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Digital Futures Capstone Project



#FakeNews?

An Analysis of conspiracy theories across Twitter relating to
COVID-19

What's happening?

Agenda



140

Tweet



Introduction



Initial Exploration



Key Findings



Tweets over Time



Geographical Data



Conspiracies Content



**Trends against a COVID
timeline**



Conclusion & Limitations



Q&A?

Introduction

Context

Increase in the proliferation of medical disinformation and conspiracy theories

Theorists adapt to fears about the spread of COVID-19 by pushing misinformation, which have gained significant traction on platforms like Twitter

Perfect environment for false rumours and fake news to flourish

When people are under heightened stress and want to resolve uncertainty, they can lose their ability to weigh and judge information effectively

Important to counter false information with clear, high-quality evidence



Method

- Date Range: **24th July - 30th August 2020**
- Scraped from **#covid19**
- Number of Tweets: **179,108**
- Unique Users: **92276**
- Scraped 6,000 recent Tweets under hashtags **#covid19**, **#coronavirus**, **#covid**, **#virus**, **#vaccine** & **#pandemic**
 - Identified **104** unique hashtags associated with conspiracy theories
- Filtered dataset to those which used any of the 104 hashtags
 - **1808** Tweets
 - **1445** Unique Users

"We are all prone to believing information when it is repeated, easy to process and when it aligns with our prior attitudes and world views" – Full Fact

