



EMRO: Using Social Media Monitoring for signal detection in the DVA process

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mondiale de la Santé

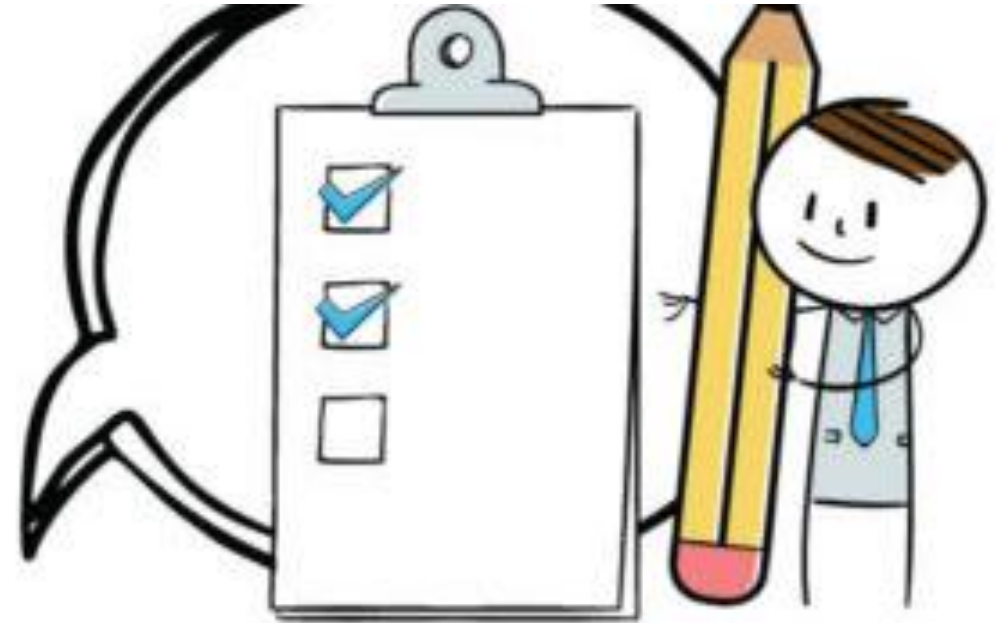


**World Health
Organization**

Regional Office for the Eastern Mediterranean

Outline

- EMRO DVA process
- Why social media?
- Experience with Twitter
- Experience with mediatoolkit
- Lesson learned and recommendation



