



[www.asset-scienceinsociety.eu](http://www.asset-scienceinsociety.eu)



**ASSET**

share and move to face nasty bugs

## HOW CAN HEALTH INFORMATION BE RETRIEVED IN THE WEB?

Alberto E TOZZI (Chief Innovation Officer,  
BAMBINO GESU' CHILDREN'S HOSPITAL)  
**LAY PUBLIC ENGAGEMENT**

**The ASSET FINAL EVENT**

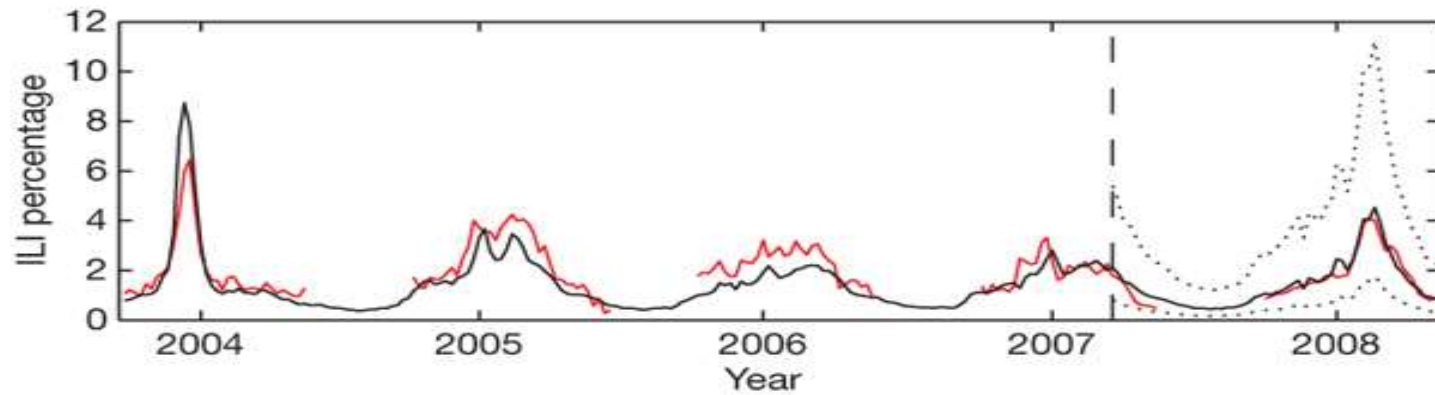
*Share and move for mobilization and mutual learning at local,  
national and international levels on Science in Society related issues  
in epidemics and pandemics  
Rome, 30-31.10.2017*