Initial Exploration

Top Hashtags

[1] #Coronavirus [6] #Trump

[2] #Pandemic [7] #Lockdown

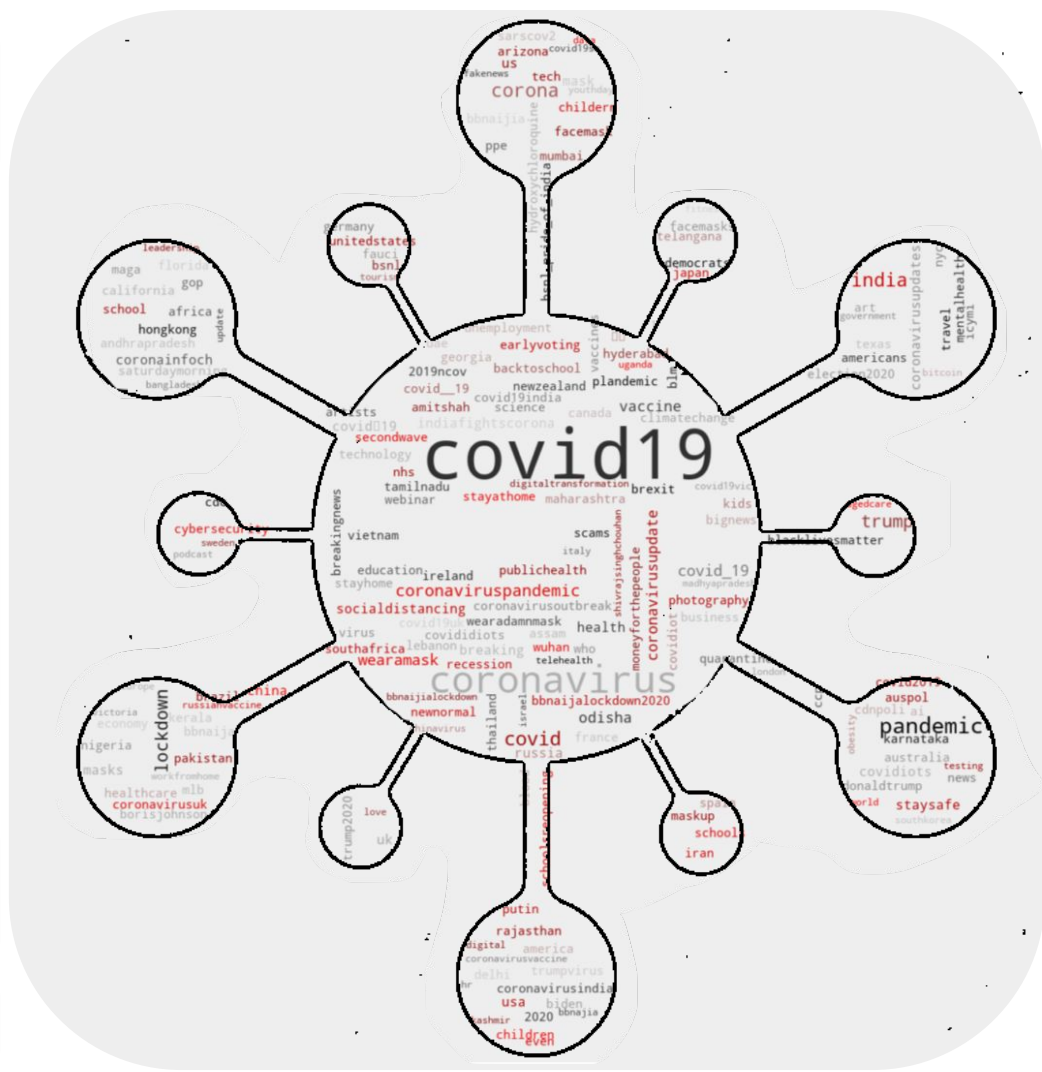
[3] #Covid [8] #CoronavirusPandemic

[4] #India [9] #covid_19

[5] #Corona **[10]** #WearAMask

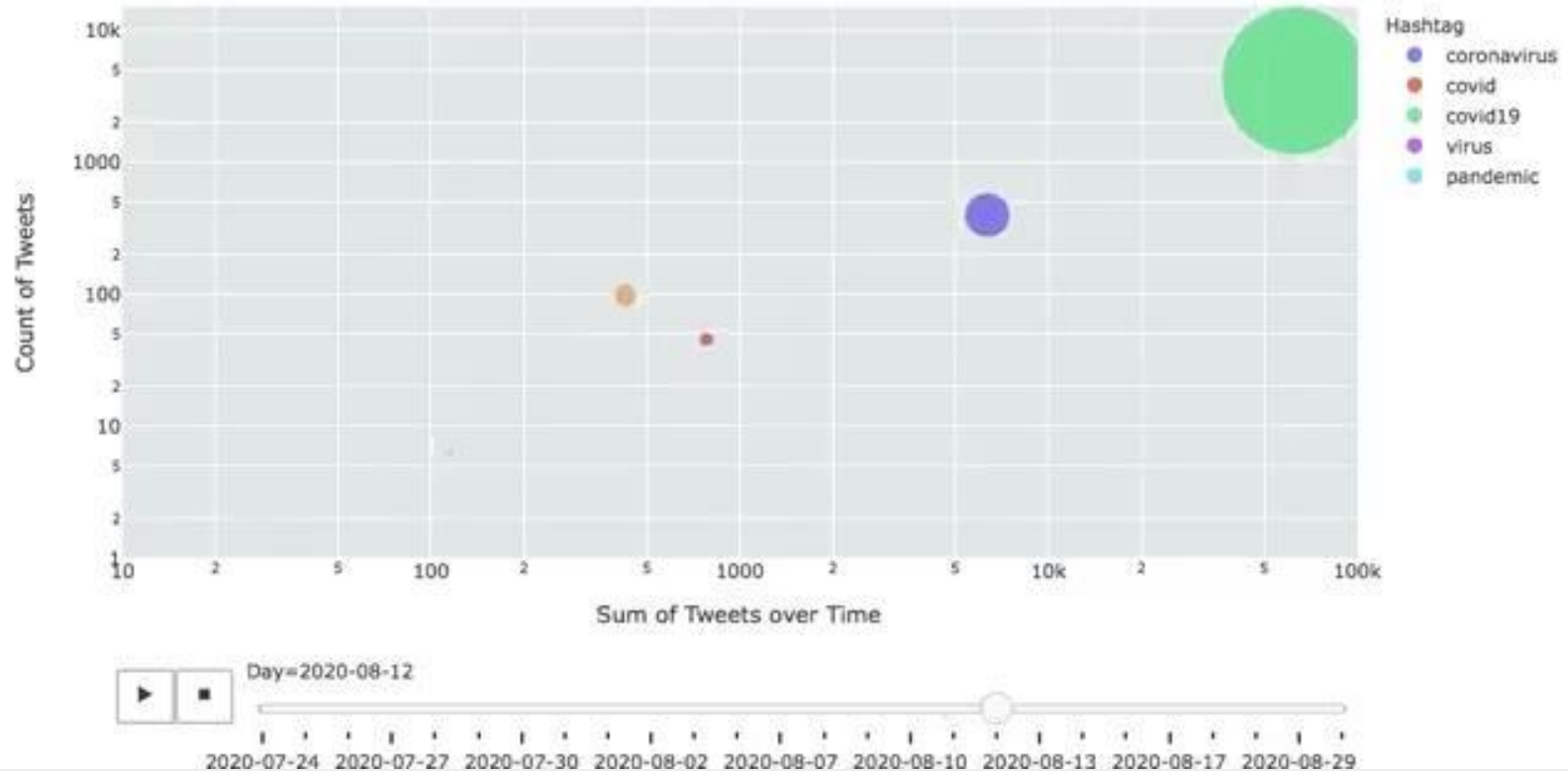
#Covid19 mentioned a total of 100,312 times
#Coronavirus next at 10,198
#Pandemic used 1,625

[32] #Hydrochloroquine [33] #TrumpVirus

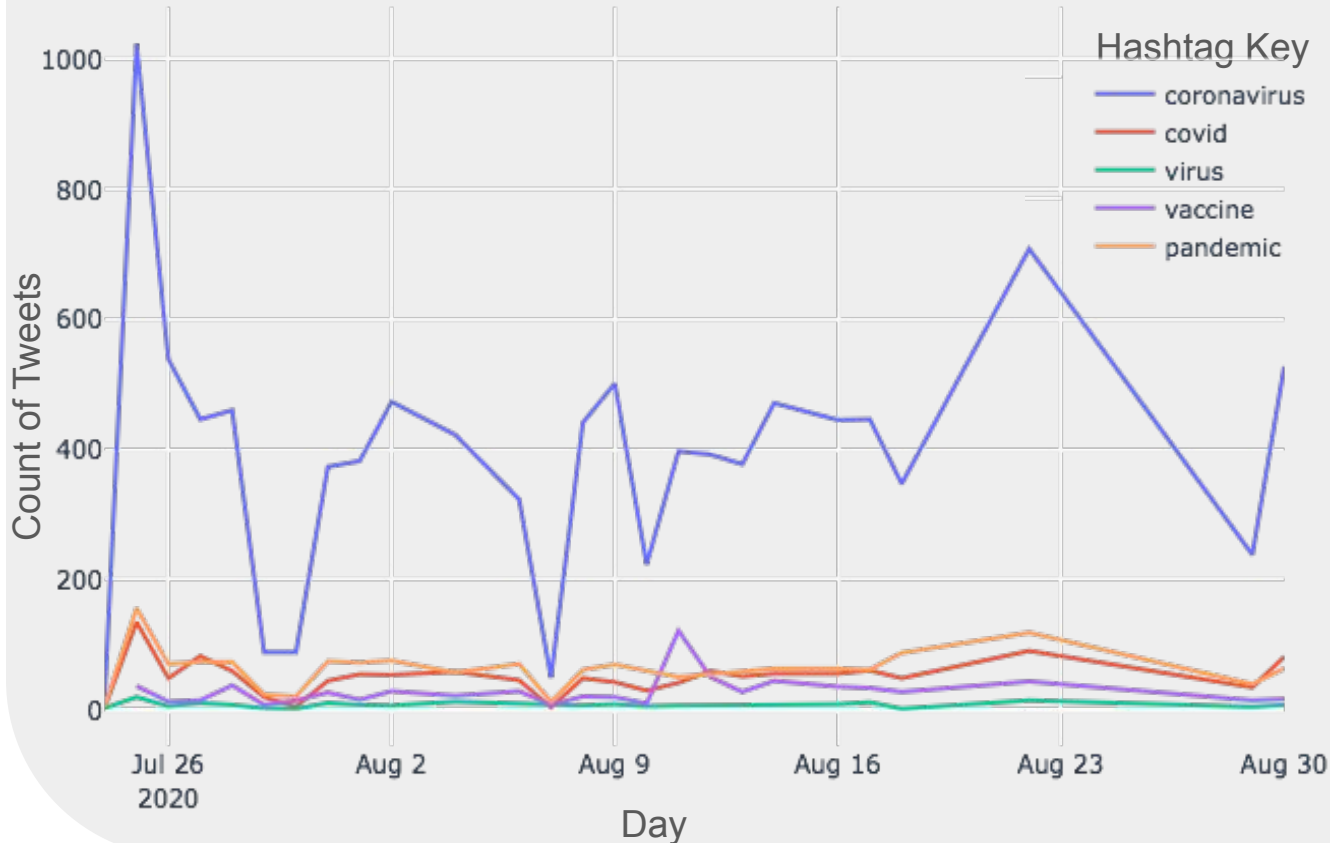


Dynamic Visualisation of COVID defining hashtags

Tweet Count of 6 Top Hashtags in Time Period (24th July - 30th August)



