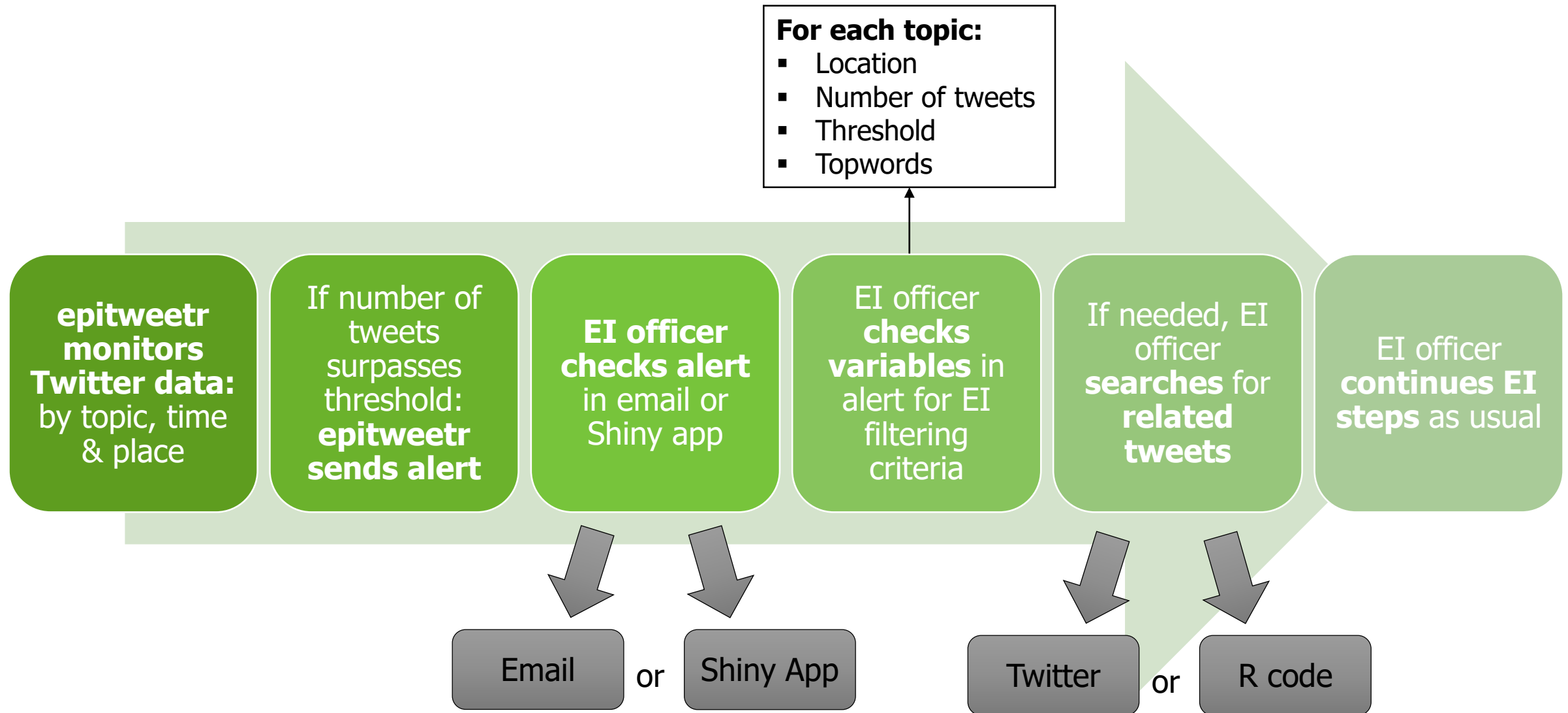


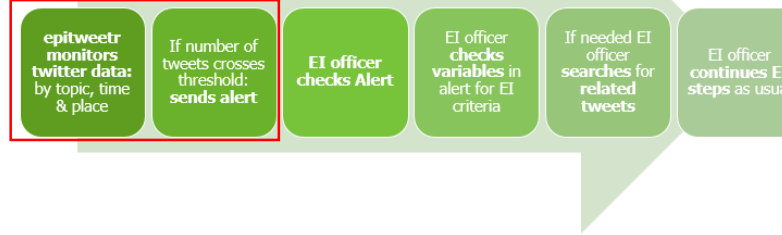
# Analysis of signals detected by epitweetr at ECDC