co-funded by the EU. GA: 612236

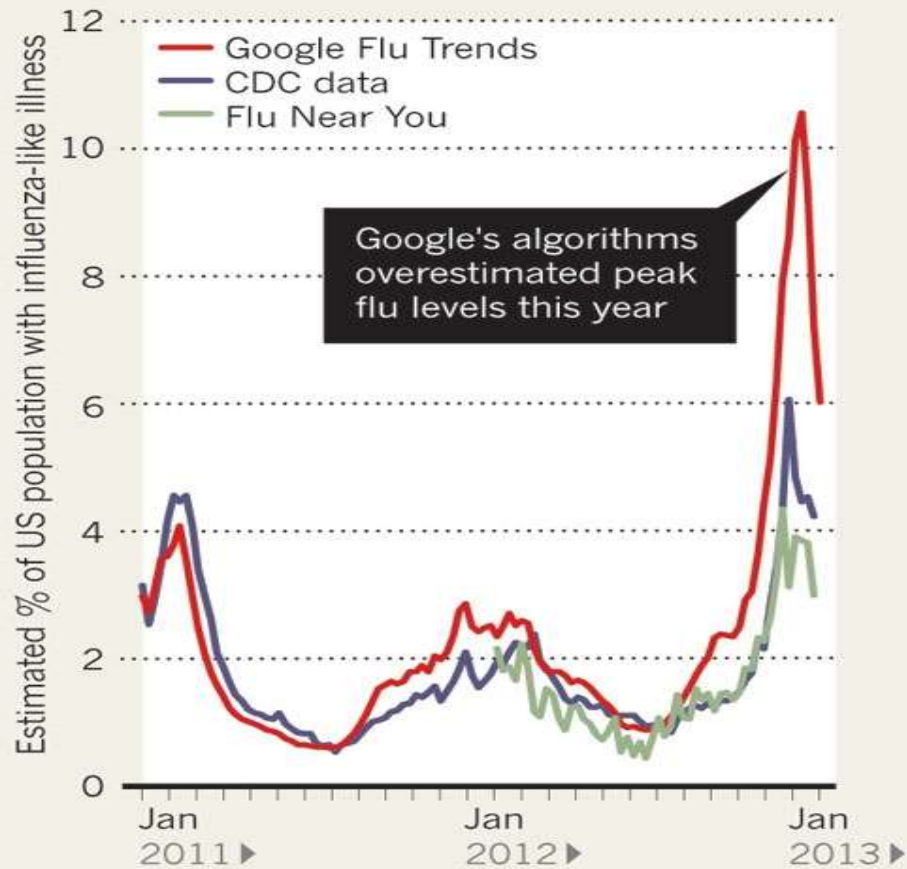
# Google™

## flu



## FEVER PEAKS

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





**HalloweenSuxxx**

@hewbz



My doctor is so nice. She always makes me feel like everything is going to be ok. By the way I got the flu



**Tim Clagg**

@TimClagg87



Segui

Think I might be getting sick. Body starting to ache and cough like crazy. Ain't nobody got time for that. Need to get my flu shot.



**NiCat**  
@\_Nishatt



+ Segui

Allergy season, it's time for puffy dry eyes,  
runny nose, itchy throat and constant  
sneeze #wouhouuu #welcomespring2015  
be nice this year 😞

🌐 Visualizza traduzione

📍 Montréal, Québec



08:41 - 20 mar 2015



NW ER Doc

@NW\_ERDoc



Segui

Dear Allergies - Screw you and leave me alone.

Dear Zyrtec and Flonase - I love you.

Visualizza traduzione



RETWEET

1

PREFERITI

12



### Information Retrieval

Doc A



Doc 1

Doc 2

Doc 3

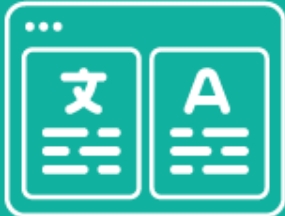
### Sentiment Analysis



### Information Extraction



### Machine Translation



# Natural Language Processing

### Question Answering



Human: When was Apollo sent to space?



Machine: First flight - AS-201, February 26, 1966



How to provide information  
on vaccines that has a real  
impact?