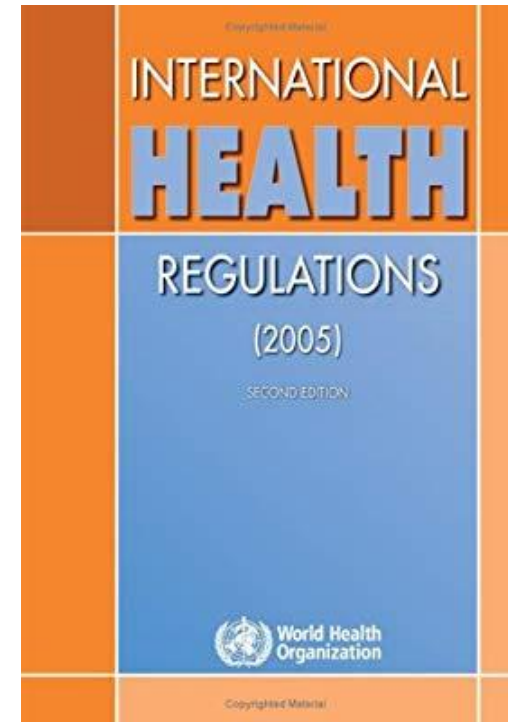
DVA Mandate

- **IHR 2005**

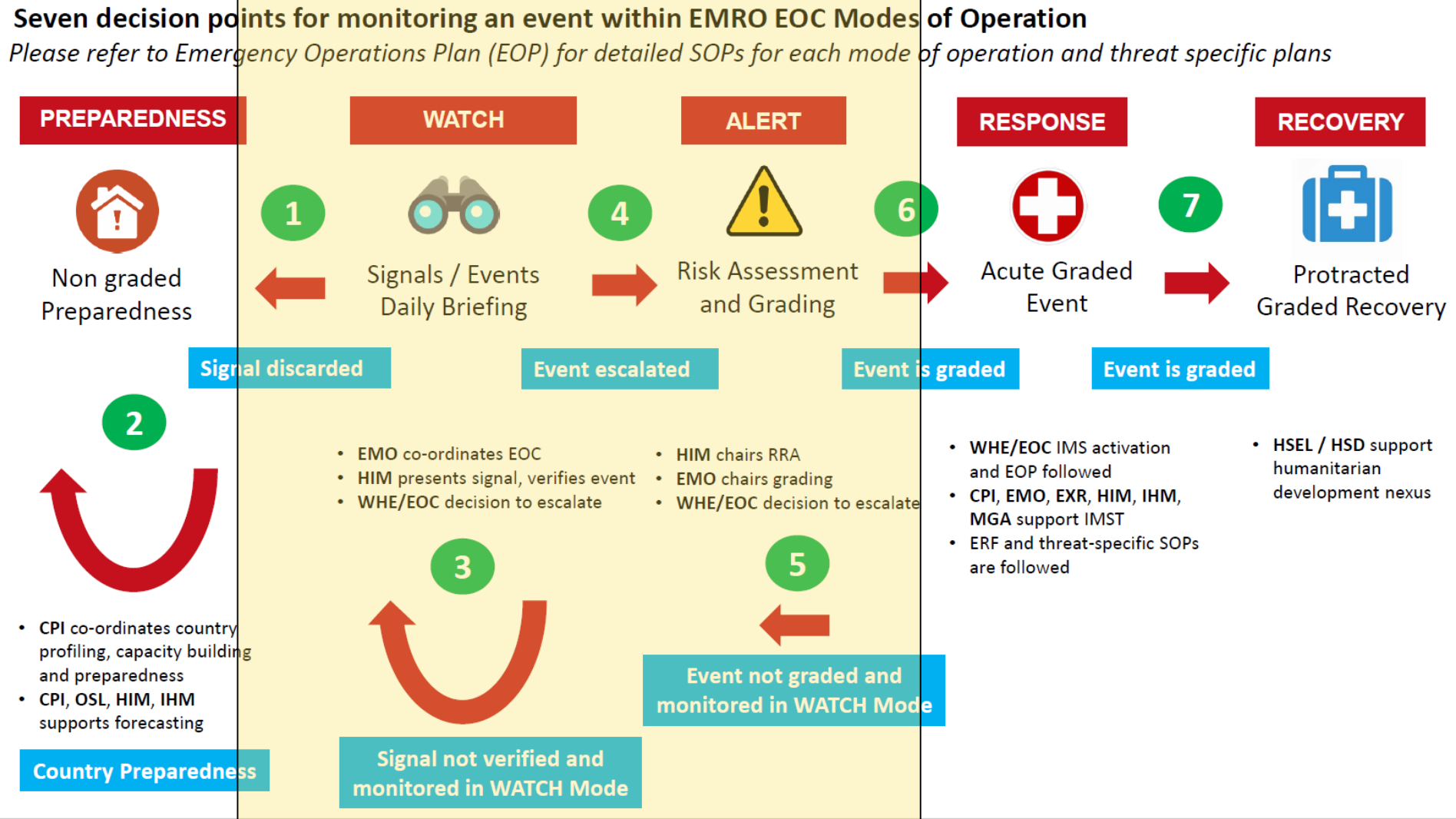
Early warning and alert requirements to detect, assess, notify and respond to all acute health events or health risks that may constitute a threat to human health