Ariana Wijermans, Laura Espinosa, Thomas Mollet  
ESCAIDE side session, 24 November 2020

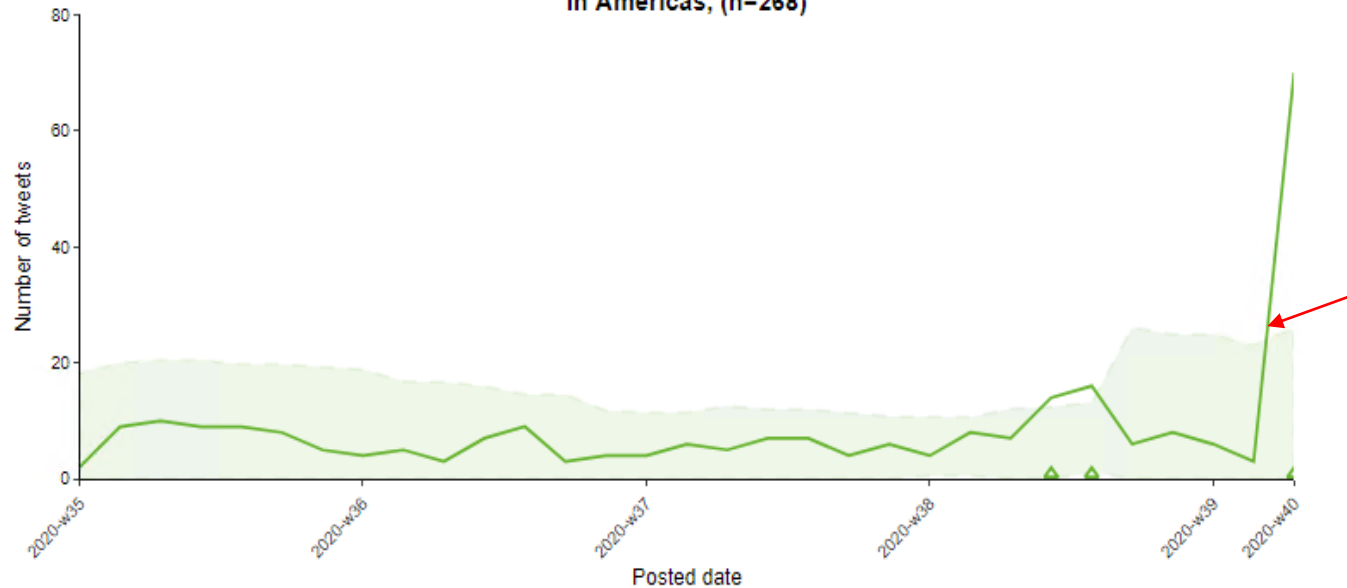
# Detecting signals with epitweetr: Process overview



# Detecting/Sending signals



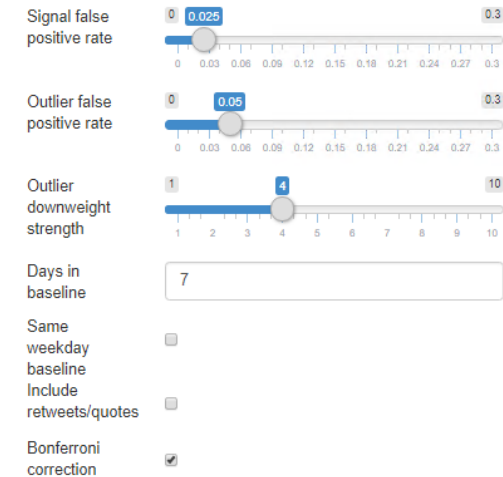
Number of tweets mentioning leptospirosis from 2020-08-30 to 2020-09-29 in Americas, (n=268)



