

PA Vaccine Conversations and Misinformation on Twitter

Iuliia Alieva, Dawn Robertson, Dr. Kathleen M. Carley
Vaccine Hesitancy Project Update based on July 23 – July 29, 2021

The CMU centers for:

Informed DEMocracy And Social cyber-security

Computational Analysis of Social and Organizational Systems



Carnegie Mellon University



1/11/2022

1

1

PA Vaccine Conversation Project

- ❑ This report is an effort to summarize social media conversations around COVID-19 issues in Pennsylvania, with a focus on vaccination. It contains an analysis of the general topics related to COVID-19 vaccination. This includes discussions related to COVID-19 regulations, mandates, masks, pro-and anti-vaccination campaigns, science messages, misinformation, disinformation, conspiracy theories, and vaccine hesitancy messages.
- ❑ The material contained in this report is a summary of social media content and does not represent a judgment or characterization of any individual.

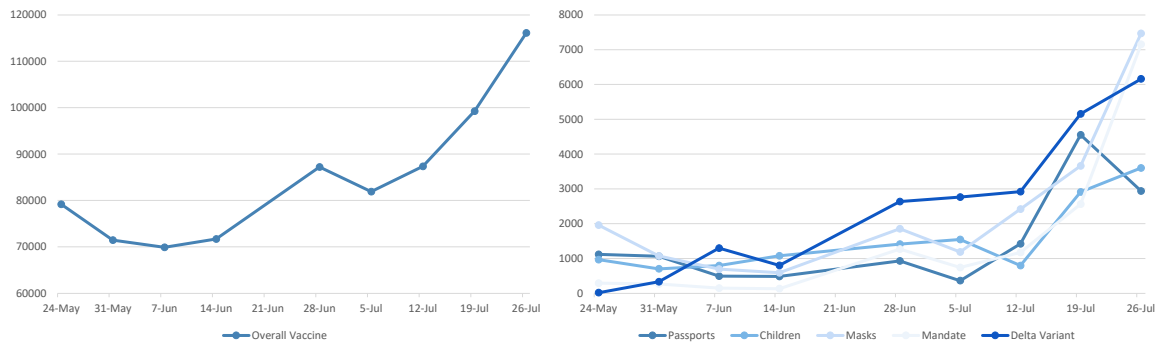
1/11/2022

2



2

Trends (tweets per week) July 23 – July 29



1/11/2022



3

High Level View by City July 23 – July 29

	Total PA		Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
Conversation	Tweets		Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	98916		60198	60.9%	20078	20.3%	935	0.9%	15027	15.2%	2678	2.7%
Vaccine Passports	1237		625	1.0%	286	1.4%	14	1.5%	290	1.9%	22	0.8%
Not FDA Approved	445		245	0.4%	105	0.5%	7	0.7%	71	0.5%	17	0.6%
Boosters	423		217	0.4%	95	0.5%	9	1.0%	77	0.5%	25	0.9%
Misinfo: Shedding	38		23	0.0%	7	0.0%			8	0.1%		
"Experimental"	413		205	0.3%	81	0.4%	6	0.6%	107	0.7%	14	0.5%
Children	1118		610	1.0%	252	1.3%	10	1.1%	228	1.5%	18	0.7%
Myocarditis	29		19	0.0%	3	0.0%			7	0.0%		
Heart	767		545	0.9%	118	0.6%	7	0.7%	78	0.5%	19	0.7%
Masks	9113		5598	9.3%	1532	7.6%	80	8.6%	1526	10.2%	377	14.1%
Infertility	19		9	0.0%	3	0.0%			6	0.0%	1	0.0%
Mandates	2598		1599	2.7%	423	2.1%	22	2.4%	486	3.2%	68	2.5%
Natural Immunity	467		290	0.5%	106	0.5%	2	0.2%	65	0.4%	4	0.1%
Efficacy	113		54	0.1%	18	0.1%			40	0.3%	1	0.0%
Spike Proteins	130		66	0.1%	40	0.2%			23	0.2%	1	0.0%
Delta Variant	2781		1659	2.8%	507	2.5%	24	2.6%	469	3.1%	122	4.6%
Race	1303		862	1.4%	263	1.3%	9	1.0%	134	0.9%	35	1.3%
Graphene Oxide	12		8	0.0%	2	0.0%			2	0.0%		
Door-To-Door												
"Strike Force"	133		66	0.1%	25	0.1%	1	0.1%	35	0.2%	6	0.2%