- **GPW13 outputs**

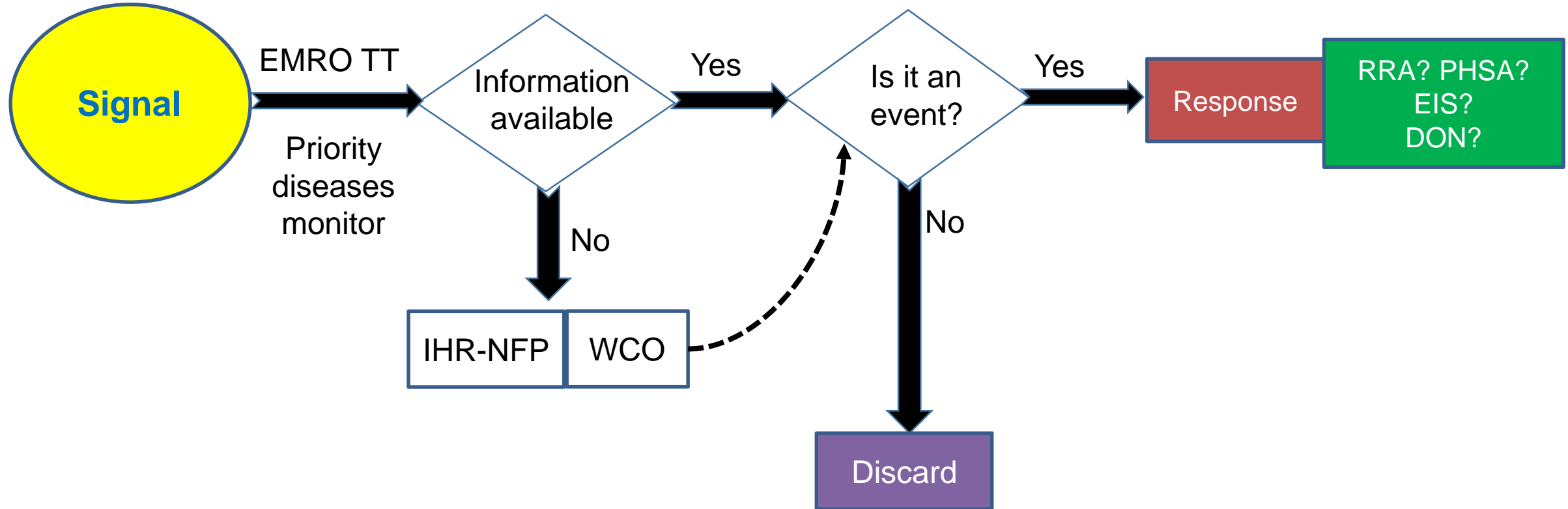
2.3.1 Potential health emergencies rapidly detected, risk assessed and communicated



DVA Role within the Emergency Operation Center (EOC)