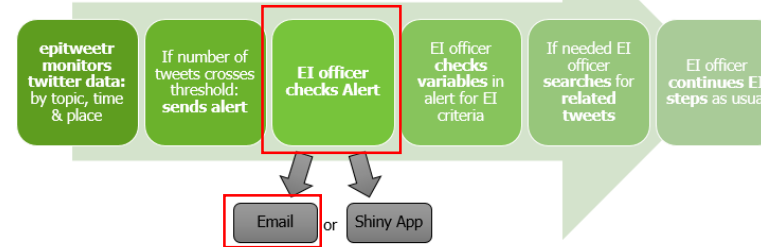
If the number of tweets surpasses the threshold of what is normal/expected based on monitored trends  
-> epitweetr detects a signal

Threshold is determined by configurable variables:

## Signal detection



# Checking Alerts: Email



Tue 29/09/2020 13:11  
 [epitweetr] found 94 signals. Top alerts: Malaria (World (all), World (geolocated)), Leptospirosis (World (all), World (geolocated)), Cholera (Asia, Eastern Mediterranean Region (WHO EMRO))

To Enterprise Vault + Get more apps

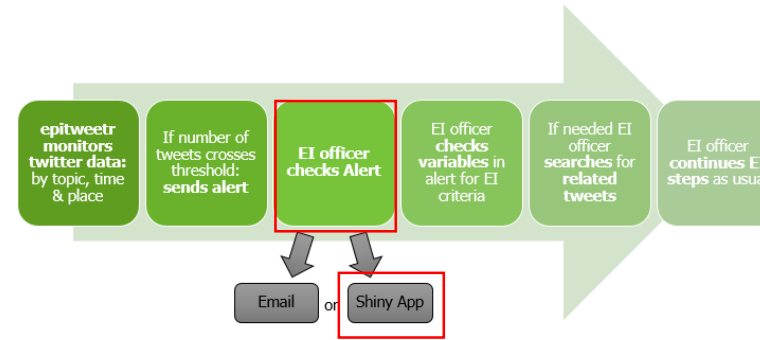
## Leptospirosis

	Date	Hour	Topic	Region	Top words	Tweets	% important user	Threshold	Baseline	Alert confidence	Outliers confidence	Downweight strength	Bonf. corr.	Same weekday baseline	Day_rank	With retweets	Location
1	2020-09-29	6	Leptospirosis	World (all)	due (65), goose (65), hospital (65), retweet (65), mnr6nd7zun (59), pegas (45), lorennayuki (10), pegas (9), pneumonia (8), pq (8)	245	0.00	240.87	7	0.02	0.05	4	TRUE	FALSE	1	FALSE	tweet
2	2020-09-29	6	Leptospirosis	World (geolocated)	due (63), goose (63), hospital (63), retweet (63), mnr6nd7zun (57), pegas (5), chao (3), menina (3), ali (2), casal (2)	94	0.00	47.43	7	0.02	0.05	4	TRUE	FALSE	1	FALSE	tweet
3	2020-09-29	6	Leptospirosis	Americas	due (58), goose (58), hospital (58), retweet (58), mnr6nd7zun (53), rato (2), _higordias10 (1), 57xefi1bhc (1), af (1), amyretrieverdog (1)	66	0.00	25.06	7	0.02	0.05	4	TRUE	FALSE	1	FALSE	tweet

Process Alert

- For each topic:**
- Location
  - Number of tweets
  - Threshold
  - Topwords
  - etc.

# Checking Alerts: Shiny App



## For each topic:

- Location
- Number of tweets
- Threshold
- Topwords
- etc.

epitweetr Dashboard Alerts Geotag evaluation Configuration Troubleshoot

### Generated alerts

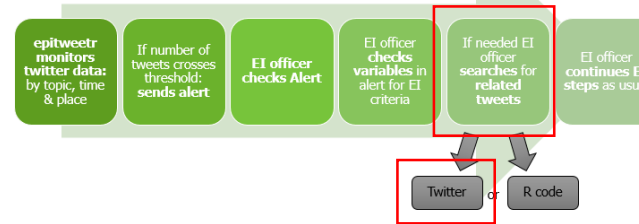
Detection date: 2020-09-29 to 2020-09-29 Topics: Leptospirosis Countries & regions:

