

# Social Media and Public Health: Opportunities in apparent chaos

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What is HealthMap?



Global

Local

News

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English

Search disease or location

Go Advanced Search

Display Options:    



Activity Index

Low High

Country level Province or local level

Alerts from past week

Avian Influenza (past month)

Drought in Africa 2011

673 Alerts Now Showing

Date: 12 Sep - 20 Sep | Diseases: all | Places: all | Sources: all | Categories: all

Source	Date	Summary	Disease	Location	Cases	Deaths	Significance
	19 Sep	<a href="#">PAKISTAN - Epidemics of cholera and dengue fever after floods ... - ...</a>	Cholera	<a href="#">Pakistan</a>			★☆☆☆☆ 1 vote
	19 Sep	<a href="#">Confirmed Foot and mouth disease in San Pedro, Paraguay - cattle</a>	Foot and Mouth	<a href="#">Paraguay</a>			★☆☆☆☆ 1 vote
	19 Sep	<a href="#">Food poisoning at the Galaxy</a>	Foodborne Illness	<a href="#">Macau</a>			★☆☆☆☆ 1 vote
	19 Sep	<a href="#">PRO/MBDS&gt; Avian influenza - MBDS region (12): Cambodia / Banteay</a>	Avian Influenza	<a href="#">Phum Ta Pho, Khétt Bântéay Méan Chôây, Cambodia</a>			★☆☆☆☆ 1 vote

# Social Media and Public Health

1. How does it fit into the traditional public health structure?
2. How do we find signals in it?
3. How can we use it in research?
4. How can you use it professionally?

# Traditional Public Health Reporting

1 →

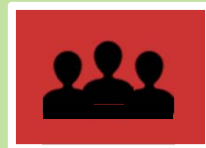


Public

2 →



Public  
health  
practitioners



Healthcare  
workers,  
Clinicians

3 →



Local  
Officials



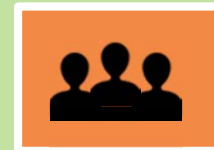
Labs

4 →



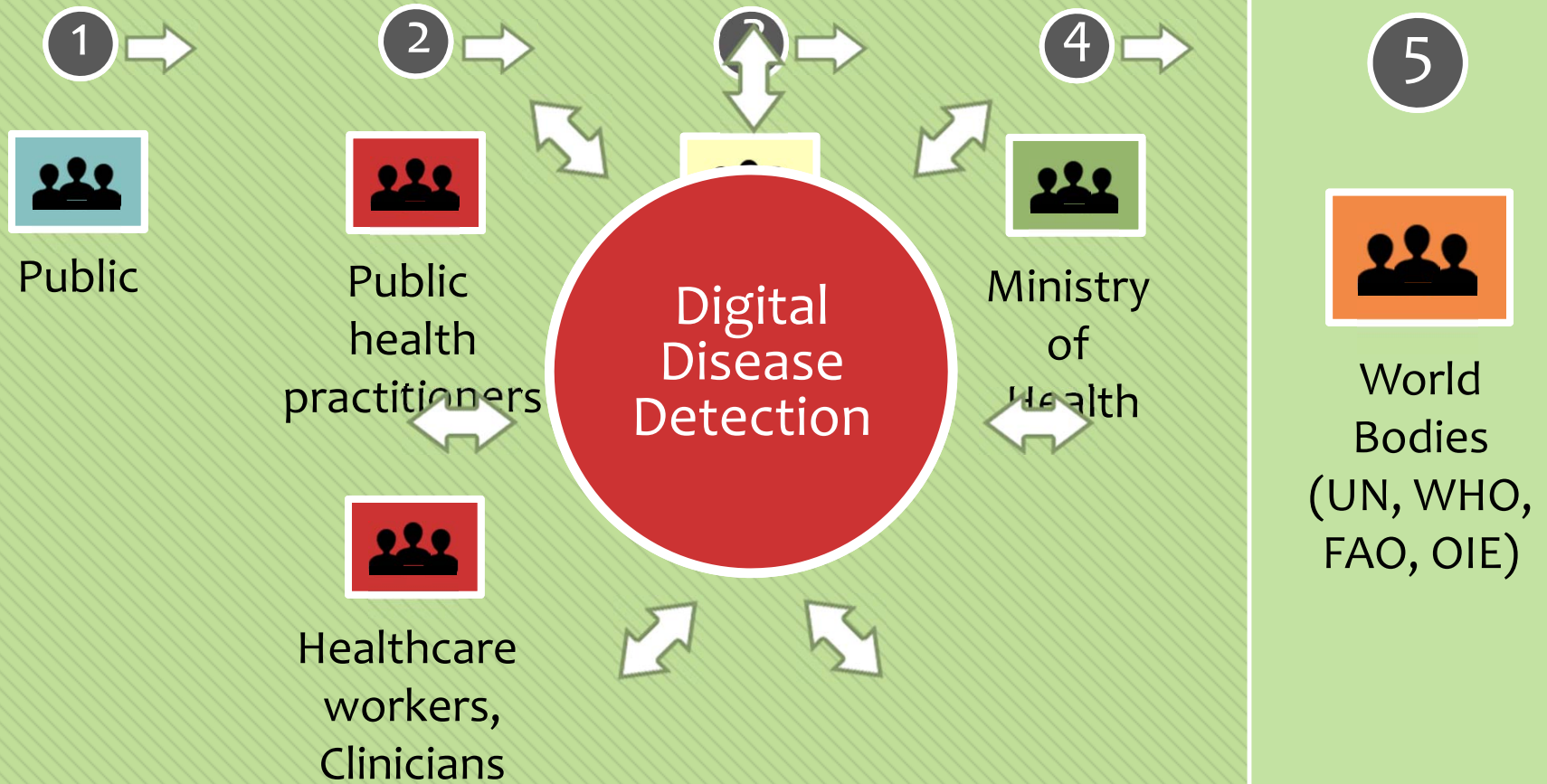
Ministry  
of  
Health

5



World  
Bodies  
(UN, WHO,  
FAO, OIE)