Verification process



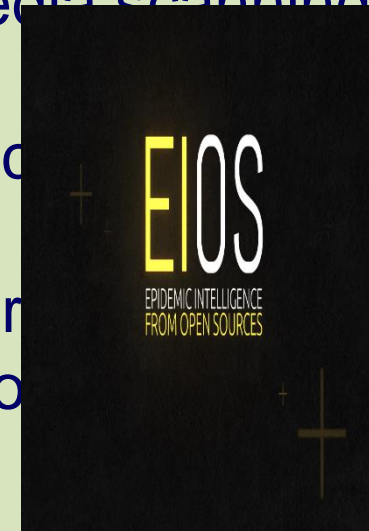
Sources of information

Official sources

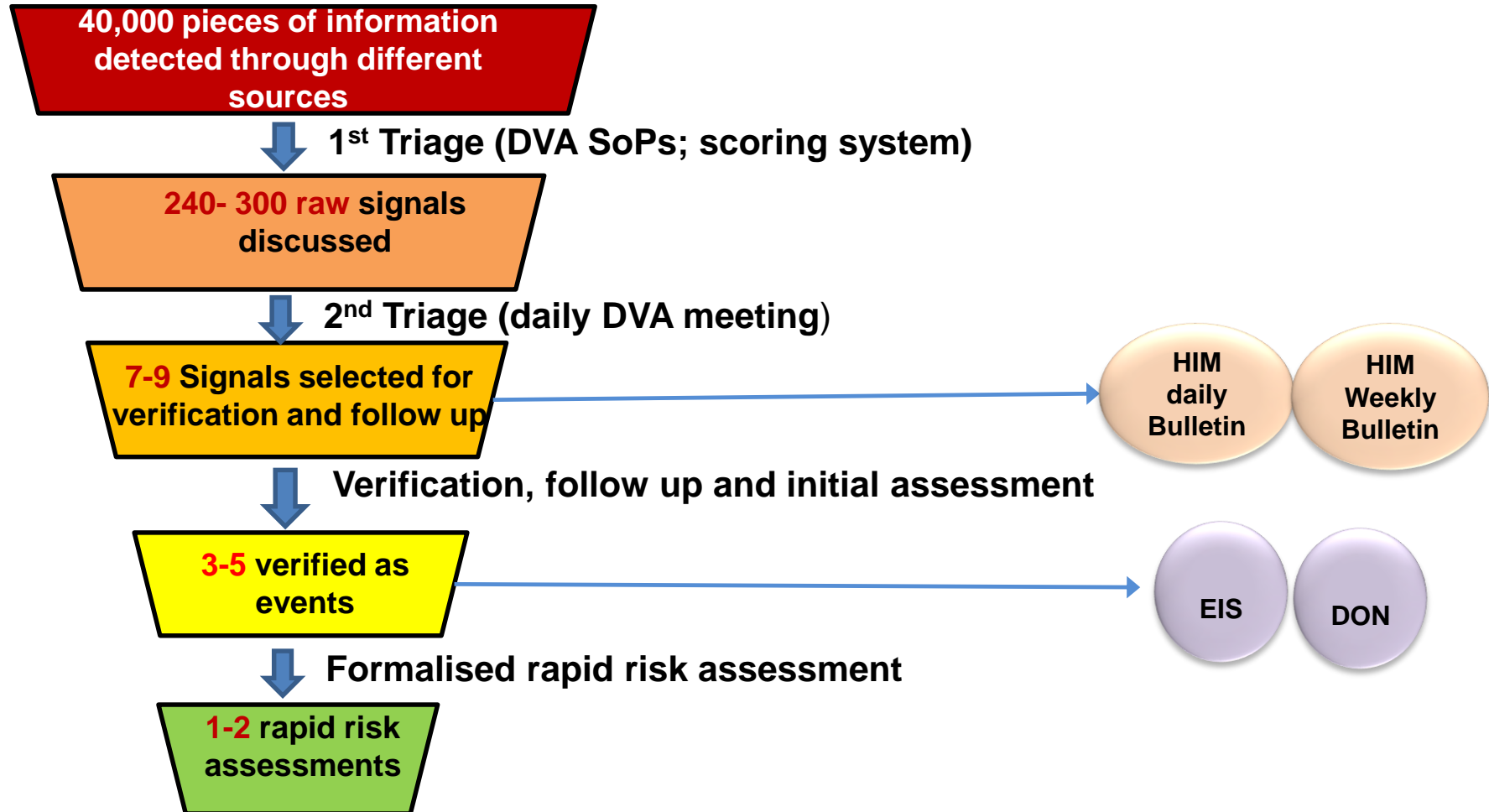


Unofficial sources

- Media scanning (EIOS)
- Social media
- Performance indicators



DVA monthly statistics



Why Social media?

Popular

~170m tweets/day are created and redistributed by millions of active users

Real-time

Shooting crime is reported within 10 minutes. The first news report appeared approximately 10 minutes later.

Broad coverage

Millions of general users (news, etc.)