Show 10 entries Search:

	Date	Hour	Topic	Region	Top words	Tweets	% important user	Threshold	Baseline	Bonf. corr.	Same weekday baseline	Day rank	With retweets	Location
1	2020-09-29	6	leptospirosis	Americas	due (58), goose (58), hospital (58), retweet (58), mnr6nd7zun (53), rato (2), _higordias10 (1), 57xefi1bhc (1), af (1), amyretrieverdog (1)	66	0	25.06499	7	true	false	1	false	tweet



# Find tweet: Twitter Account




Ctrl + C

**Top words**  
 due (65), **goose** (65), **hospital** (65), retweet (65), mnr6nd7zun (59), pegar (45), lorennayuki (10), pega (9), pneumonia (8), pq (8)

Ctrl + V




Ministère de la Santé RDC  
 @MinSanteRDC  
 Compte officiel du Ministère de la Santé de la République Démocratique du Congo  
 Official account of the Ministry of Health of DRC  
 presse@sante.gouv.cd  
 Translate bio  
 Kinshasa Joined May 2018  
 73 Following 46.6K Followers

goose hospital

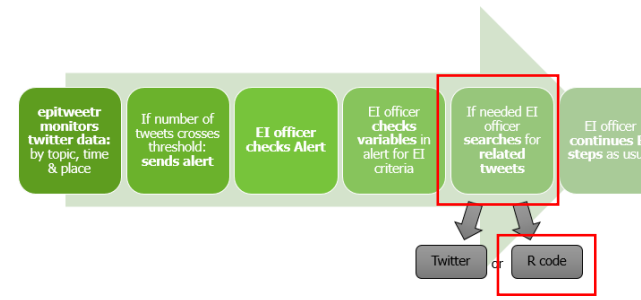
Top Latest People Photos Videos

kirsten @kirstenlives · 14m  
 @ChrisCuomo bit.ly/boostgoose Can you please retweet? **Goose** is in the hospital with leptospirosis



Give Goose a Fighting Chance, organized by Kirsten Berg  
 This is my little vampire, Goose. He's having some troubles and needs a little help. W... Kirsten Berg needs your support for Give Goose a ...  
 gofundme.com