# Desirable attributes for vaccine information

Reliable

Trustworthy

Timely adapting to context

Tailored to needs

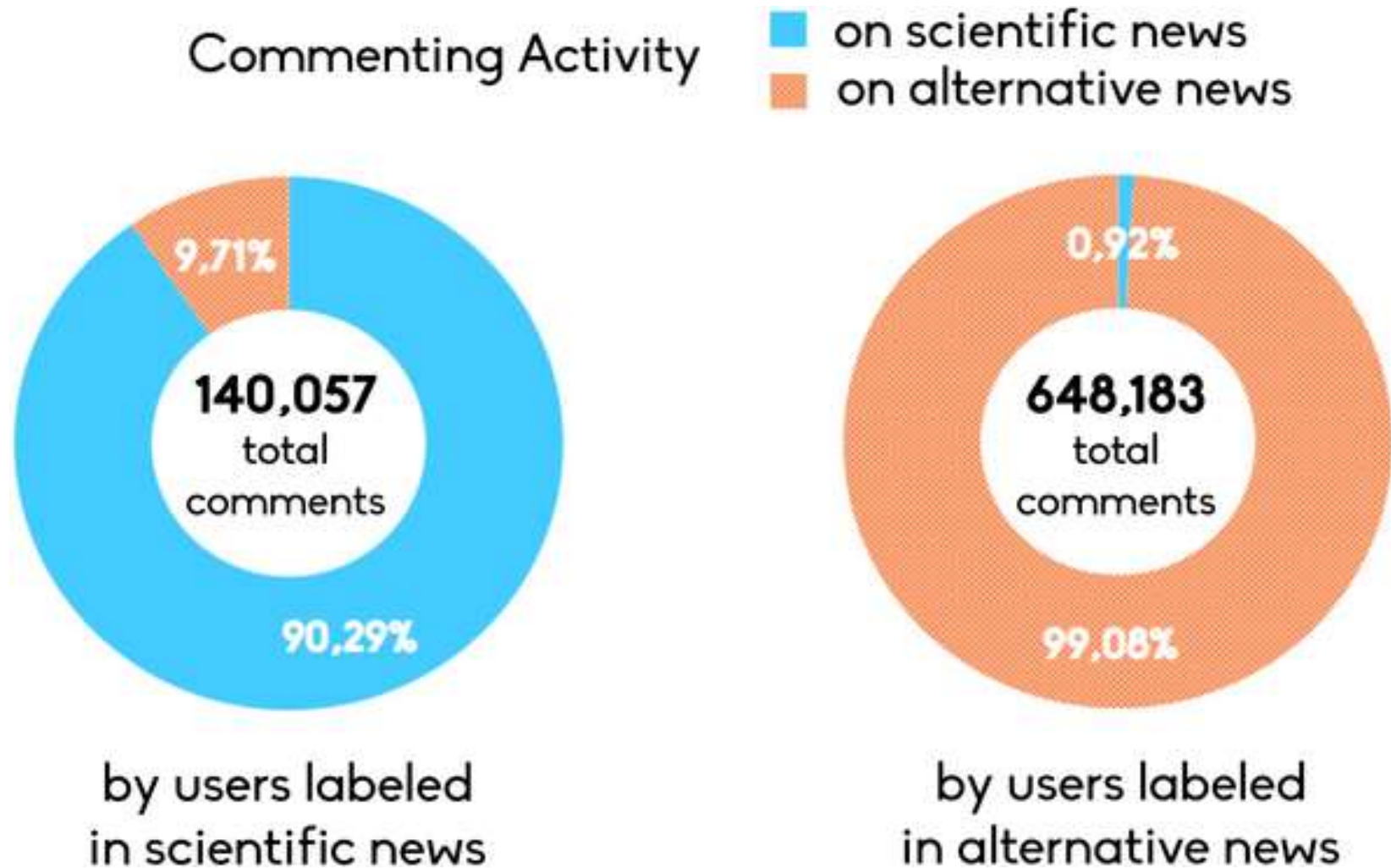
Easy to understand

Engaging

Interactive

How does the public on the  
web react to scientific  
information?