Spatial-temporal

and where information

Epidemic curve

Improve timeliness of signal/event detection

Time

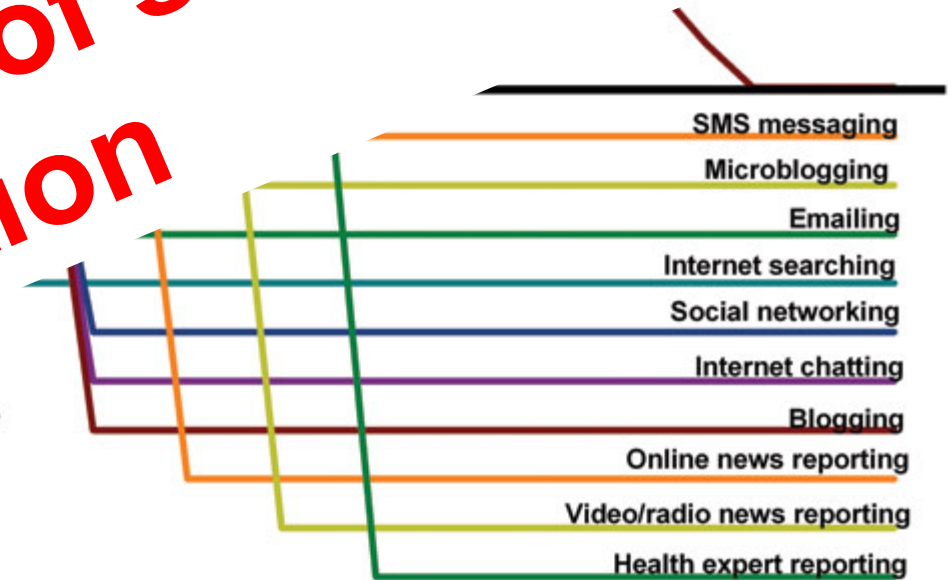


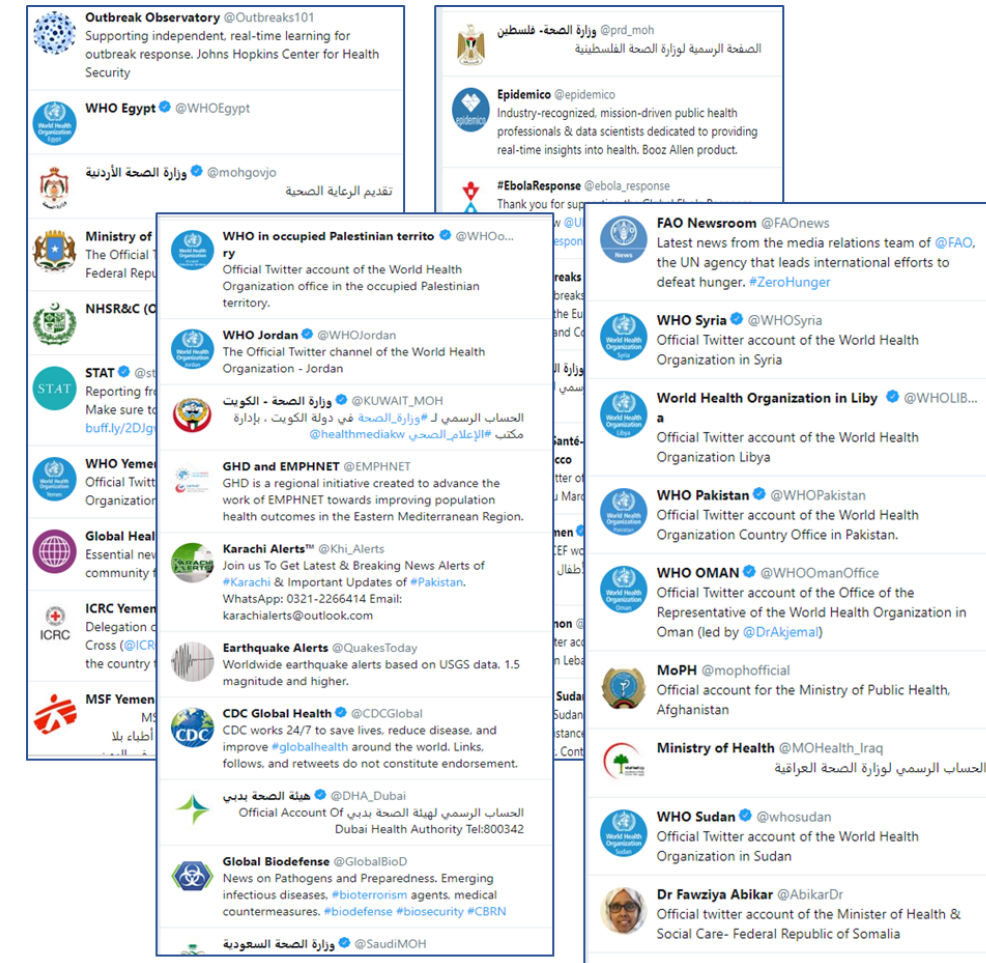
Figure. Hypothetical timing of informal electronic sources available during an outbreak. SMS, short message service.