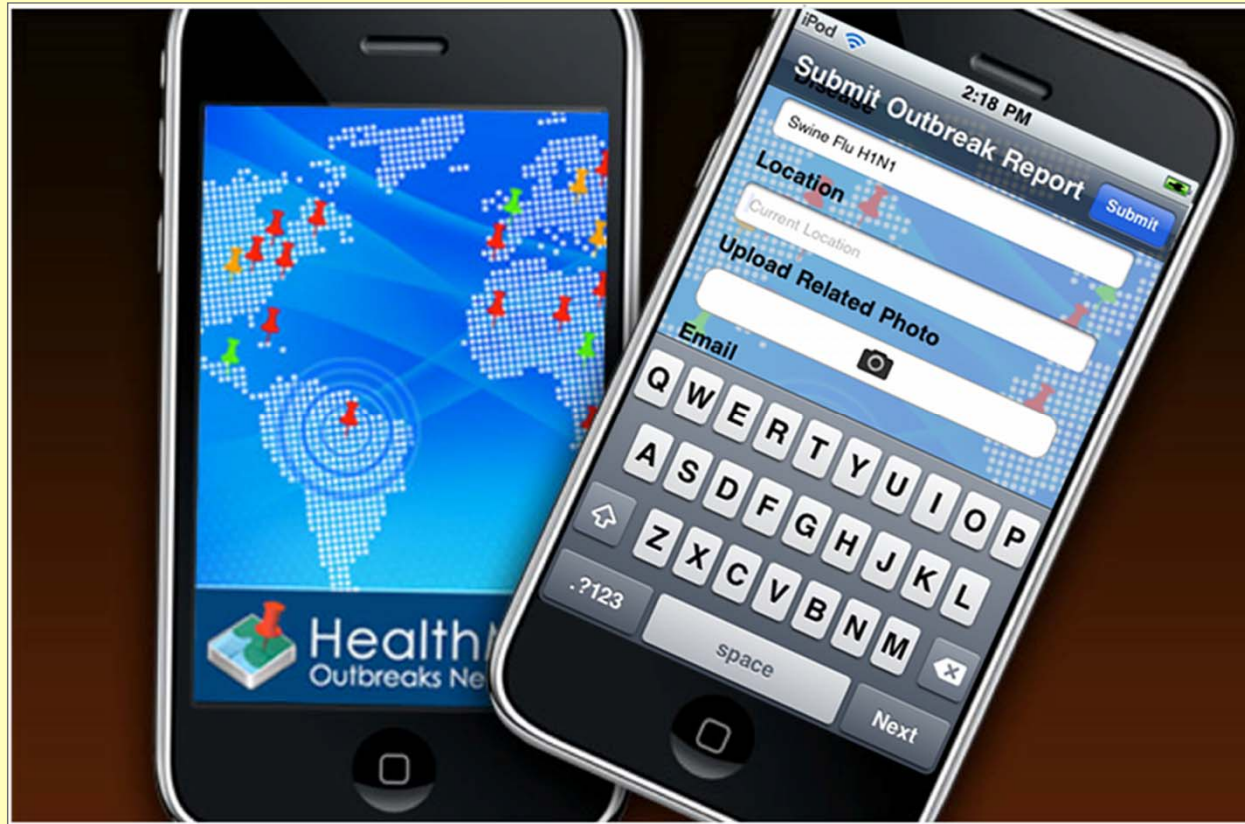
# Traditional Public Health Reporting



# Potential of Digital Disease Detection



# Finding a Signal



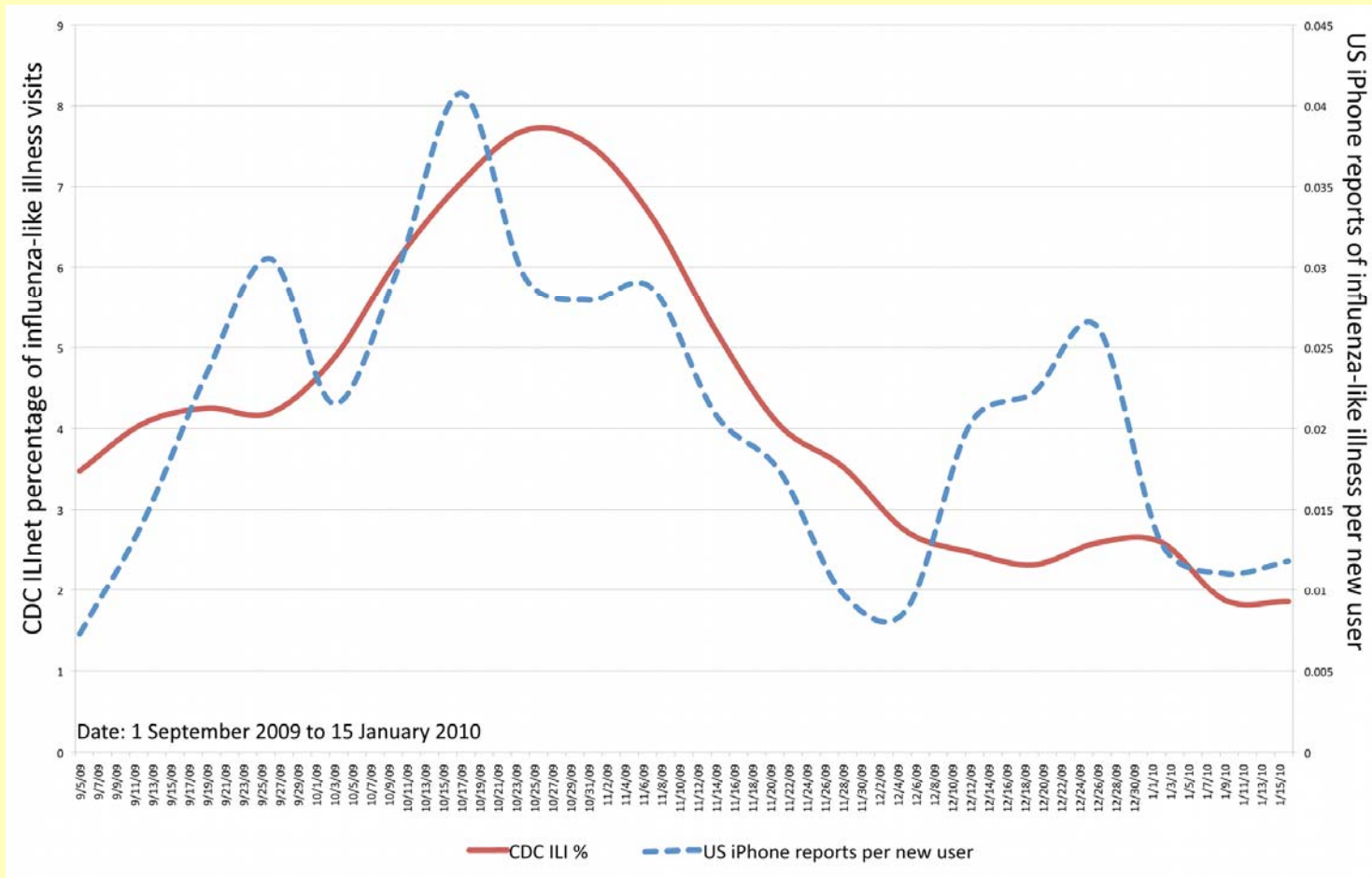
**TIME**  
IN PARTNERSHIP WITH **CNN**

Wednesday, Sep. 09, 2009

## Is a Swine Flu Outbreak Coming? Ask Your iPhone

By Bryan Walsh

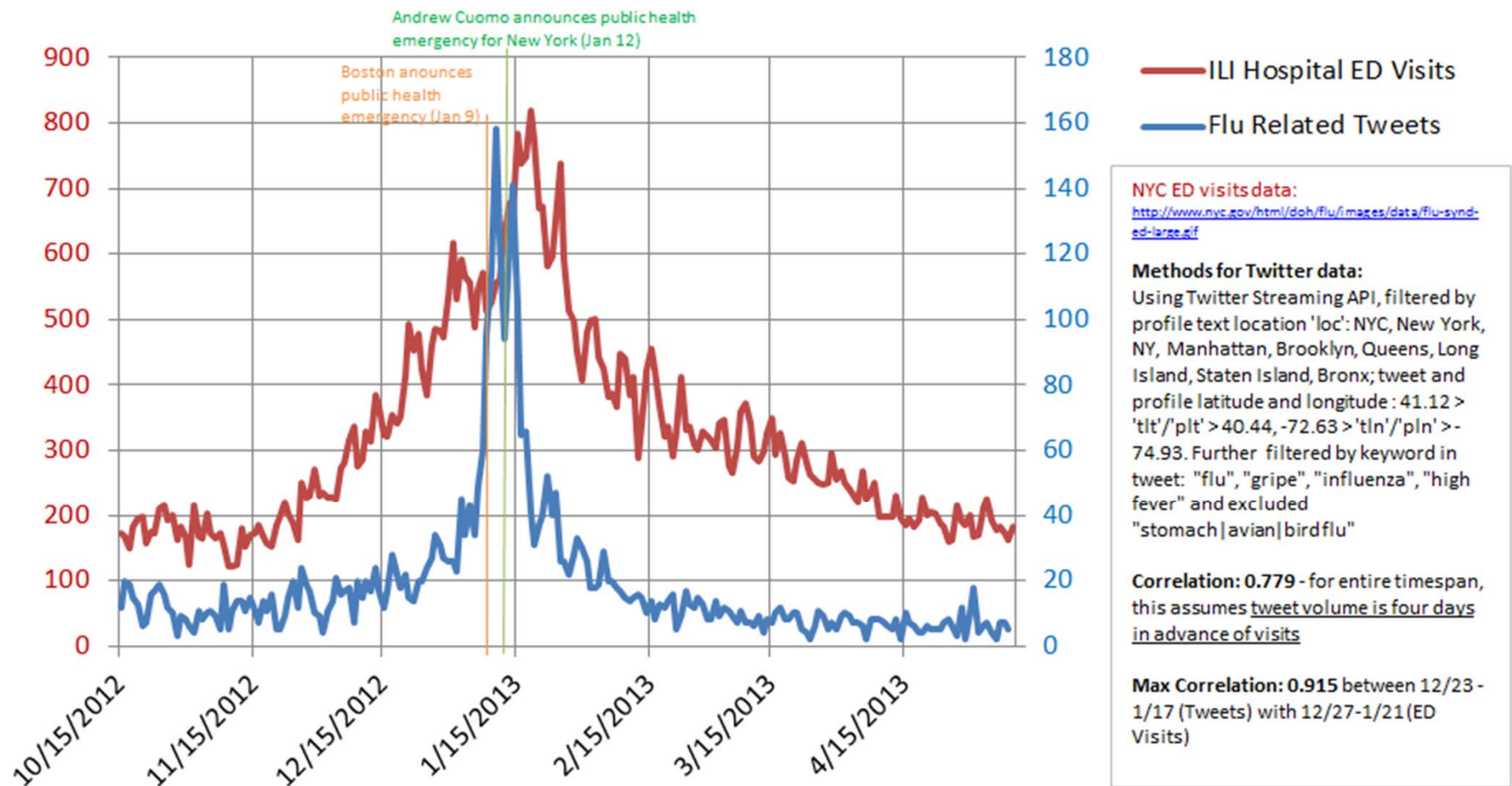
# H1N1 reports from Outbreaks Near Me and from CDC lab data





# Flu-related tweets and ILI-related ED visits in NYC

## New York City Flu Season 2012-2013



# H7N9: Finding a signal in silence



**HealthMap.org** @healthmap

31 Mar

Breaking: 2 dead Shanghai, 1 ill Anhui Province from H7N9 Avian Influenza. 1st human cases from this strain #birdflu [bit.ly/13li2LK](http://bit.ly/13li2LK)

Collapse Reply Retweeted Favorite More

**15**

RETWEETS

**2**

FAVORITES



4:22 AM - 31 Mar 13 · Details

Reply to @healthmap

# H7N9: Finding a signal in silence



**HealthMap.org** @healthmap

31 Mar

Breaking: 2 dead Shanghai, 1 ill Anhui Province from H7N9 Avian Influenza. 1st human cases from this strain #birdflu [bit.ly/13li2LK](http://bit.ly/13li2LK)

Collapse