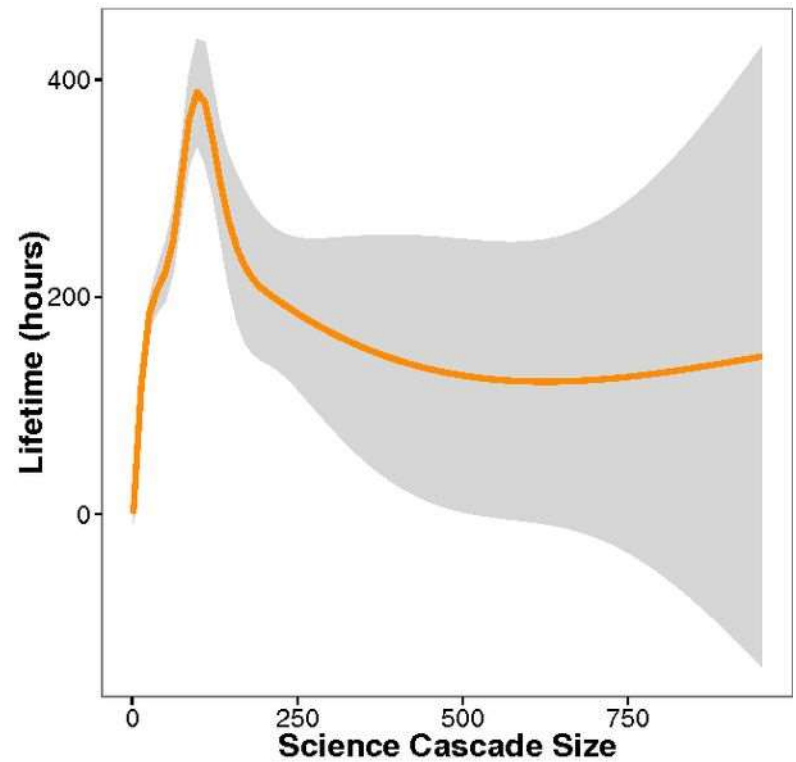
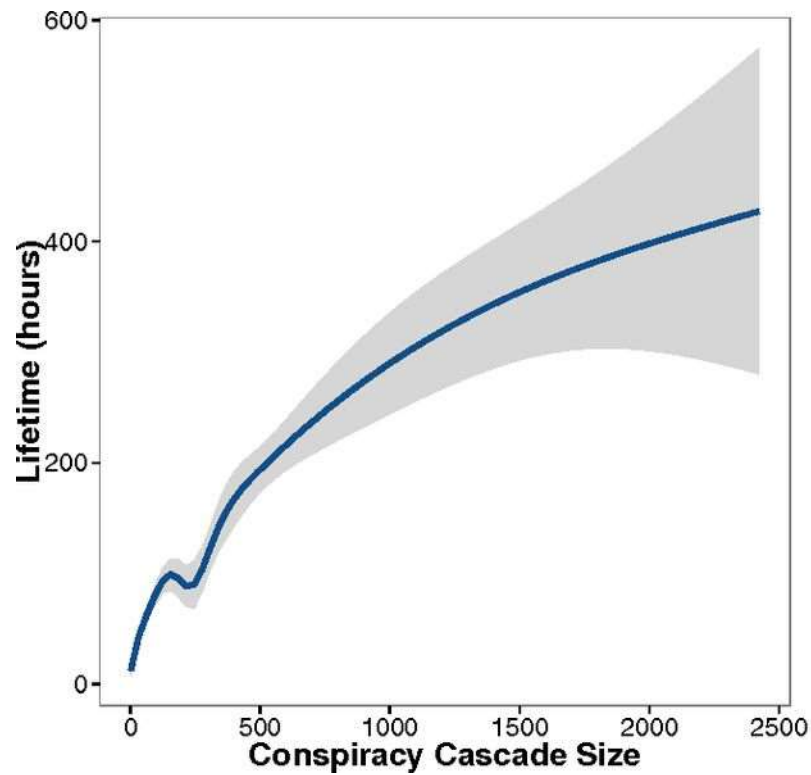
Fig 5. Activity and communities.



Bessi A, Coletto M, Davidescu GA, Scala A, Caldarelli G, et al. (2015) Science vs Conspiracy: Collective Narratives in the Age of Misinformation. PLoS ONE 10(2): e0118093. doi:10.1371/journal.pone.0118093  
<http://journals.plos.org/plosone/article?id=info:doi/10.1371/journal.pone.0118093>

What is the dynamics of true  
and false information on social  
networks?