(Ref: <http://wwwnc.cdc.gov/eid/article/15/5/08-1114-f1.htm>)



Methodology

- ❖ Create new Twitter account (not a communication outlet)
- ❖ Follow pre-identified Twitter accounts (snowball):
 - WHO EMRO country offices' accounts, EMRO MoH offices' accounts, Personal Professional account, DG's account...
 - NGOs (MSF offices, ICRC, USAID, ECDC, White Helmet)
 - Twitter suggestions
 - Famous Journalists
- ❖ In total: **137** account were followed; of them **54** accounts considered as priority accounts



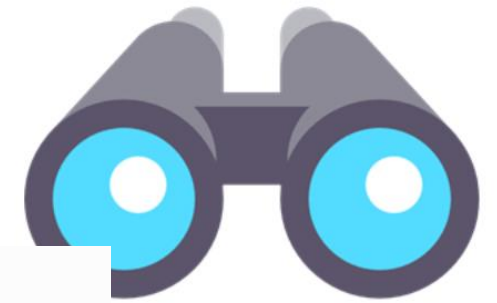


Results

- ❖ The project was piloted for 4 months (February – May 2019)
- ❖ Only 7 signals required verification; non of them verified as event.
- ❖ More than 50% of detected signals were updates to ongoing events.

Month	Signals	Required Verification	Verified as event	Event update
Feb 2019	2	0	0	0
Mar 2019	24	2	0	12
Apr 2019	16	2	0	11
May 2019	16	3	0	9
Total	58	7 (12%)	0	32 (55%)

Media toolkit



Main objective of mediatoolkit is to monitor people interactions with introduced products/ brands

How it works?

Track pre-identified keywords, in social media networks

The screenshot displays the Mediatoolkit search interface. At the top right, there is a toggle switch labeled "Track all sources" which is currently turned on. Below this, a "SET DATE RANGE" section contains two input fields: "From" with the date "2019-07-01" and "Until" with the date "2019-07-31". Below the date range, a "SORT BY" section lists three options: "Time" (which is selected with a checkmark), "Reach", and "Virality". On the left side of the interface, there are sections for "Language" (set to "All languages"), "Location" (with a dropdown arrow), and "Track specific locations". Under "Track specific locations", there are three buttons with flags and country names: "Afghanistan", "Lebanon", and "Saudi Arabia", each with a close button (x). Below these, there is a text input field labeled "Add location or start typing". At the bottom left, there is an "Exclude..." section with a text input field labeled "Add location or start typing". On the right side, partially visible, are more location buttons including "Kuwait", "Qatar", and "Yemen".

SHOW ONLY

- All 768
- Web 432
- ✓ Facebook 85
- Twitter 75
- Forum
- Comment
- Youtube 38
- Disqus 1
- Instagram 158
- TripAdvisor
- Vkontakte 1
- REDDIT 2
- Show less



RT @ReutersUK: Johnson slams 'mumbo-jumbo' about vaccines after **measles** rates rise <https://uk.reuters.com/health/uk/2022/03/24/johnson-slams-mumbo-jumbo-about-vaccines-after-measles-rates-rise/> <https://t.co/x8WSjBw8aN>

✈️ Völuspá 🇩🇰 an hour ago

REACH: N/A INTERACTIONS: N/A ENGAGEMENT RATE: N/A INFLUENCE: 2/10



Nettle Leaf tea is always super but especially good when it's allergy season or when there's a **flu** going around. It's also good for sinus relief and also an effective antioxidant with many benefits (second photo) Highly recommend, this is the best I've found. <https://t.co/QfskmtuQcJ>