15  
RETWEETS

4:22 AM -

Reply to



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Classifieds SEARCH Property Search for Property

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Opinion  
Honours List

Sunday March 31, 2013

## New avian flu strain kills two in China, one in critical condition

[Traplift Nodig?](#)

Kwaliteits trapliften van Stannah. Beste Trapliften: Advies & Verkoop!  
[www.stannahtrapliften.nl](http://www.stannahtrapliften.nl)

AdChoices



Get the latest updates from our GE13 site

BEIJING: Two people in China have died after being infected with H7N9 avian influenza - a sub-type that had not previously been transmitted to humans - the government said Sunday.

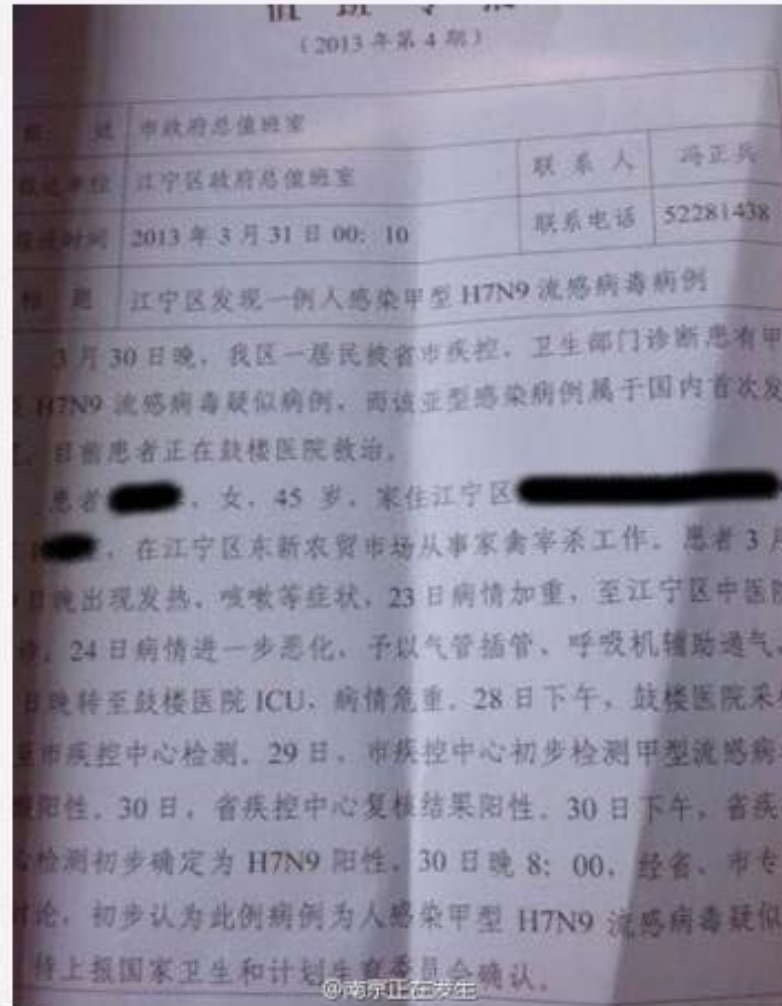
An 87-year-old man in Shanghai fell ill on February 19 and died on March 4, while a man aged 27 in the city got sick on February 27 and died on March 10, the National Health and Family Planning Commission said on its website.

# H7N9 and Social Media

On April 3, 2013, a post on Chinese microblogging site, Weibo, from a Nanjing Hospital employee, reported a confirmed case of H7N9.