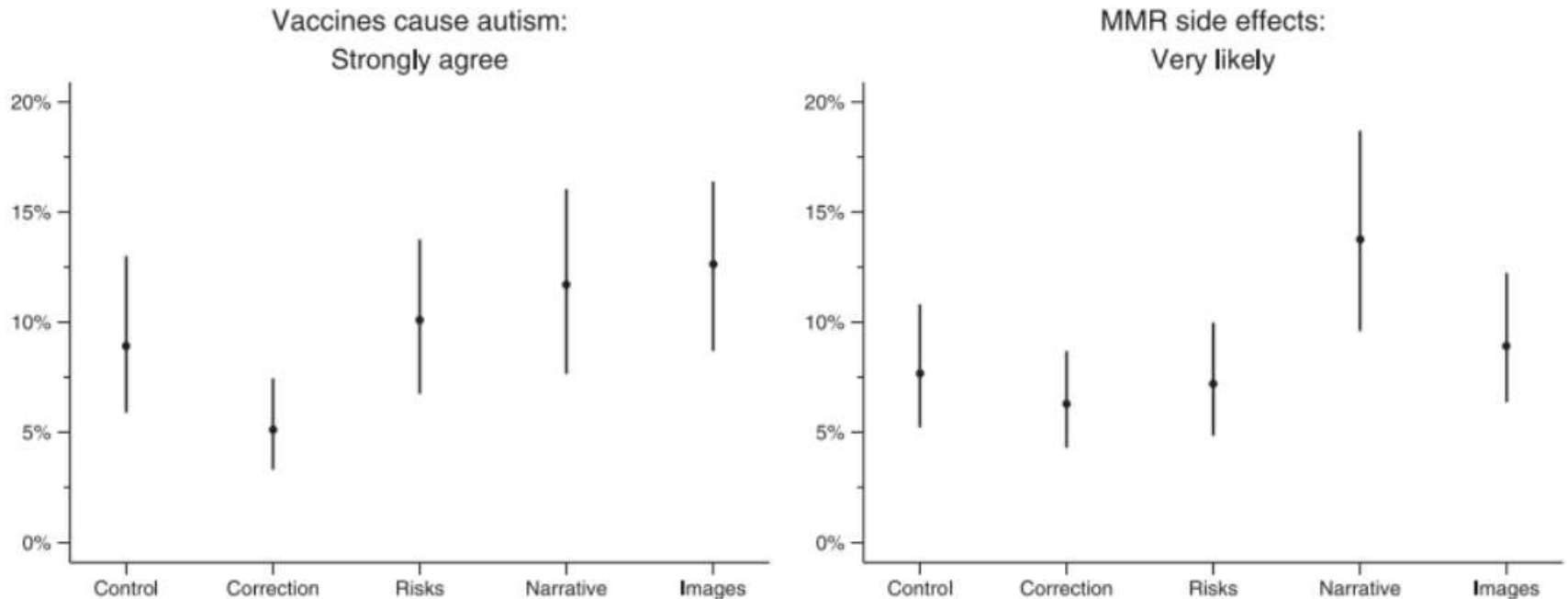
# Lifetime as a function of the cascade size for conspiracy news (Left) and science news (Right).



Michela Del Vicario et al. PNAS 2016;113:554-559

Does debunking of fake  
news work?

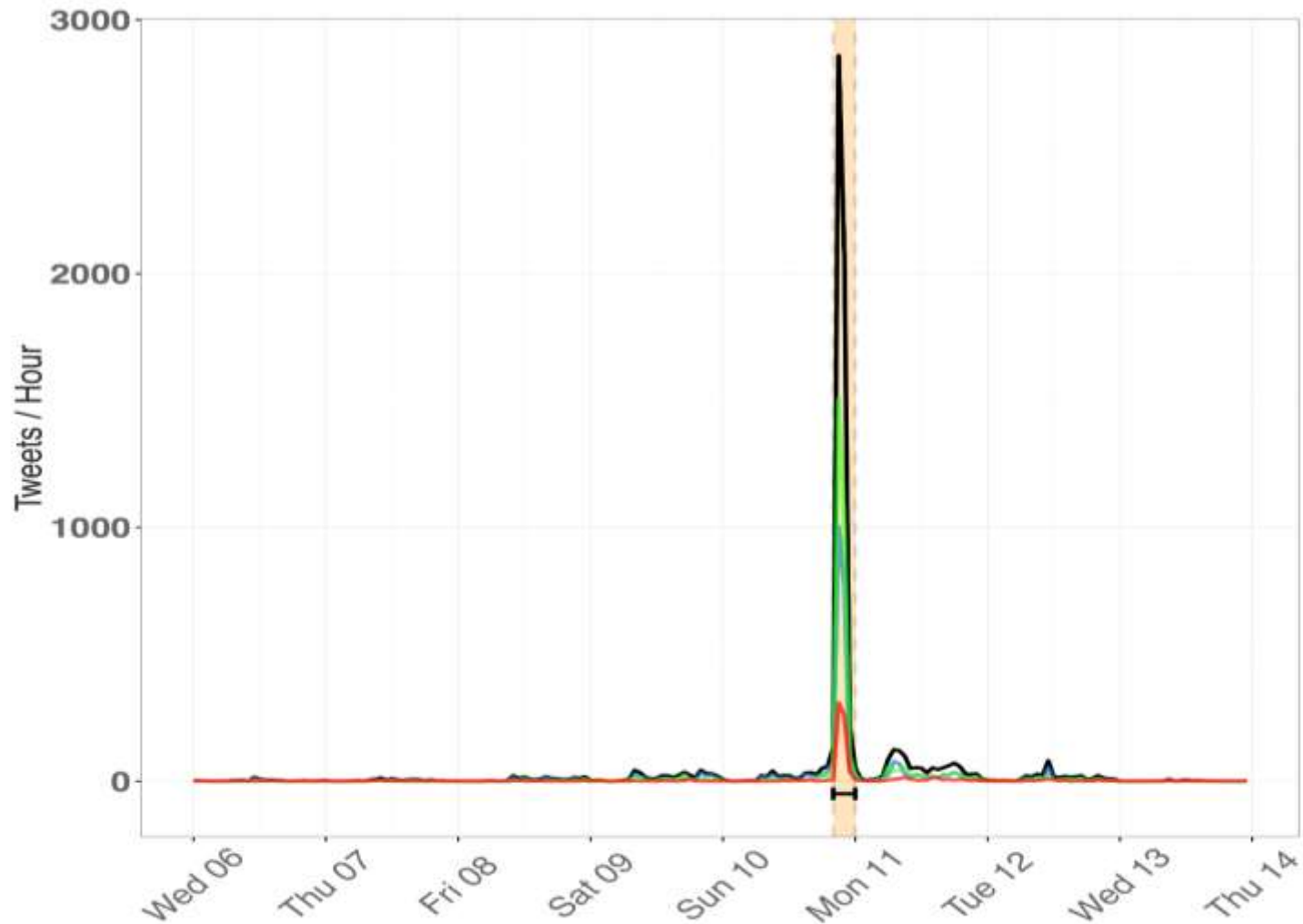
# Debunking does not improve attitude towards vaccines