✈️ عبدالله بن محمد 🇲🇪 an hour ago

REACH: N/A INTERACTIONS: N/A ENGAGEMENT RATE: N/A INFLUENCE: 2/10

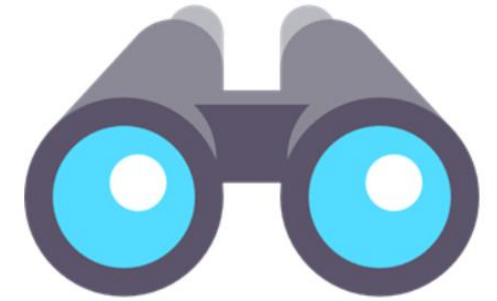


RT @WHO: Vaccine-preventable diseases include: Cervical cancer Cholera Diphtheria Hep B Influenza Japan B Measles Meningitis Mumps Pertussis Pneumonia Polio Rabies Rotavirus Rubella Tetanus Typhoid Varicella Yaws <https://t.co/eOkctcVyiV> #VaccinesWork!

✈️ Brigitte K. Mountain 🇪🇬 an hour ago

REACH: N/A INTERACTIONS: N/A ENGAGEMENT RATE: N/A INFLUENCE: 2/10

Media toolkit



Results

- ❖ Early detection of Dengue outbreak in Pakistan



24 people test positive for **dengue fever** in 24 hours in Islamabad.

Twitter Pakistan News 2 hours ago

REACH: 4,622 INTERACTIONS: 1 ENGAGEMENT RATE: 0.02% INFLUENCE: 6/10

- ❖ Updates for ongoing events



Even garbage collection system has disappeared, sweepers are rarely in action, serious **dengue** danger looms



A teenage girl traveling through Southern California may have exposed hundreds of people to the **measles** when she visited several popular tourist destinations Friday. <https://fox43.com/2019/08/25/new-zealand-teen-with-measles-may-have-exposed-hundreds-at-disneyland-and-other-tourist-destinations>

Twitter WPMT FOX43 3 hours ago

REACH: 4,161 INTERACTIONS: N/A ENGAGEMENT RATE: N/A INFLUENCE: 6/10

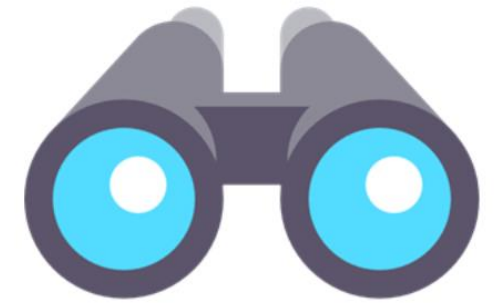
Next steps

- ❖ In-depth analysis and evaluation for the added value & effectiveness of the mediatoolkit.

Media toolkit

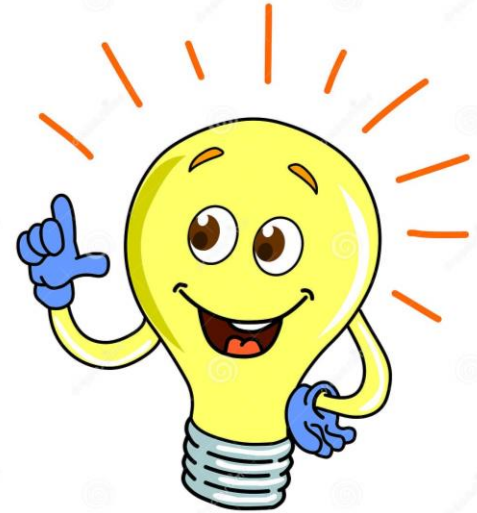
Concerns

- ❖ Data security and storage; private servers!
- ❖ Level of Noise → work load
- ❖ Cost; 4K–11K \$/year depending on number of queries per month



Lesson learned and recommendation

- ❖ There is a need to include social media in detection process.
- ❖ New social media monitoring programs should be explored e.g. TEDAS: Twitter Based Event Detection and Analysis System
- ❖ In-depth analysis and evaluation for the added value & effectiveness of social media monitoring needs to be conducted.



Acknowledgment

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