# Find tweet: R Script



Import JSON file for topic and day

- `jsonlite::stream_in`

Look in the list (requests) for tweets containing top words

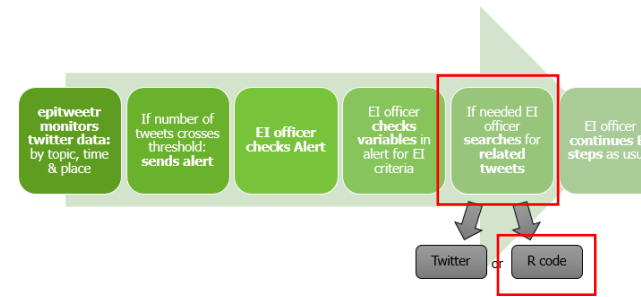
- for loop
- `grepl`

Subset: only tweets with top words

View dataframe



# Find tweet: R Script



Import JSON file for topic and day

- `jsonlite::stream_in`

Look in the list (requests) for tweets containing top words

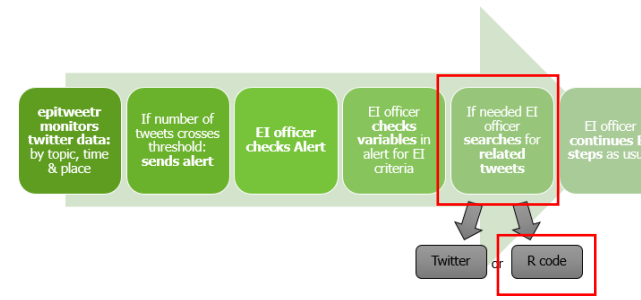
- for loop
- `grepl`

Subset: only tweets with top words

View dataframe



# Find tweet: R Script



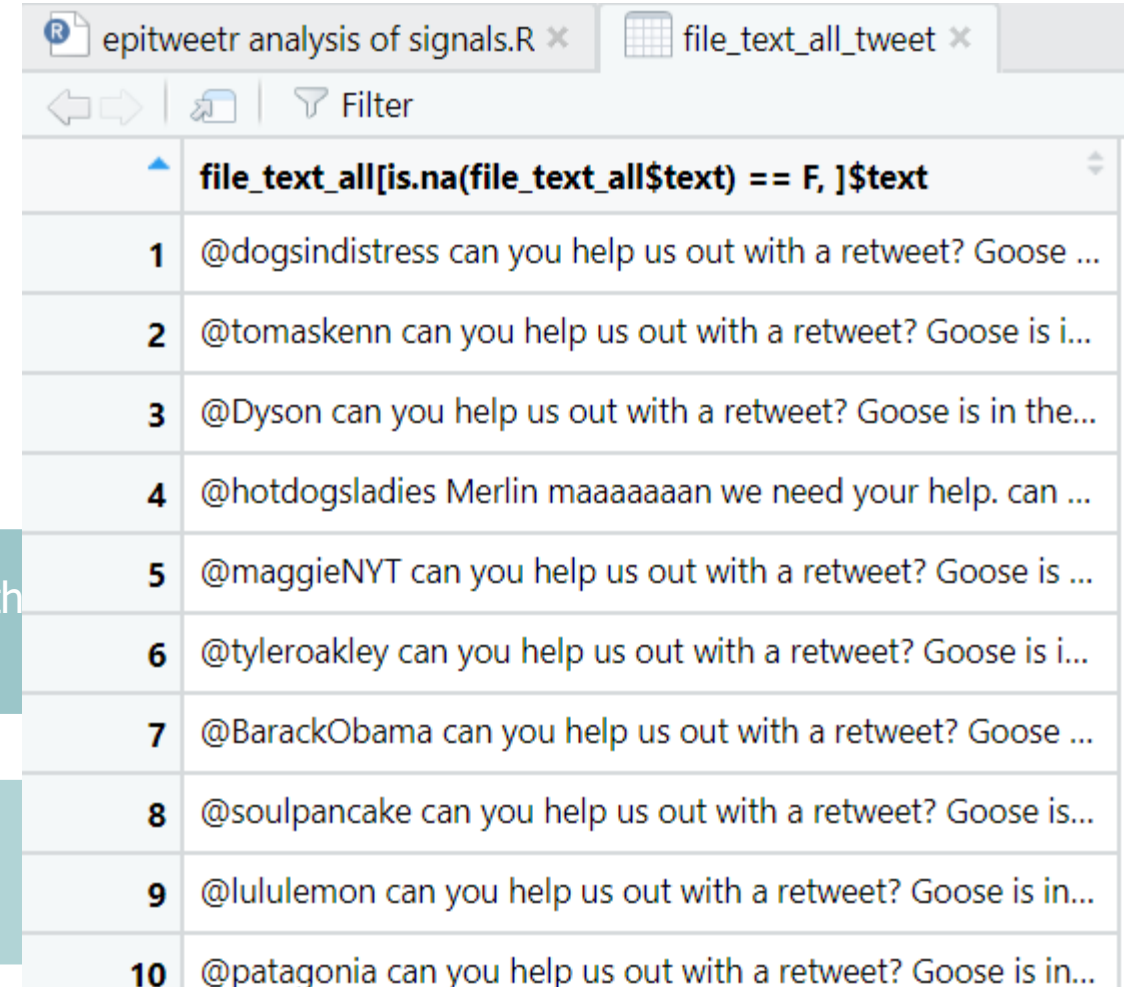