Let's start media  
surveillance!

# Response to a TV show about vaccines

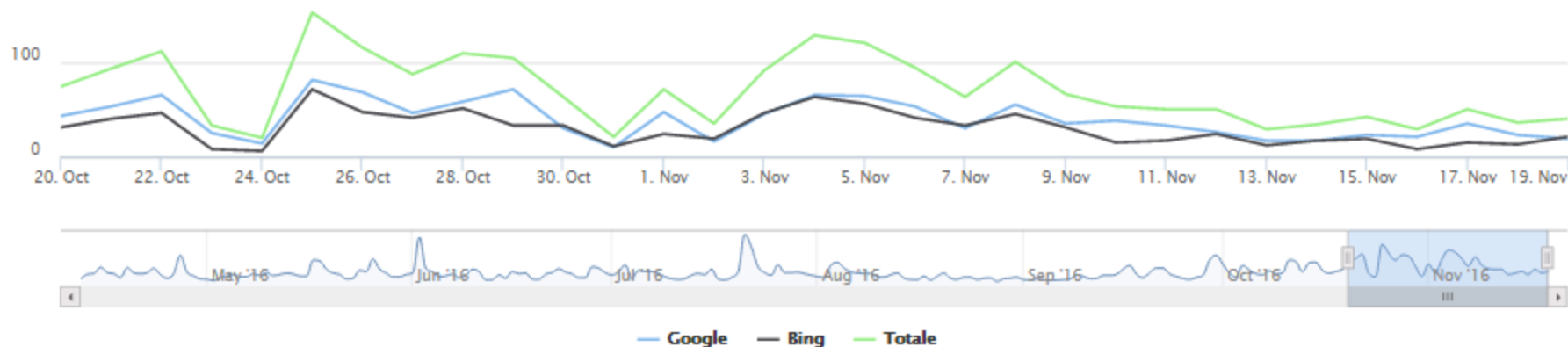


## Articoli

Numero di articoli collezionati riguardanti *vaccino*

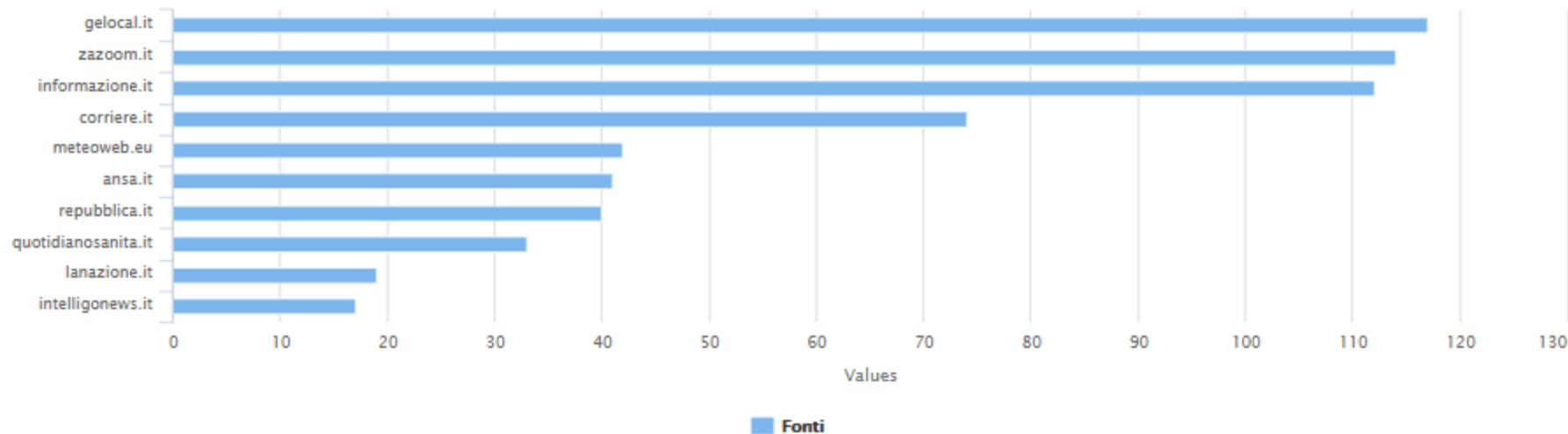
Zoom **1m** 3m 6m YTD 1y All

From  To