江宁区发现一例人感染甲型H7N9流感病毒病例？

收起 | 查看大图 | 向左转 | 向右转



今天09:24 来自新浪微博

2 | 转发(1731) | 收藏 | 评论(237)

April 3 2013

This post forced the Hospital employees to publically confirm the case on Weibo, shortly after.

@菲尼克斯phoenix: 病人处于完全隔离治疗状态, 大家无需恐慌, 院方正在积极治疗抢救, 目前还未正式确诊, 近期不要吃禽类产品或者煮熟再食用。如有感冒发热现象及时就医。

收起 | 查看大图 | 向左转 | 向右转

III (2013年第4期)

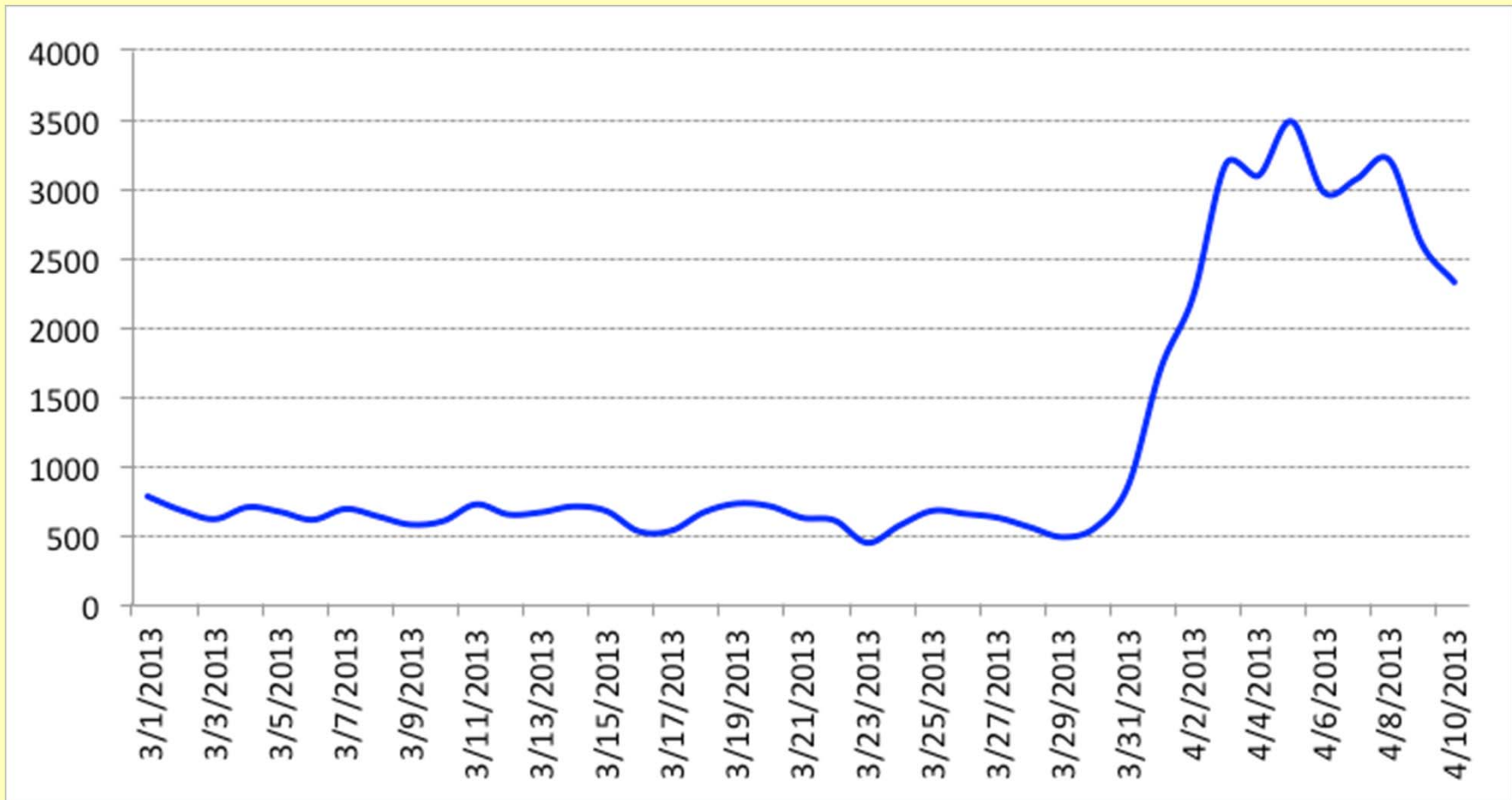
送	市政府总值班室	联系人	冯正兵
报送单位	江宁区政府总值班室	联系电话	52281438
报送时间	2013年3月31日 00:10		
标题	江宁区发现一例人感染甲型H7N9流感病毒病例		

3月30日晚, 我区一居民被省市疾控, 卫生部门诊断患有甲型H7N9流感病毒疑似病例, 而该亚型感染病例属于国内首次发现。目前患者正在鼓楼医院救治。

患者 [redacted], 女, 45岁, 家住江宁区 [redacted] [redacted], 在江宁区东新农贸市场从事家禽宰杀工作。患者3月21日晚出现发热, 咳嗽等症状, 23日病情加重, 至江宁区中医院就诊。24日病情进一步恶化, 予以气管插管、呼吸机辅助通气, 25日晚转至鼓楼医院ICU, 病情危重。28日下午, 鼓楼医院采样送至市疾控中心检测。29日, 市疾控中心初步检测甲型流感病毒核酸阳性。30日, 省疾控中心复核结果阳性。30日下午, 省疾控中心检测初步确定为H7N9阳性。30日晚8:00, 经省、市专家会诊, 初步认为此例病例为甲型H7N9流感病毒。

@新浪江苏 @Jennifer小倩  
weibo.com/xinlangjiangsu weibo.com/u/1785934304

## Unlikely cover-up... insights from Baidu



Flu related search query volume

# Research opportunities from social media and crowdsourcing



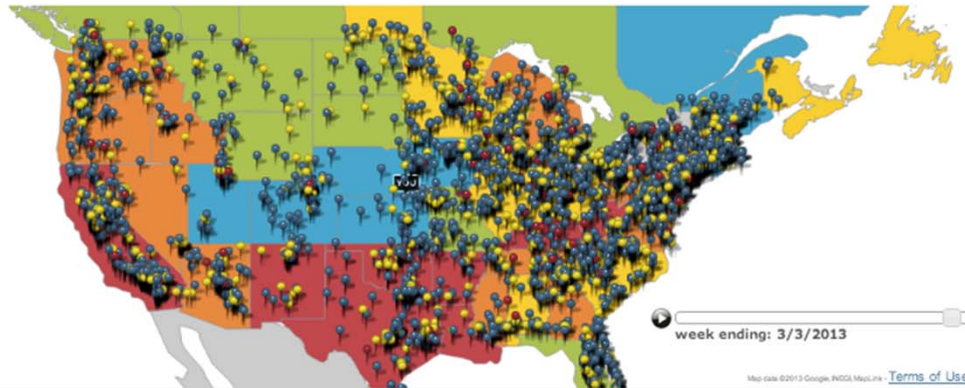
New to FluNearYou?  
▶ Check out the [video](#).