Main Hashtags over Time

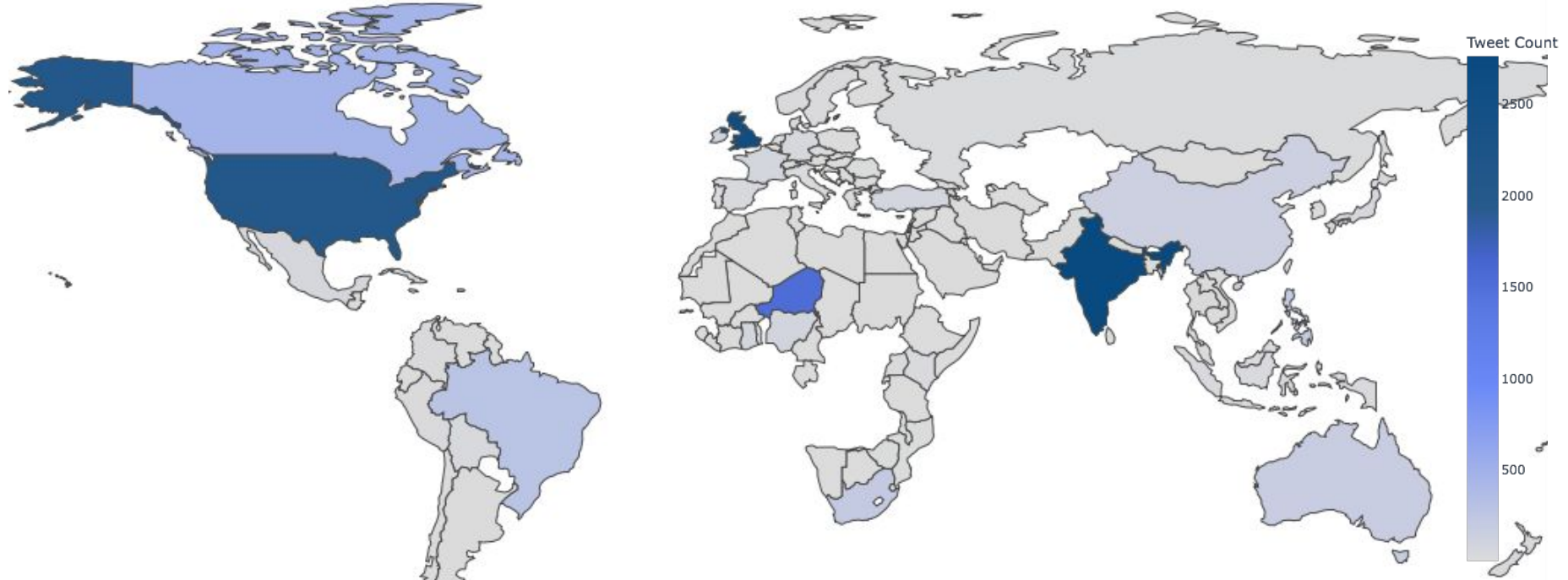


#covid19 most used
- Max count **9,504**

#coronavirus
- 10% sum size of #covid19
- Max. count: **1020**
- Troughs: July 30th (**88**) and August 7th (**49**)

#vaccine
- Peaks on August 11th at **121** (4x average)
- Russia approves 'Sputnik V' vaccine