## Fonti

Principali fonti che hanno citato *vaccino* negli ultimi 30 giorni



We must integrate  
different  
information sources

# Vaccine Safety Net

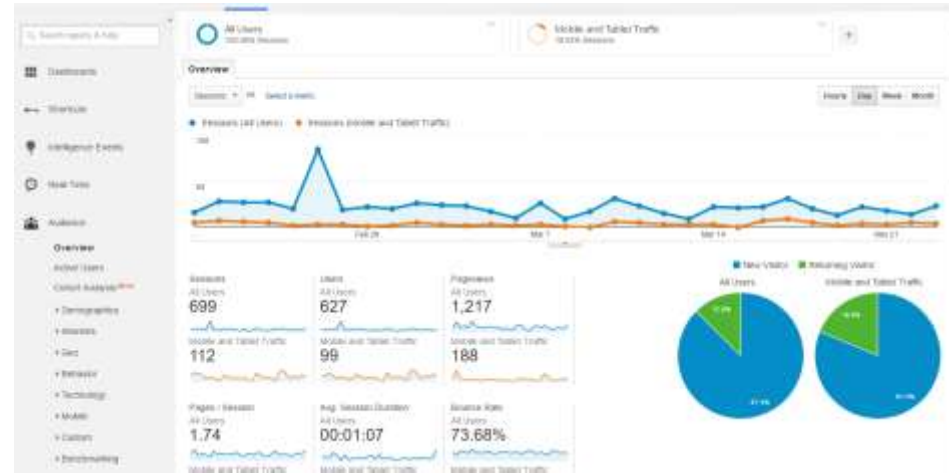
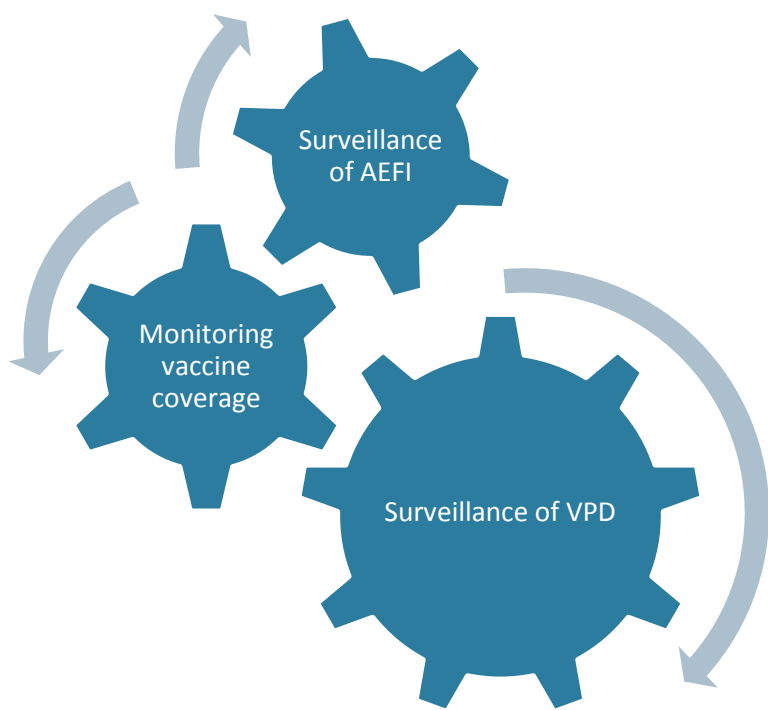
A global network of websites, **evaluated by the WHO**, that provide reliable information on vaccine safety