[Join!](#)



Jump to:  Zip code:

[Video](#) [FAQ](#) [Press](#) [About](#)

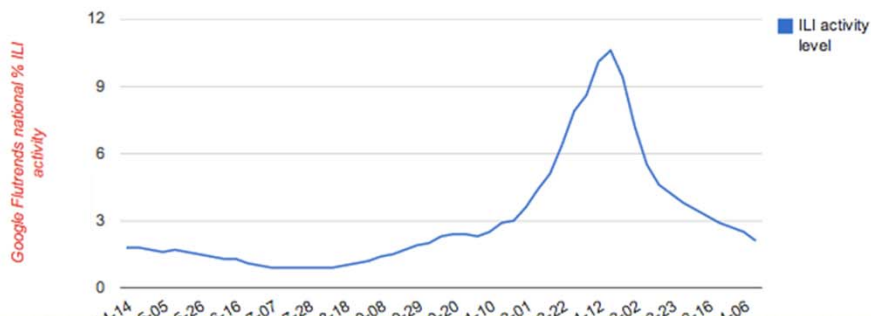


week ending: 3/3/2013

Google

User contributed data: (colors determined by current week of data)  
 No symptoms reported  Some symptoms reported  At least 1 person with Influenza-like illness

Additional flu data:  User Contributed Flu Activity  CDC Flu Activity  Google Flu Trends ILI  
■ < 1% ■ 1 - 2% ■ 2 - 3% ■ 3 - 4% ■ 4 - 5% ■ > 5%



41723 Participants  
in US



in the past week:

- 12 Reported symptoms
- 32 Reported no symptoms

## Local Public Health Links

- [United States Agency for Toxic Substances and Disease Registry](#)
- [United States CDC Travellers' Health](#)
- [United States Centres for Disease Control and Prevention](#)
- [United States Chemical Safety and Hazards Investigation Board](#)
- [United States Department of Agriculture](#)
- [United States Environmental Protection Agency](#)
- [United States Food and Drug Administration](#)
- [United States Food and Drug Administration Recalls](#)
- [United States Food Safety and Inspection Service](#)

# HOW IT WORKS

## REGISTER ONLINE BY COMPUTER OR PHONE

Two screenshots of the 'Register to Participate' form. The top screenshot shows the general registration form with fields for 'Email address', 'Confirm Email', 'Gender' (Male/Female), and 'When were you born?'. The bottom screenshot shows the form pre-filled with data from a Facebook profile, including 'Email Address: john.brownstein@aya.yale.edu', 'Gender: Male', and 'Birthday: Sep 21, 1977'. It also includes a 'Register' button and a note about Facebook integration.



# WEEKLY SURVEY

## NOTIFIED BY EMAIL OR PUSH NOTIFICATION

Report Your Health Status Change X

Thank you for registering for the Flu Near You project! Now it's time to start your first survey.

What symptoms have you experienced in the past week?

<input type="checkbox"/> Fever	<input type="checkbox"/> Fatigue
<input type="checkbox"/> Cough	<input type="checkbox"/> Nausea or vomiting
<input type="checkbox"/> Sore throat	<input type="checkbox"/> Diarrhea
<input type="checkbox"/> Shortness of breath	<input type="checkbox"/> Body aches
<input type="checkbox"/> Chills/night sweats	<input type="checkbox"/> Headache

I did not have any of the listed symptoms

Did you receive the flu vaccine after July 31, 2011?

Yes  No  Don't know

Did you receive the flu vaccine last year (between July 31, 2010 - July 31, 2011)?

Yes  No  Don't know

**Submit**

week ending: 10/22/2011

**flu** near you   
do you have it in you?

# FORM AFTER ILLNESS INDICATION

## Report Your Health Status

Thank you for registering for the Flu Near You project! Now it's time to start your first survey.

### What symptoms have you experienced in the past week?

- Fever
- Cough
- Sore throat
- Shortness of breath
- Chills/night sweats
- Fatigue
- Nausea or vomiting
- Diarrhea
- Body aches
- Headache

What was your highest temperature measured?