Import JSON file for topic and day

- `jsonlite::stream_in`

Look in the list (requests) for tweets containing top words

- for loop
- `grep`

Subset: only tweets with words

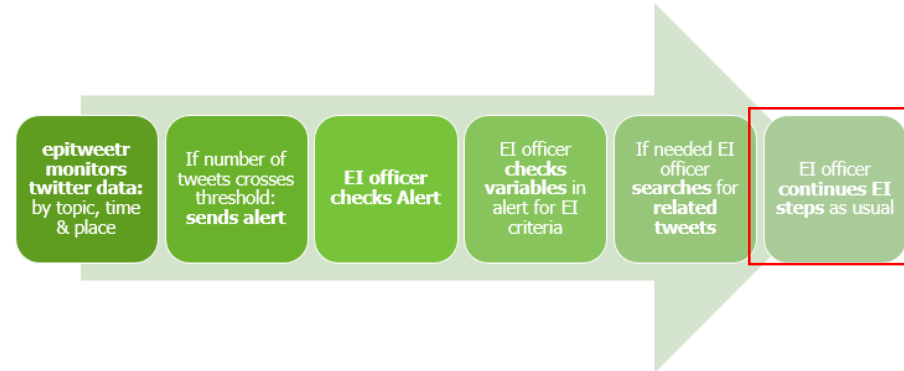


epitweetr analysis of signals.R x file\_text\_all\_tweet x

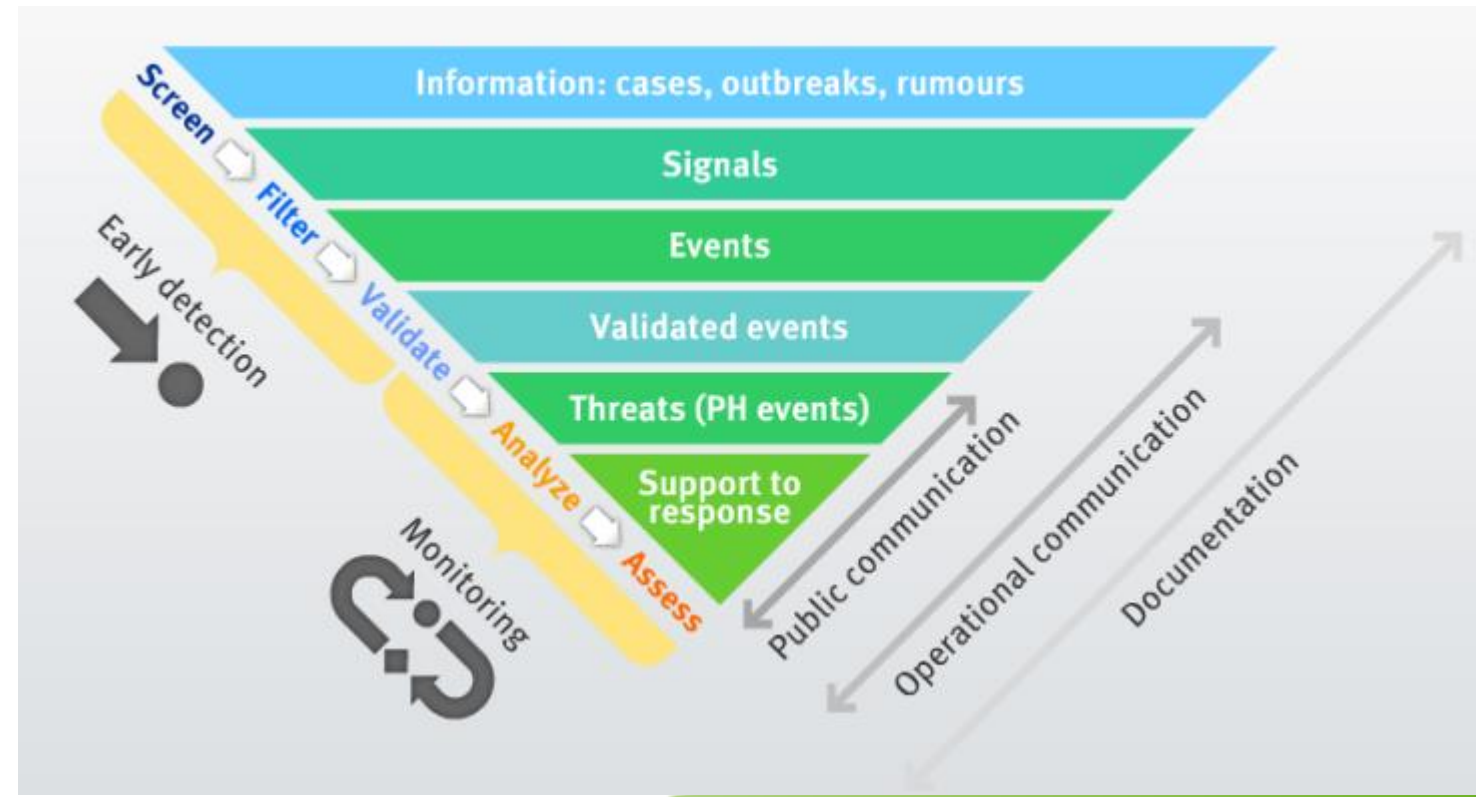
Filter

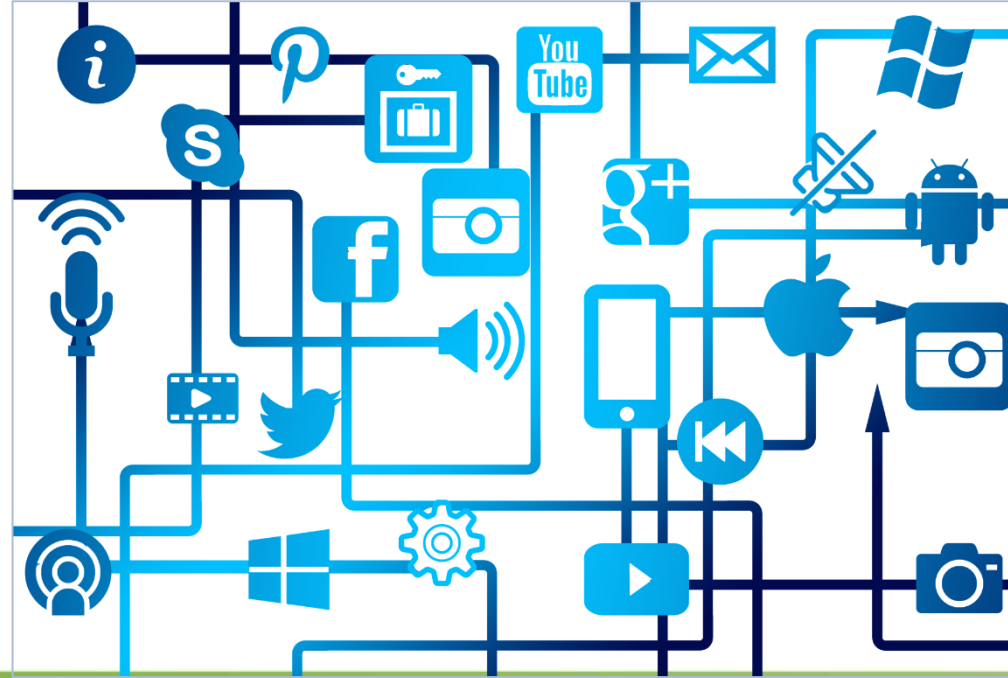
	file_text_all[is.na(file_text_all\$text) == F, ]\$text
1	@dogsindistress can you help us out with a retweet? Goose ...
2	@tomaskenn can you help us out with a retweet? Goose is i...
3	@Dyson can you help us out with a retweet? Goose is in the...
4	@hotdogsladies Merlin maaaaaaan we need your help. can ...
5	@maggieNYT can you help us out with a retweet? Goose is ...
6	@tyleroakley can you help us out with a retweet? Goose is i...
7	@BarackObama can you help us out with a retweet? Goose ...
8	@soulpancake can you help us out with a retweet? Goose is...
9	@lululemon can you help us out with a retweet? Goose is in...
10	@patagonia can you help us out with a retweet? Goose is in...

## Continue EI Steps:



- Filter, Validate, Analyse, Assess, Communicate
- Take action if needed





**Thank you for your attention  
Questions?**