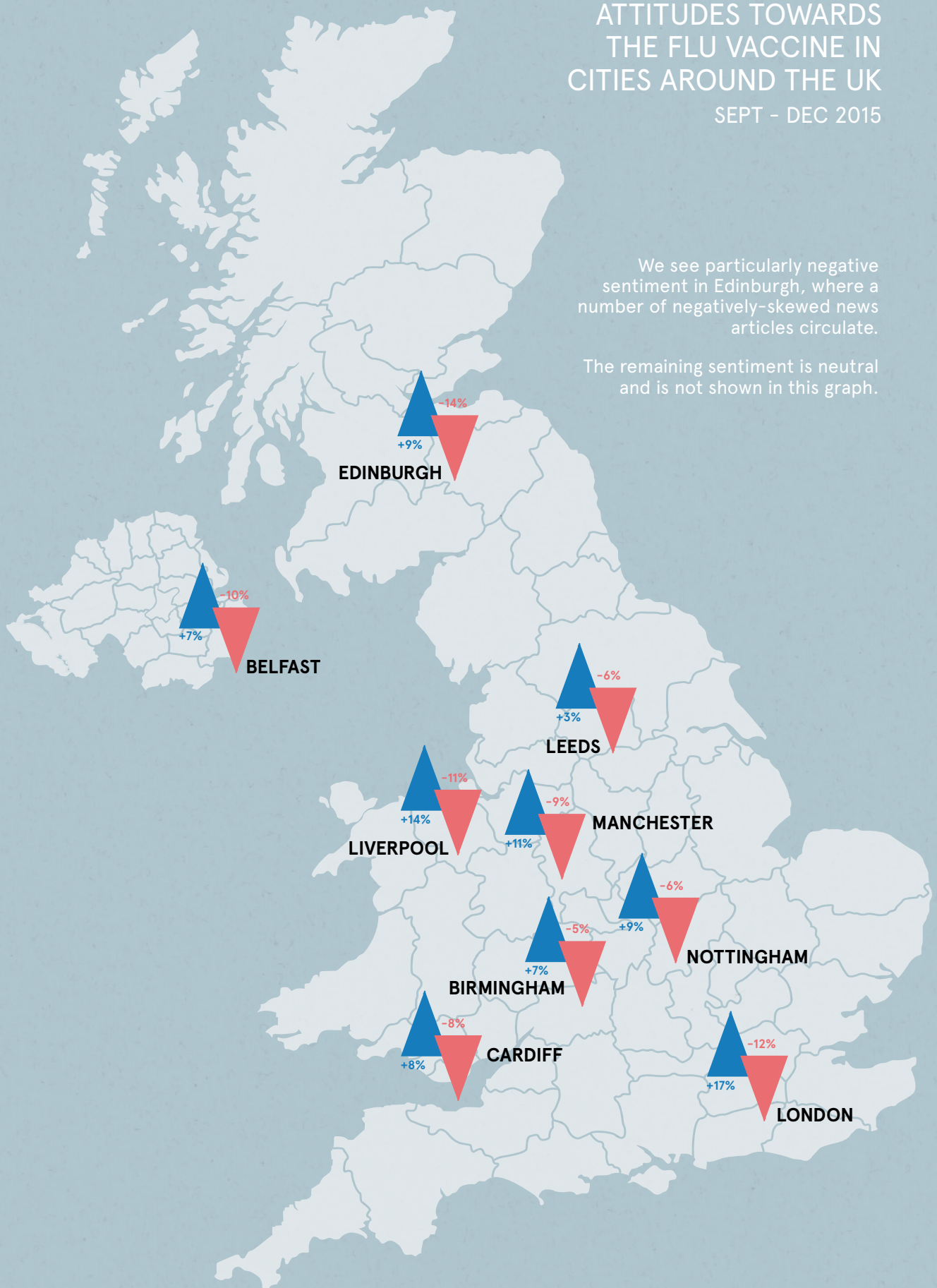1. http://www.pulsetoday.co.uk/clinical/immunisation/flu-vaccine-campaign-becoming-a-shambles/20030543.fullarticle
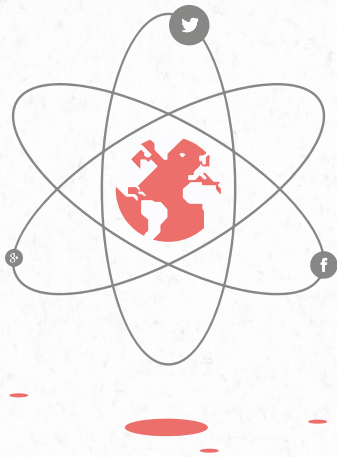2. https://www.gov.uk/government/news/final-flu-vaccine-effectiveness-data-published

ATTITUDES TOWARDS THE FLU VACCINE IN CITIES AROUND THE UK
SEPT – DEC 2015

We see particularly negative sentiment in Edinburgh, where a number of negatively-skewed news articles circulate.

The remaining sentiment is neutral and is not shown in this graph.

EDINBURGH +9% −14%

BELFAST +7% −10%

LEEDS +3% −6%

LIVERPOOL +14% −11%

MANCHESTER +11% −9%

NOTTINGHAM +9% −6%

BIRMINGHAM +7% −5%

CARDIFF +8% −8%

LONDON +17% −12%

Predicting and pre-empting for Undramatic Health care

Hannah Haddad has worked in social research across product innovation, brand, campaign and trend monitoring. Hannah comes from a background of Human Geography and Social Theory.