COVID Tweets Across the World



1

India: 22.8%

2

UK: 20.9%

3

USA: 16.8%

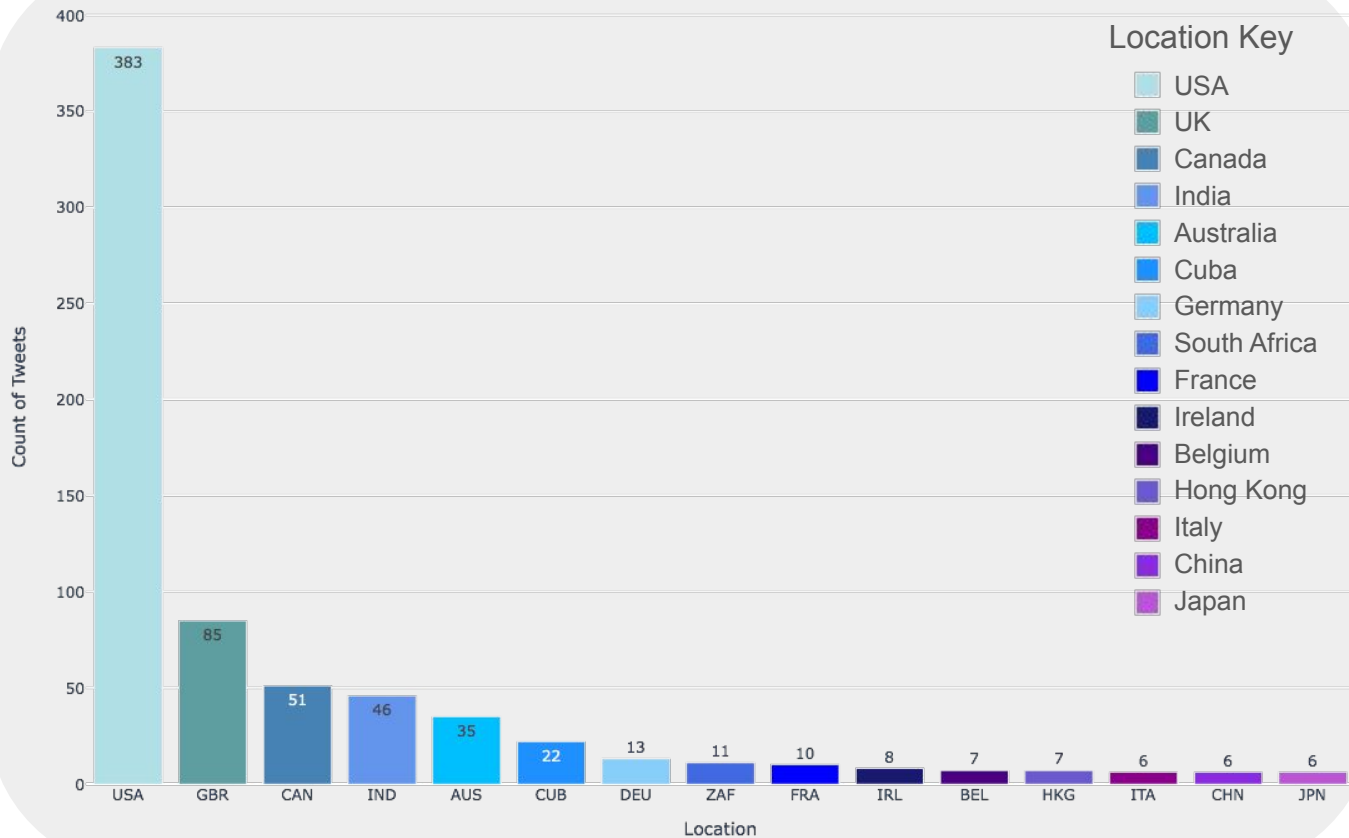
4

Niger: 12.6%

5

Canada: 3.75%

COVID Conspiracy Tweets Across the World



USA: **over 50%**

UK: 11.2%

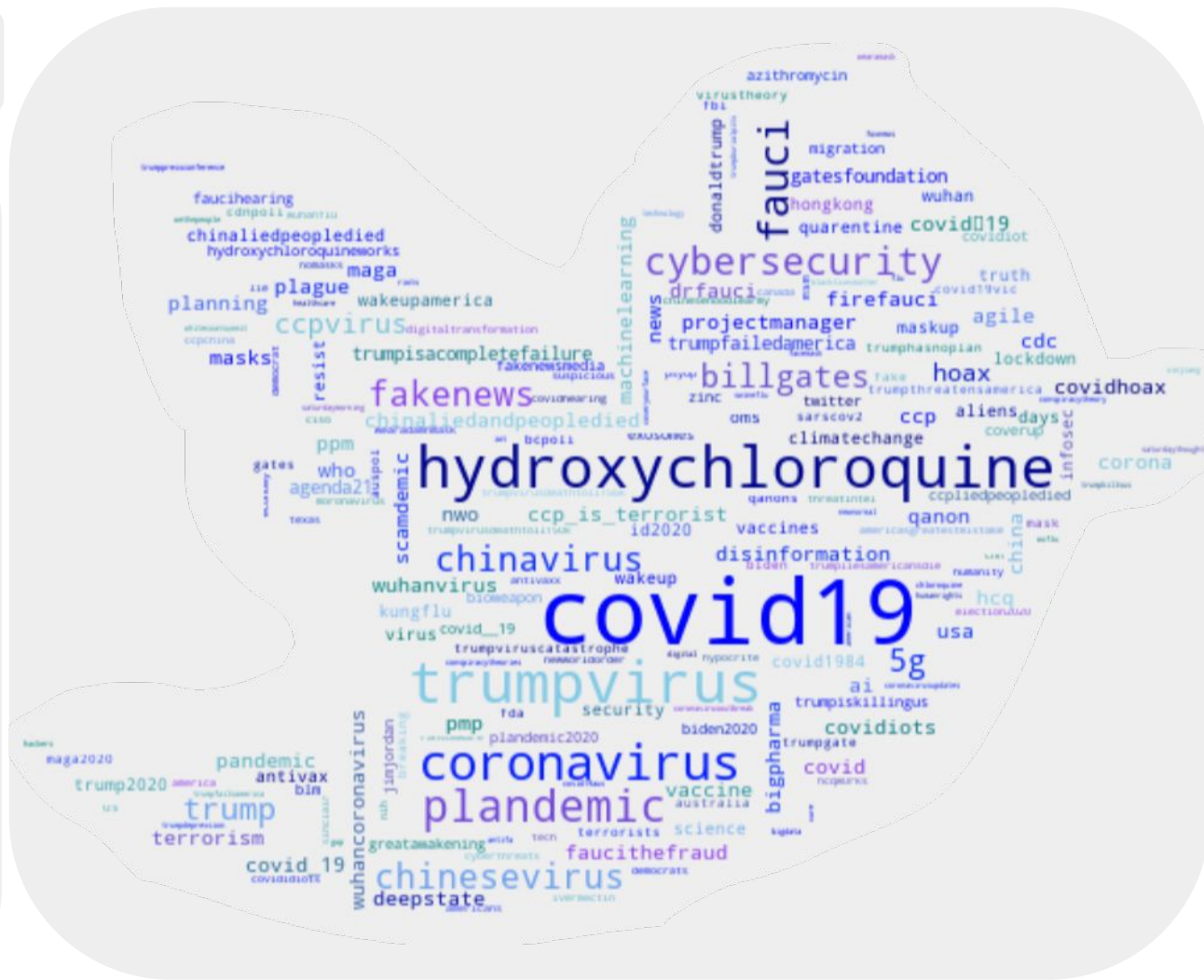
Canada: 6.06%

Not all had geo location data

Results could be impacted by multiple variables, but particularly the fact that all 104 hashtags analysed were in English

Top Hashtags

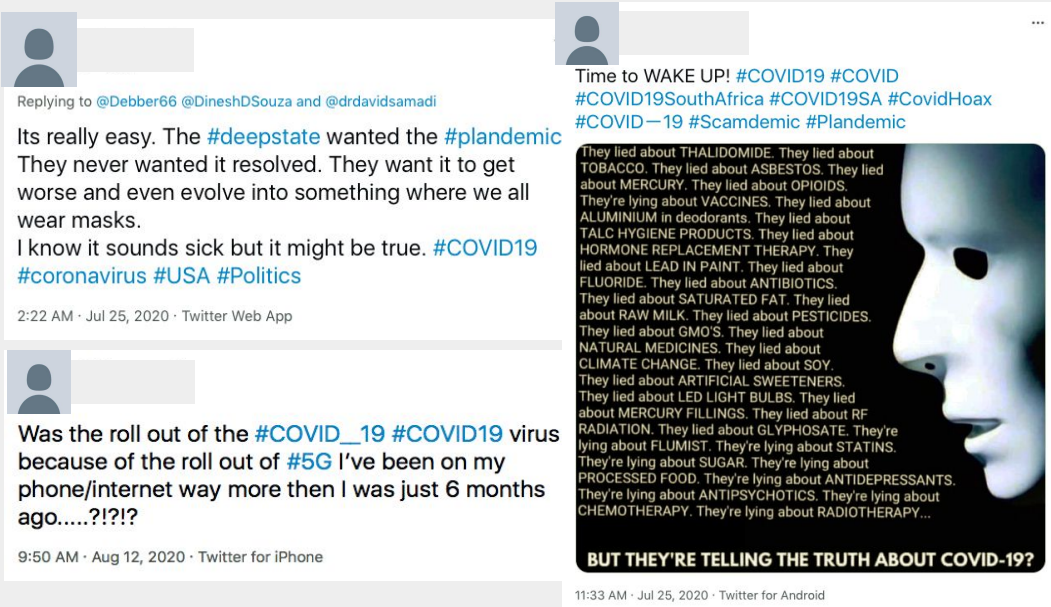
- [1] #Hydrochloroquine (337)
- [2] #TrumpVirus (325)
- [3] #Plandemic (179)
- [4] #Fauci
- [5] #FakeNews
- [6] #ChinaVirus
- [7] #ChineseVirus
- [8] #5G
- [9] #BillGates
- [10] #Trump