**55** websites

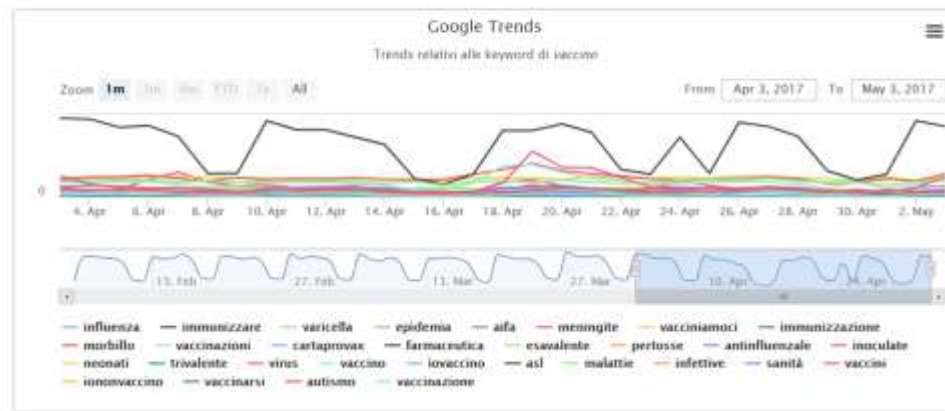
**15** languages

**152 million** estimated visitors per month

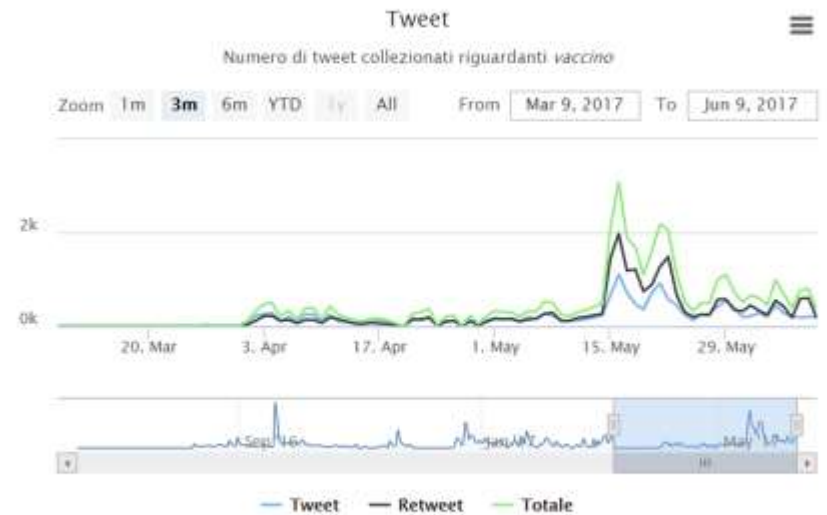




## Vaccino News, Social e Video



Data source: Google Trends ([www.google.com/trends](http://www.google.com/trends))



# Data driven communication