Expected annually, yet annually unpredictable, flu creates drama each year. Yet successful health care is entirely undramatic. That is, preventative health care, that keeps people at home and listens for the early signs of something much worse.

Currently, flu surveillance is retrospective – and its data targets the drama. We know how many people were hospitalised, or visited their doctor with flu-like symptoms year on year. We know where the viruses spread. We know how many people survived and how many did not. But such data for a strain that's been-and-gone is difficult to action. Flu surveillance doesn't look at the early complaints of coughs and cramps that crucially pre-empt the inundation of services, the spreading of a virus in a school, or the care home fatalities. This pre-emptive data does exist online. There is even strong evidence that Twitter content alone can predict flu outbreaks 1-2 weeks ahead of the Centre for Disease Control's surveillance average[1]. Yet,

despite its power as a real-time predictor, this data has so far been contained to stand-alone academic papers.

Ideally, social data needs constant monitoring, so that both public health and pharma can react promptly. Given that social media monitoring is relatively low-cost, it can operate year-round, in order to detect for unexpected outbreaks, rather than assume when to do the detecting. Currently, weekly government flu reports are issued during the months October – May. Given a changing climate, increased travel, and the dynamic nature of the flu virus, being unprepared for an outbreak outside of that time range could make it a costly assumption. Social

There is even strong evidence that Twitter content alone can predict flu outbreaks 1-2 weeks ahead of the Centre for Disease Control's surveillance average.

1. http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0019467

data can facilitate a day-by-day response to a fast changing virus, and importantly, detects the early signs while people are still at home.

But what about the people who do not speak up online? Women are more active than men on social media platforms, creating a gendered skew in conversation. Only 35% of over-65s – a group particularly vulnerable to flu – own a social networking account, and engagement rates decrease further with age[2]. So how does social media monitoring account for the digitally-invisible?

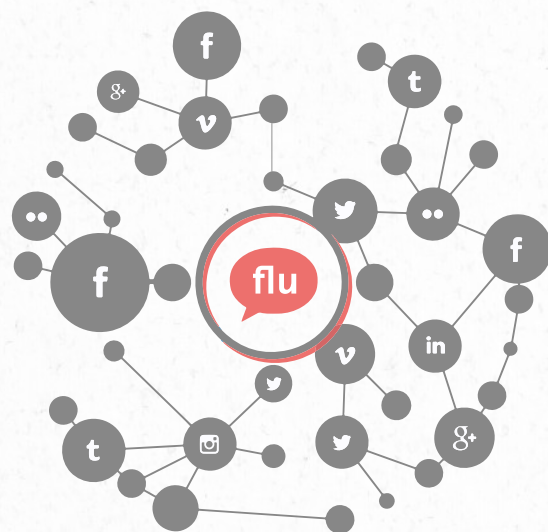The nature of big data means that we are not monitoring for individual cases of illness. Rather,

Social data can facilitate a day-by-day response to a fast changing virus, and importantly, detects the early signs while people are still at home.

since flu is transferable, we can work on the assumption that a rise in complaints of illness online reflects a rise in illness offline too. Online systems such as Flu Survey[3] offer ways for people to document their flu without piping up on social media. This means that more specific and directed questions can be asked. Yet what is gained in accuracy is forgone in the sheer volume of content on social media, where we listen with minimal influence on the answers. Organically-driven conversation is threaded with information into how flu fits into day-to-day lives, what it is associated with, what language is used, what are people's overarching concerns. This is implicit, yet extremely valuable information for institutions and brands that need to communicate with people on the ground in a meaningful way. In combination

therefore, social listening, digital surveys, and hospital administrative data all fill in for one-another's blind spots.

The instantaneous nature of social data brings with it a new pace of planning and action.

It's time to fill that social blind spot. For enhanced prediction. For social insight that informs effective communication with vulnerable people and the people who care for them. For health care that begins in peoples at-home lives, rather than incentivises otherwise avoidable visits to doctors and hospitals. For health care that listens to demand, so that products and services are ergonomic, and people are helped to manage their own health. The challenge therefore lies in actually integrating the wealth of social data into existing systems of surveillance. The instantaneous nature of social data brings with it a new pace of planning and action. Once we're there, we'll have a much more predictable and a much less dramatic flu season each year.

2. http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/
3. https://flusurvey.org.uk/

Concluding comments

What could our research team conclude from their work on this flu & cold report?

- Flu-related conversation is not seasonal, but rather consistent throughout the year.

- Conversation peaks are driven by celebrity sickness. These are light-hearted opportunities to engage with people outside of the expected health care persona, by affiliating with key conversation influencers.

- The long-term monitoring of flu conversation creates benchmark levels for each symptom. Deviation from these benchmarks can then be used to predict flu outbreaks by location.

- The most popular drugs are non-invasive and sensorial. They blur the line between over-the-counter and home remedies.

- A qualitative deep-dive into social conversation unearths practical obstructions and success factors behind desired public health outcomes. This can guide both campaigns and product innovation, in order to leverage patient behaviours.

Get in touch

Pulsar is available as a software subscription allowing you conduct your own research, or as part of a service whereby our experienced, in-house team of researchers create custom reports based on your needs.

To discuss options for the software subscription, please contact our Global Commercial Director James Cuthbertson. To discuss our research service offering, please contact Pulsar Research Manager Giuseppe Polimeno.

Giuseppe Polimeno
Head of Social Media Research
Giuseppe.Polimeno@pulsarplatform.com

James Cuthbertson
Global Commercial Director
James.Cuthbertson@pulsarplatform.com

+44 (020) 7874 6577
www.pulsarplatform.com

PULSAR

Viral