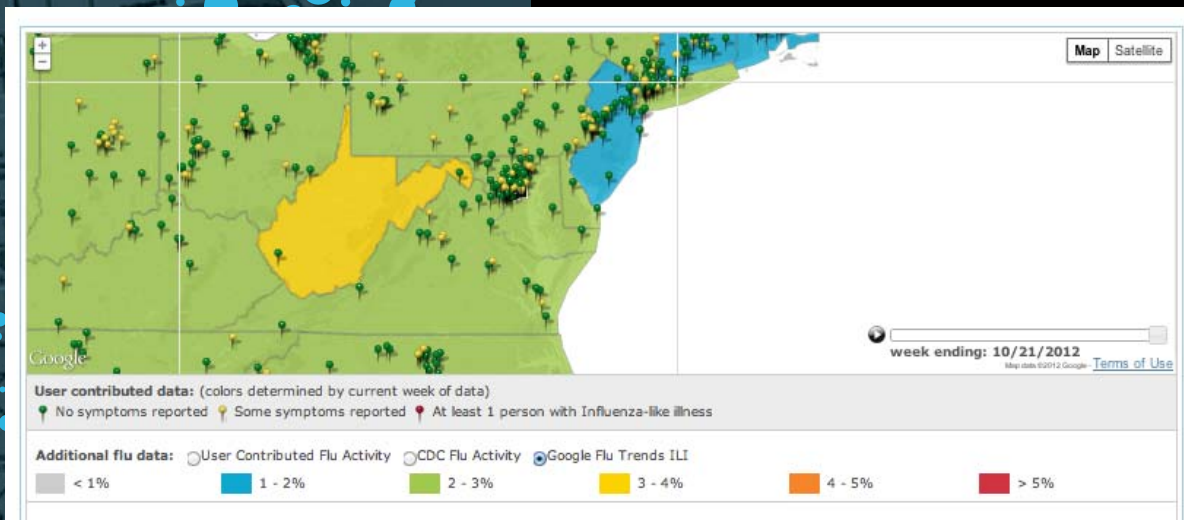
Not measured

### What day did you start feeling ill?

October 2011

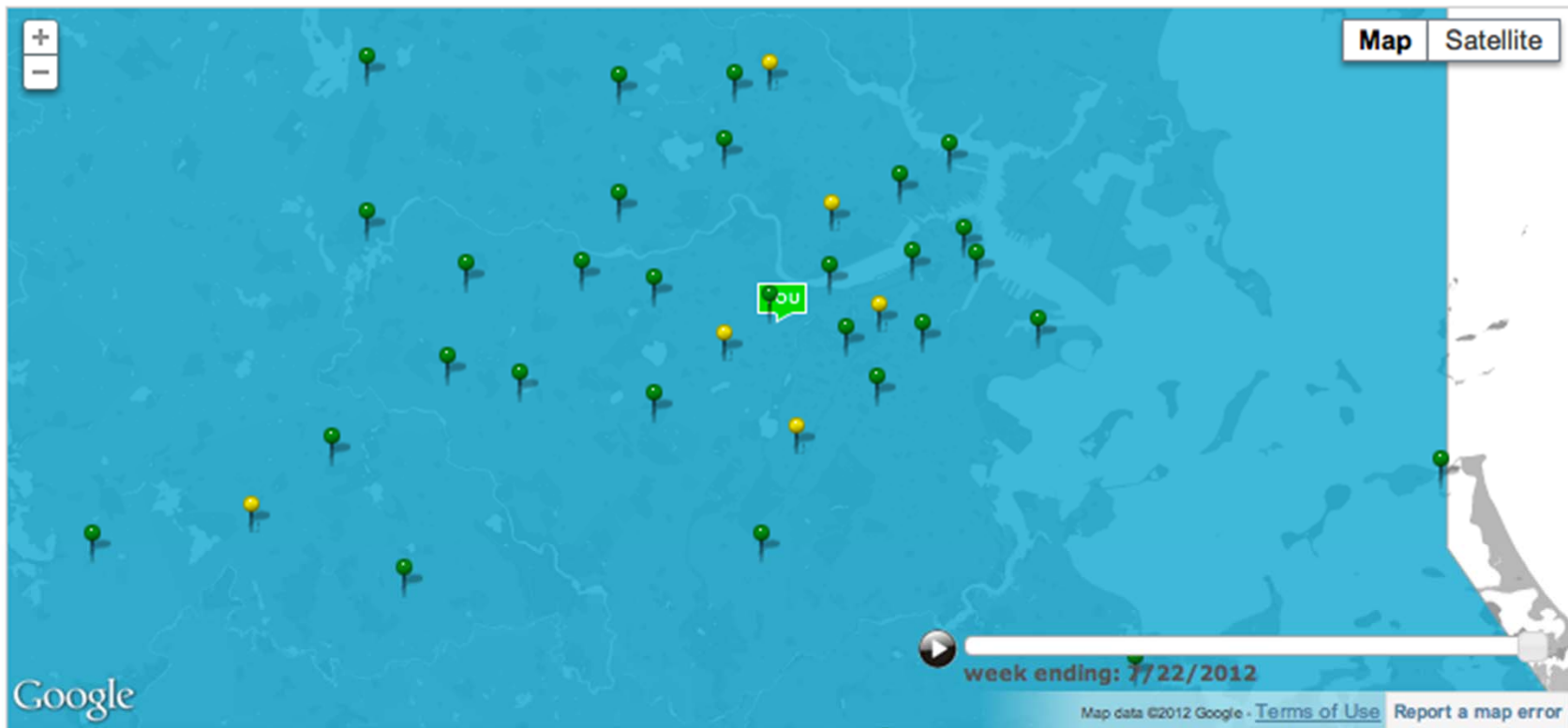
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

# SEE THE SPREAD OF FLU THROUGH CROWDSOURCING



# VISUALIZE LOCAL ILLNESS

## Flu Activity in Your Area



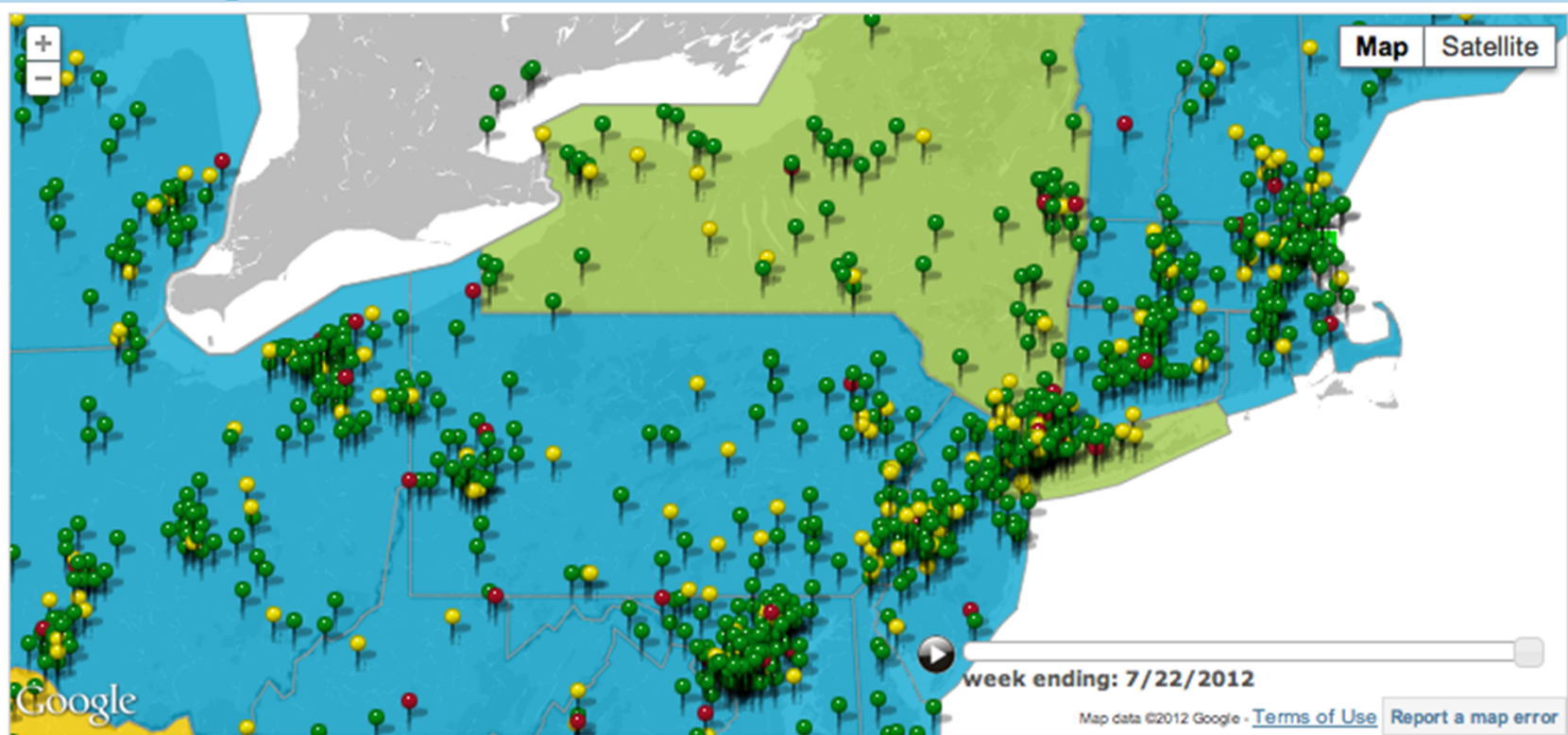
**User contributed data:** (colors determined by current week of data)

-  No symptoms reported
-  Some symptoms reported
-  At least 1 person with Influenza Like Illness