Tweet Content



Example of Tweets



Large proportion of the tweets were Anti-Asian, specifically Chinese (**#CCPVirus**, **#WuhanFlu**, **#LabLeakTheory**)

Significant proportion were also Anti-US (**#TrumpVirus**, **#BillGates**, **#Fauci**, **#DeepState**, **#qanon**)

Fake News: Fake news and general disinformation, including hashtags like **#LiberalMedialsTheEnemy**

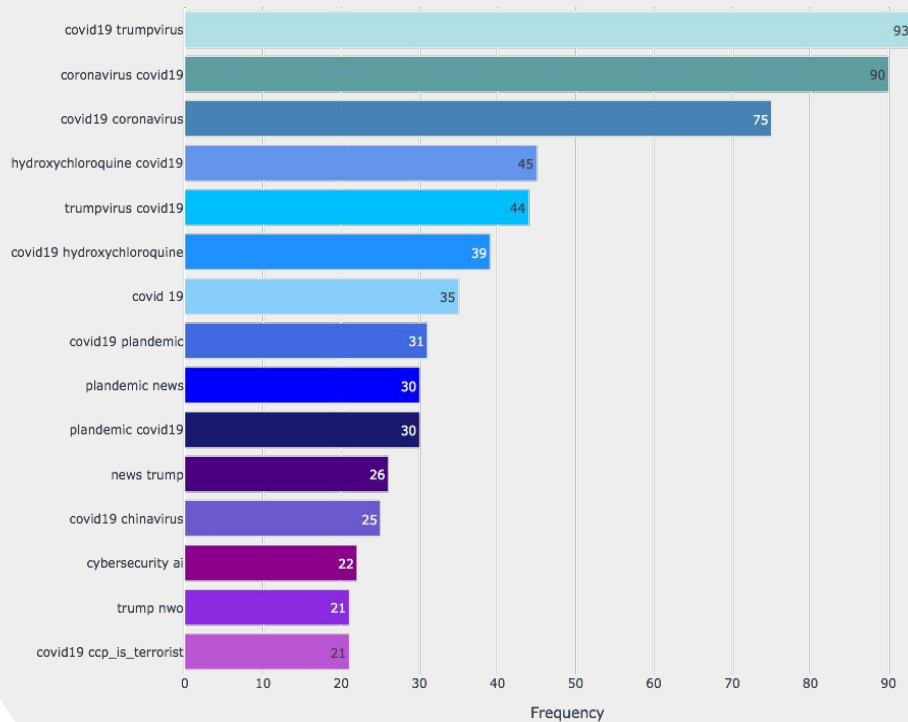
Anti-Vaccination: Magnetic Powers and Microchips

5G, including **#stop5g**

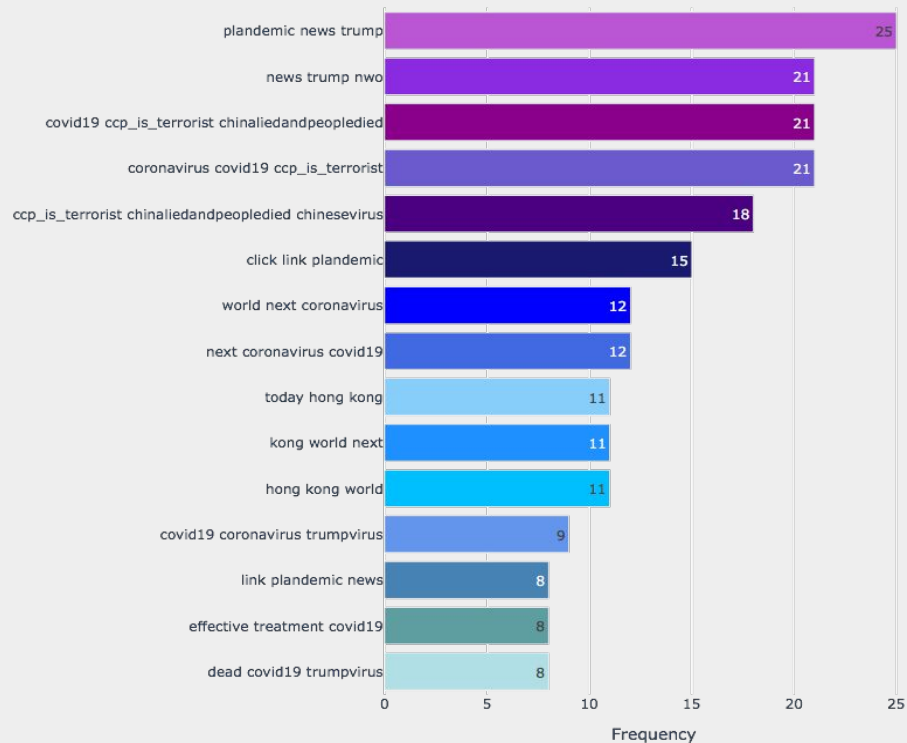
Non-specific (General control, depopulation, **#Plandemic**, **#hoax**)