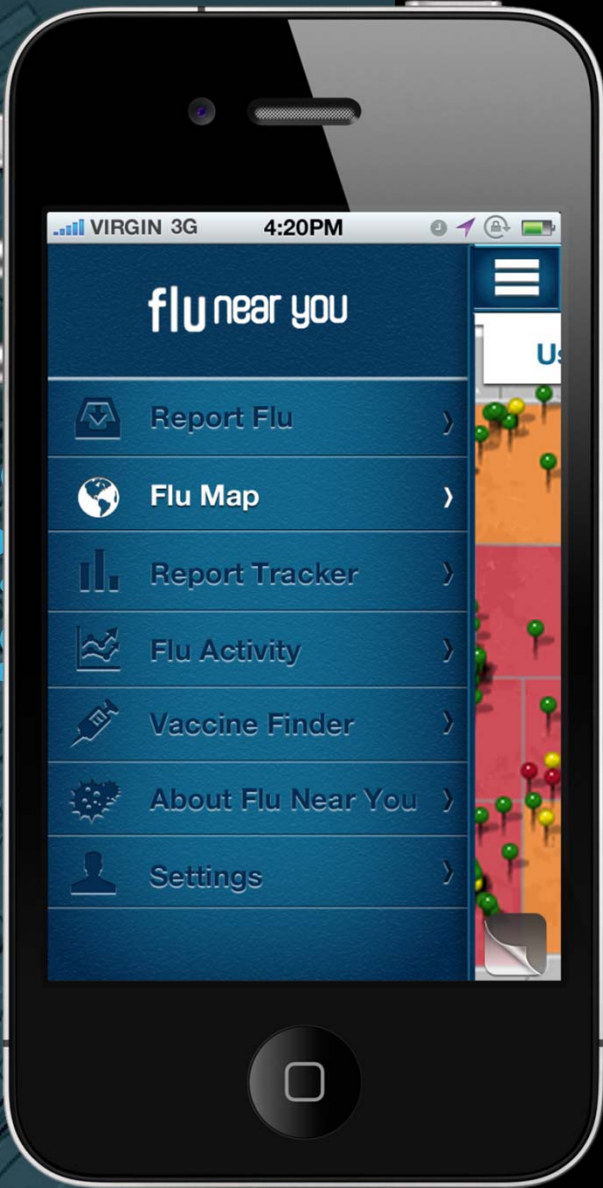
**flu** near you   
do you have it in you?

# VISUALIZE REGIONAL ILLNESS

## Flu Activity in Your Area

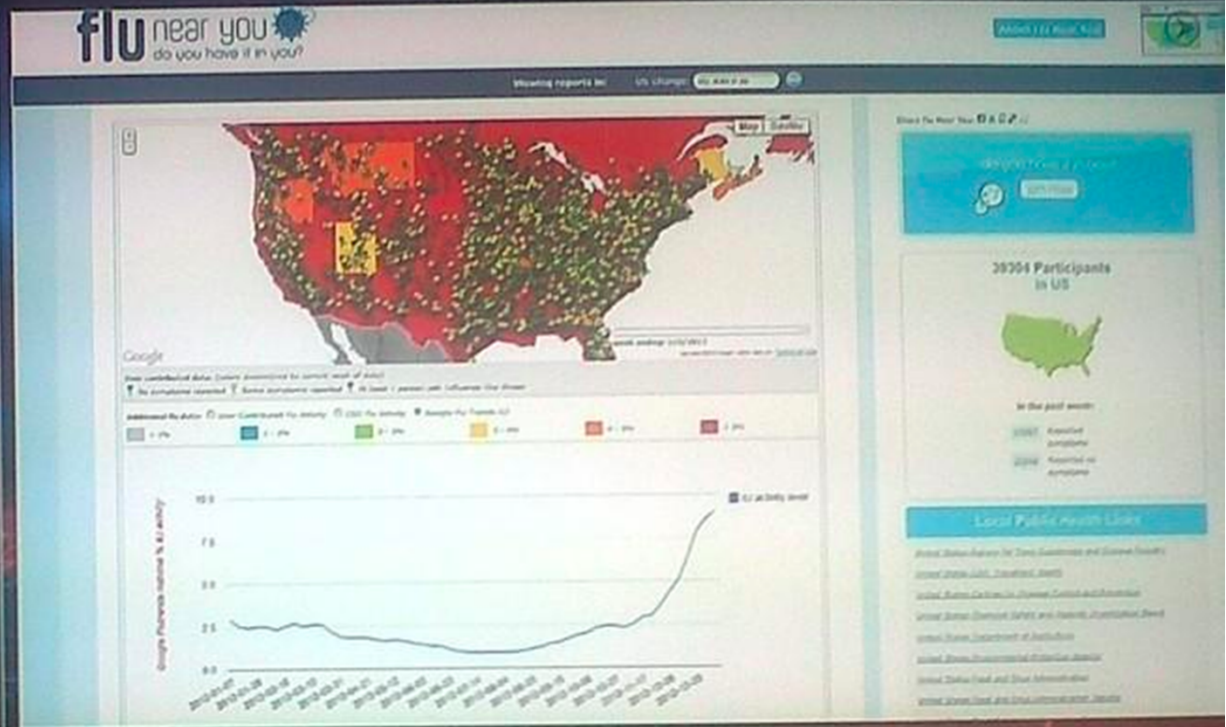


**flu** near you   
do you have it in you?



# FLU NEAR YOU APP

**flu** near you   
do you have it in you?



THE SITUATION ROOM

Some emergency rooms overwhelmed with flu patients: Pennsylvania hospital sets up flu tent outside E.R.