Bigrams/Trigrams

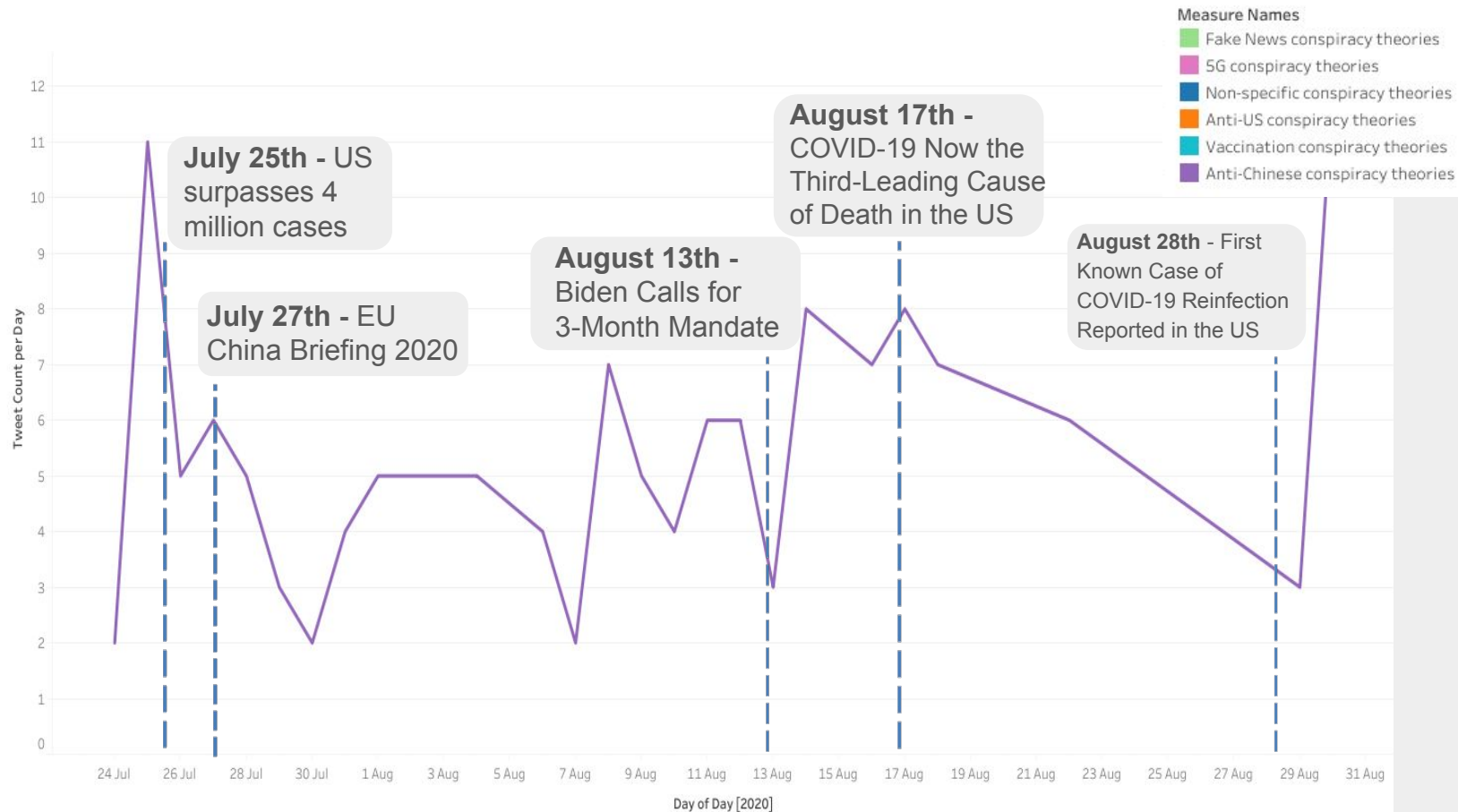
Top 15 Bigrams



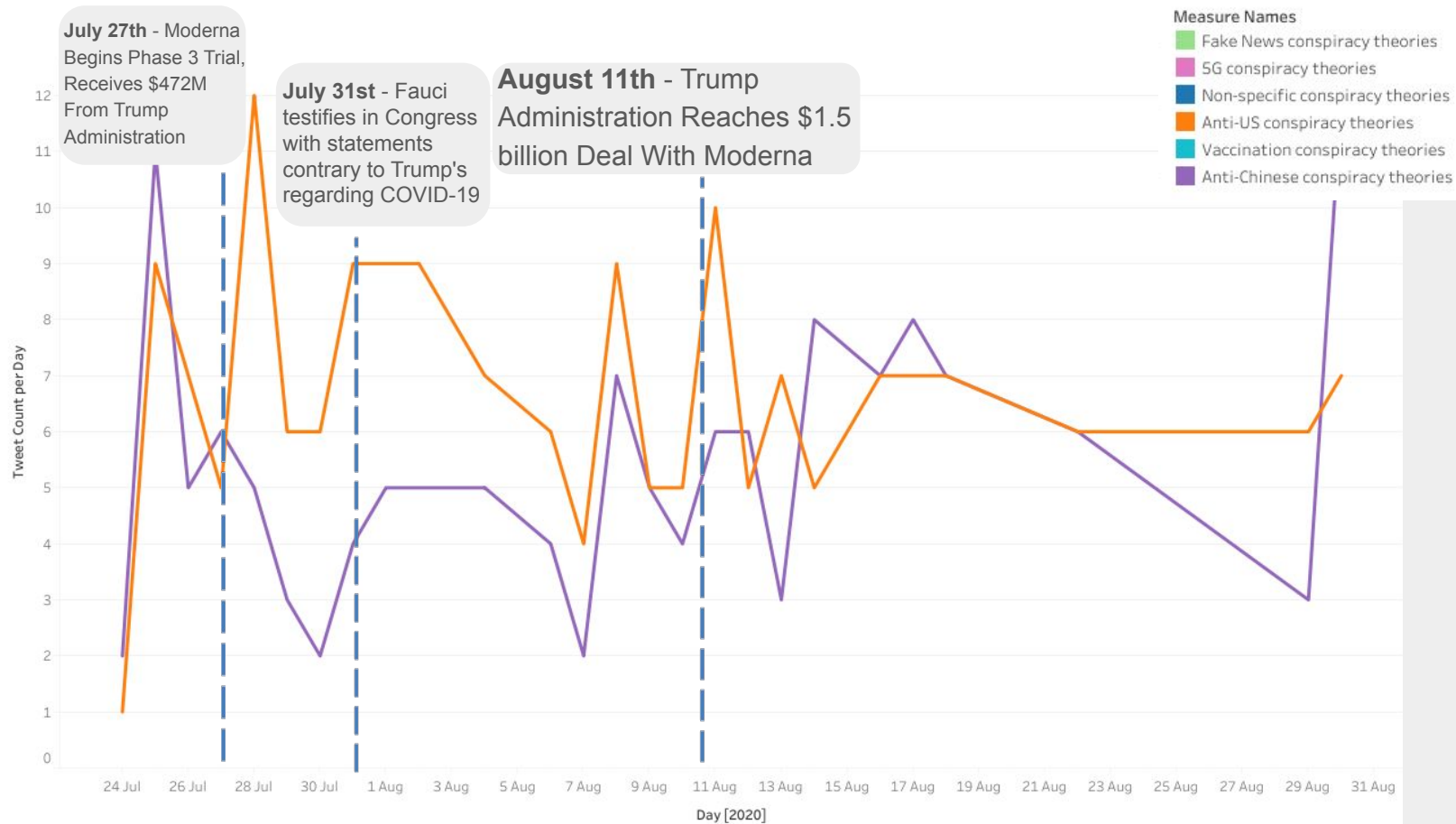
Top 15 Trigrams



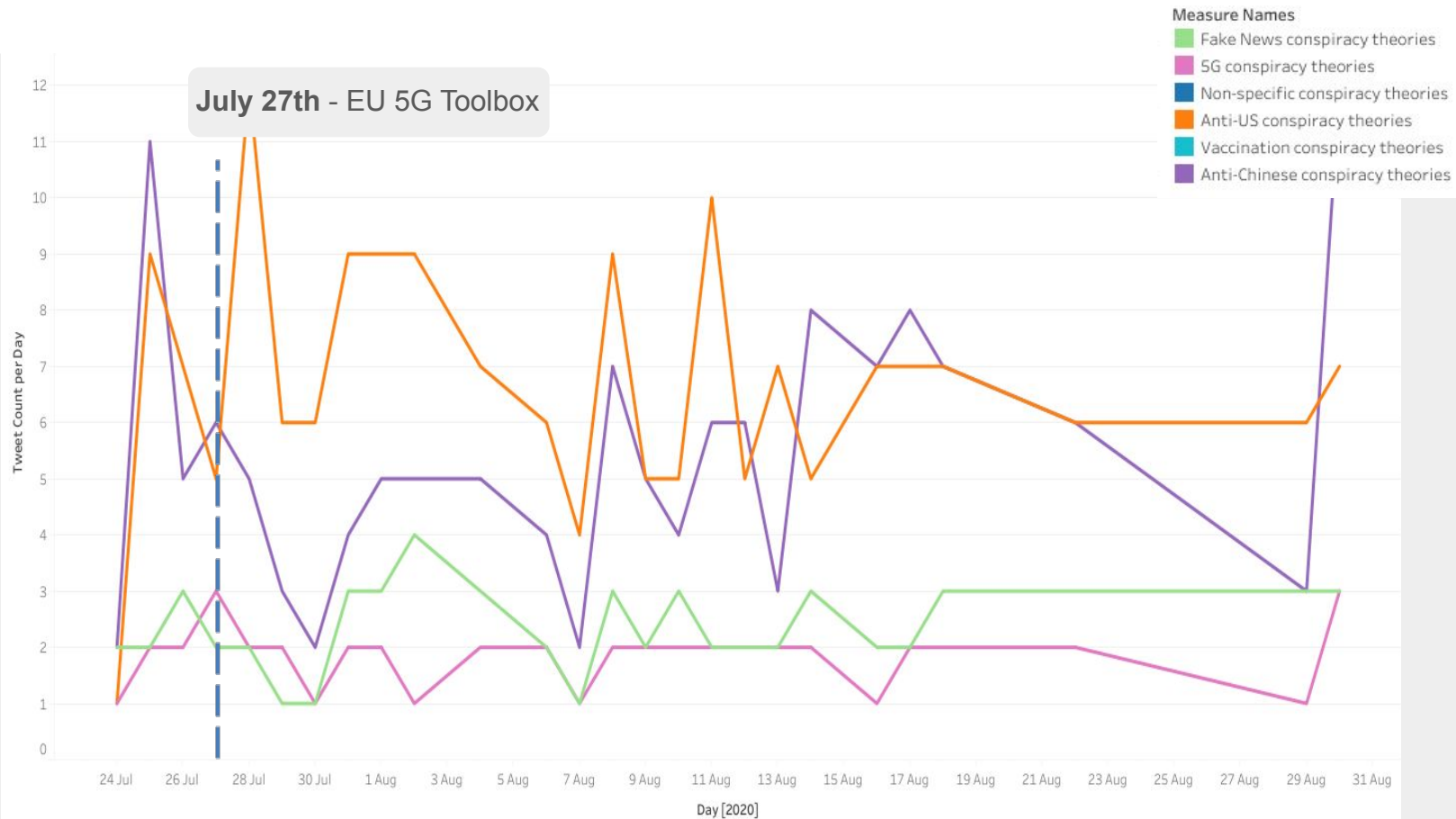
A Conspiracy Timeline



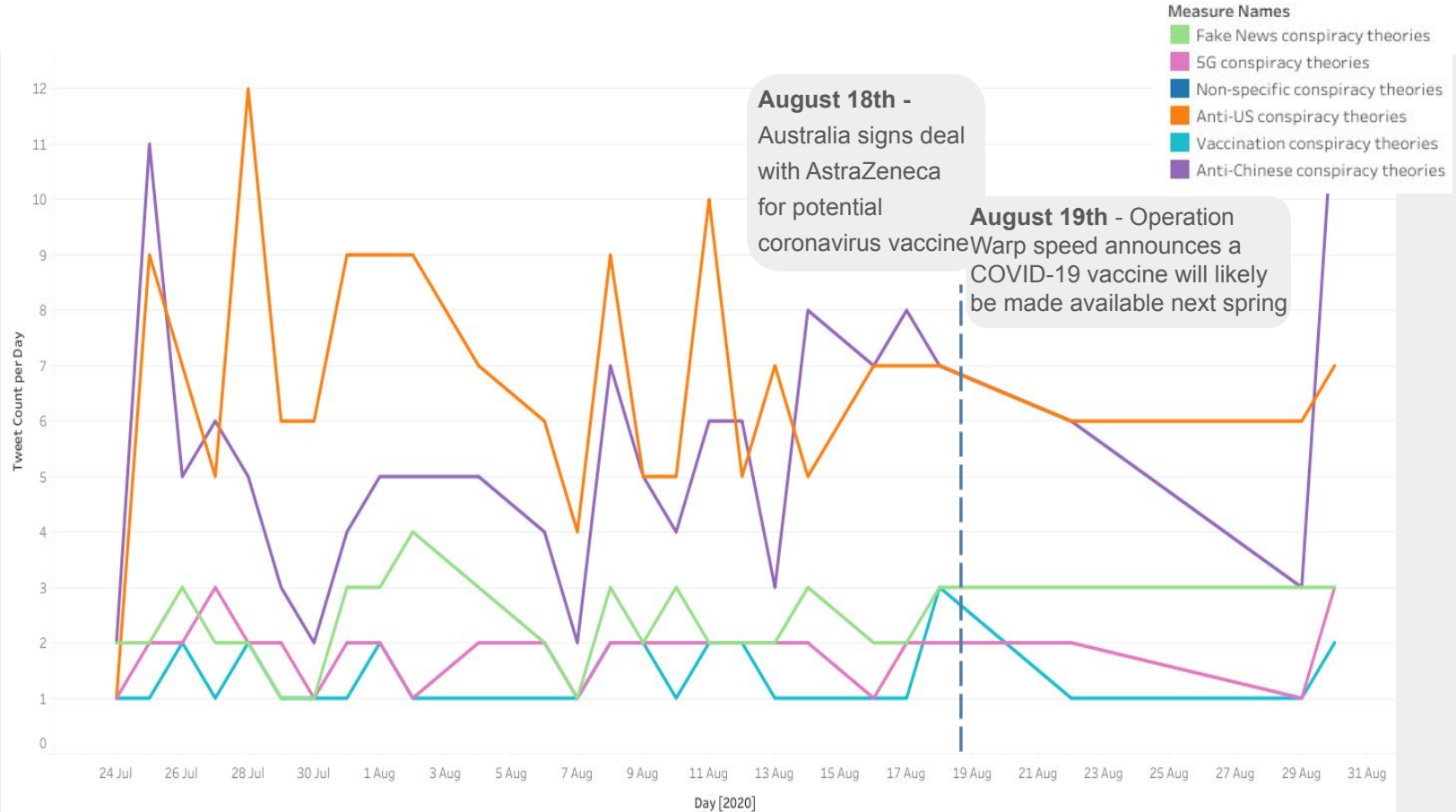
Anti-Asian and Anti-US Conspiracies



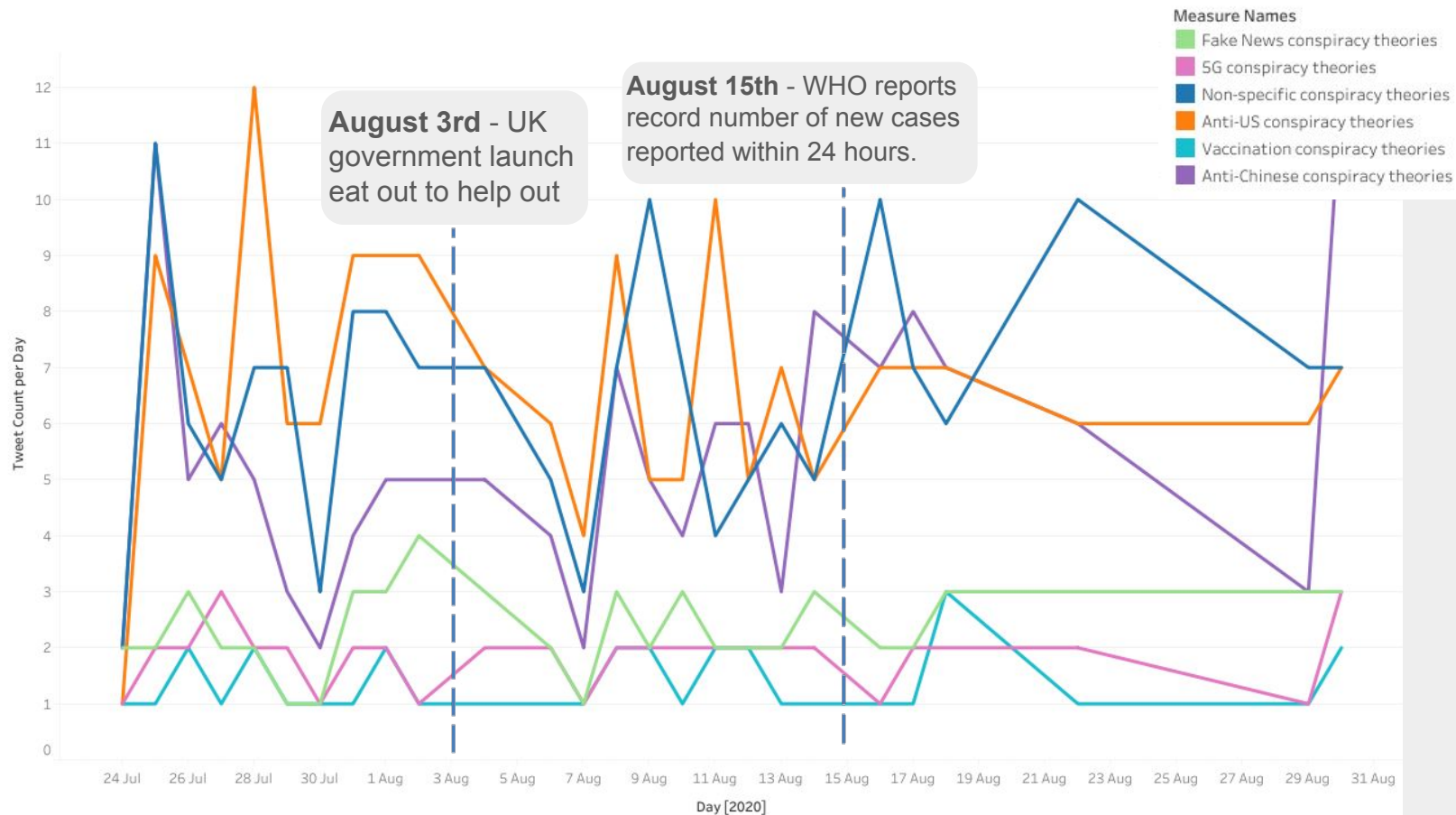
Fake News and 5G Conspiracies



Vaccination Conspiracy Theories



Non-Specific Conspiracy Theories



Conclusion

Future Improvements



Larger Data Set

- Different and Wider Time frame
- Wider variety of hashtags (both relating to covid & conspiracies)



Human error/Bias manually choosing hashtags relating to conspiracy theories



Sentiment Analysis of Tweets



Multiple Languages

- English renders Geographical findings superfluous?

Concluding Remarks

As of May 2020, there have been **628 M** Tweets about covid

Arson attacks on 5g towers, Capitol riots & Atlanta spa shootings

Such misbelief can erode institutional trust, dampen international relations, generate xenophobia, or decrease preventive health behaviors (Swire-Thompson & Lazer, 2020 - on conspiracy theories)

Our responsibility as data scientists to counter false information with clear, high-quality evidence

Tech/media giants duty of care to not neglect and ignore conspiracy theories



Thank you!



Any Questions?