LIVE CNN

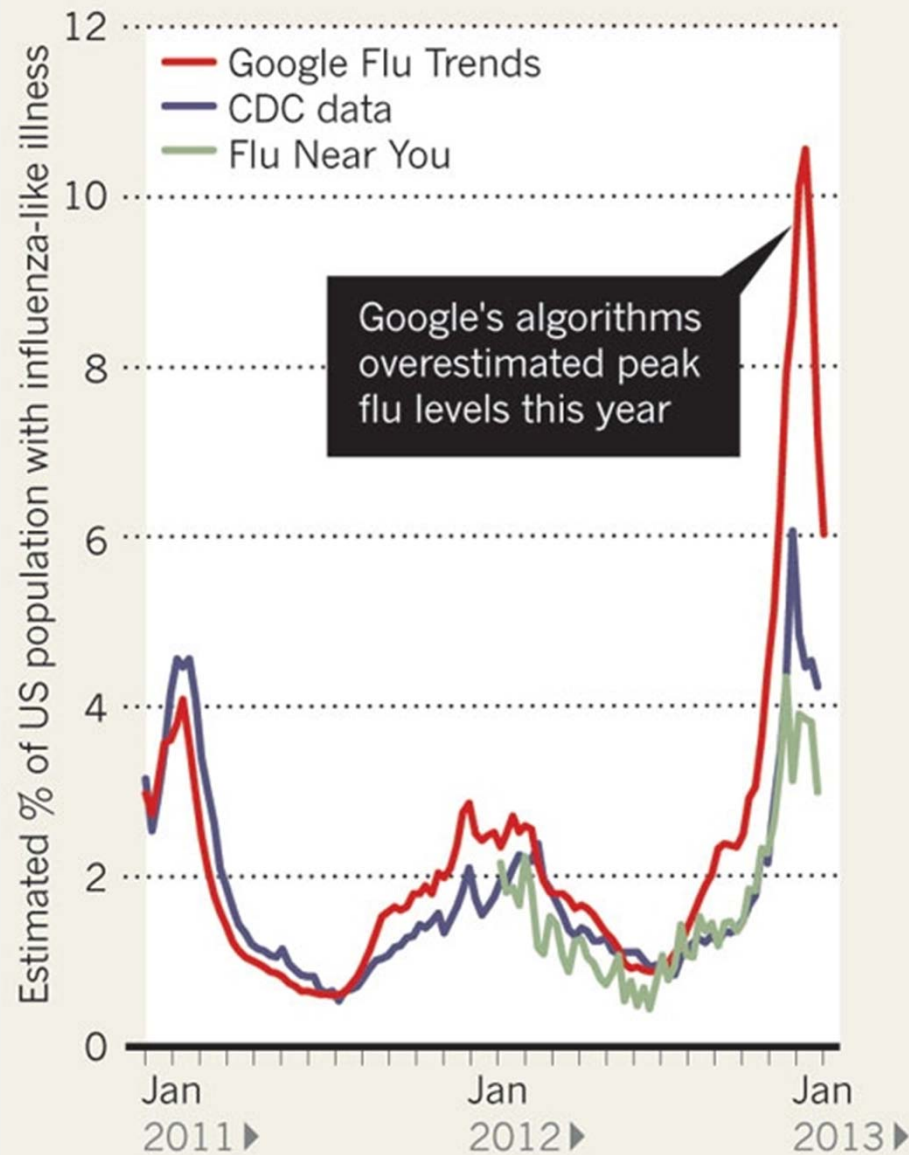
WORLD

Scores dead after bomb blasts in Quetta

S&P 4 P 11:10

## FEVER PEAKS

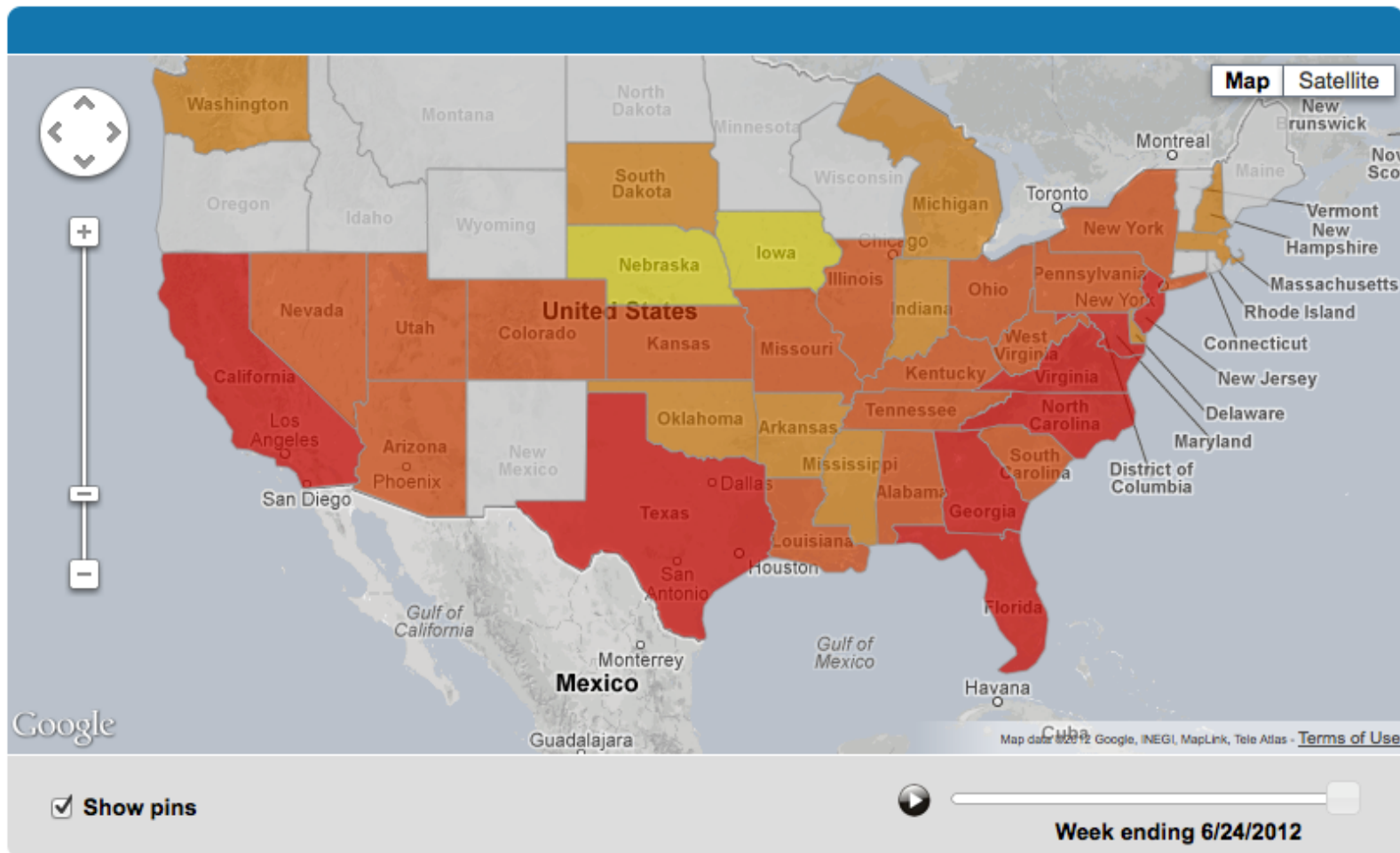
A comparison of three different methods of measuring the proportion of the US population with an influenza-like illness.



*Nature* 494,  
155–156 (14  
February 2013)



# Integrating Diagnostics



# Social Media for skeptical beginners: Create a “list” of a few reliable sources

The screenshot shows a Twitter interface with a dark navigation bar at the top containing icons for Home, Connect, Discover, Me, and a search bar. The main content area is divided into three columns. The left column features a list titled "Breaking News Outbreaks" by Sumiko Mekar, with 4 members and 0 subscribers, and buttons for "Edit" and "Delete". Below this are links for "Tweets", "List members", and "List subscribers". The middle column, titled "Recently added members", lists four users: Michael Coston (@Fla\_Medic), biocaster (@biocaster), Crawford Kilian (@Crof), and HealthMap.org (@healthmap), each with an "Unfollow" button. The right column, titled "Tweets", displays a vertical list of tweets from HealthMap.org and Crawford Kilian, including updates on polio in Kenya, SARS cases in Alabama, and MERS news from the Eastern Mediterranean.

Home @ Connect # Discover Me Search

### Breaking News Outbreaks

A public list by Sumiko Mekar

4 MEMBERS 0 SUBSCRIBERS

Edit Delete

Tweets

List members

List subscribers

Recently added members · View all

- Michael Coston @Fla\_Medic Unfollow
- biocaster @biocaster Unfollow
- Crawford Kilian @Crof Unfollow
- HealthMap.org @healthmap Unfollow

### Tweets

- HealthMap.org @healthmap 42m  
The @WHO alert on polio in Kenya: "Wild poliovirus in the Horn of Africa" ow.ly/lhG2c #WPV #Kenya #polio  
Expand
- Crawford Kilian @Crof 1h  
Canada: Boil-water advisory widens for Montreal area bit.ly/11bitX6  
Expand
- HealthMap.org @healthmap 1h  
via @crof @Fla\_Medic @FluTrackers @ironorehopper an update on the #alabama #SARI cases: two test positive for #flu bit.ly/12W2246  
Expand
- HealthMap.org @healthmap 1h  
From @TR\_Foundation: "When it comes to deadly viruses, what's in a name?" ow.ly/lhCY2 #nCoV #MERS #coronavirus  
Expand
- Crawford Kilian @Crof 1h  
India: #Respiratory disease & multi-organ failure cases on the rise bit.ly/184i41s  
Expand
- Crawford Kilian @Crof 2h  
Eastern Mediterranean Health Journal #MERS supplement bit.ly/11bePN2  
Expand

# Social Media and Public Health

1. How does it fit into the traditional public health structure?
2. How do we find signals in it?
3. How can we use it in research?
4. How can you use it professionally?

Thank you!