1/11/2022



4

- Tweets here counted only if there is a city location attached

High Level View by County July 23 – July 29

County	Allegheny	Beaver	Butler	Cambria	Fayette	Indiana	Somerset	Westmoreland
Overall Vaccine	20433	38	69	32	39	9	4	66
Vaccine Passports	287		2					2
Not FDA Approved	106		2			1		
Boosters	101		1					
Misinfo: Shedding	7							
"Experimental"	81	1	3		1			
Children	254		2					
Myocarditis	3							
Heart	123	1	1					
Masks	1596	6	10	9	3	1		8
Infertility	4							
Mandates	428			2	1	1	1	1
Natural Immunity	106		2					
Efficacy	18							
Spike Proteins	40							
Delta Variant	526	1	1	3				3
Race	264	2		1	1			1
Graphene Oxide	2							
Door-To-Door "Strike Force"	27							

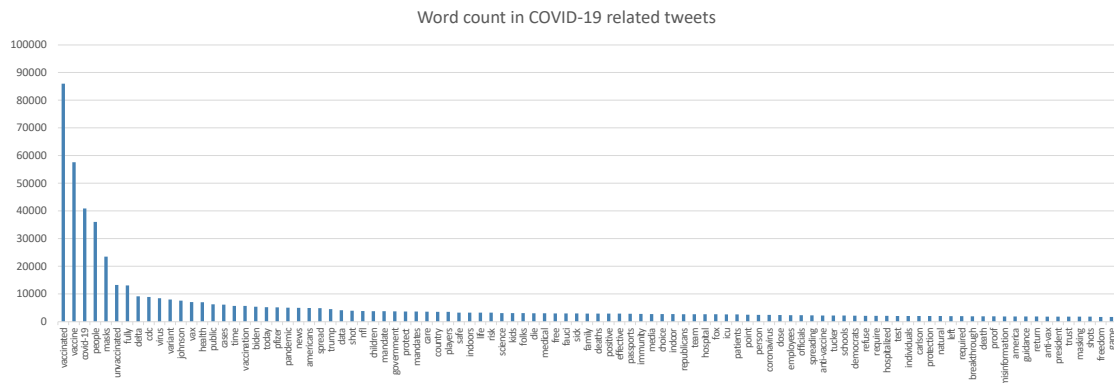
- Tweets counted here if there is a county location attached
- Race: pulled by one of the vaccine keywords plus at least one other term in ("Black", "African American", "of color", "Latin", "Hispanic", "brown", "eugenic")

1/11/2022



5

Top Words Used per Week July 23 – July 29



1/11/2022



6

Top Hashtags by City July 23 – July 29

❑ After removing hashtags that were part of our search criteria, the top 5 hashtags for each region related to COVID19/vaccines are as follows:

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
covid19 (1409) + covid (273)	Covid19 (365) + covid (55)	covid19 (335) + covid (77)	covid19 (748) + covid (108)	covid19 (27) + covid (6)	covid19 (658) + covid (82)	covid19 (84) + covid (18)
Deltavariant (462)	Deltavariant (155)	Deltavariant (102)	Deltavariant (295)	Imvaxxedareyou (15) + getvaccinated (13)	deltavariant (198)	Getvaccinated (31)
Imvaxxedareyou (382) + Getvaccinated (376) + Vaccine (206) + vaxupphilly (133) + Pfizer (115)	Vaccine (42) + getvaccinated (62)	getvaccinated (68) + getvaccinatednow (60)	Steelers (228) + nfl (108)	Covidvaccine (7) + vaccineswork (7)	getvaccinated (128) + getvaccinated now (82)	Deltavariant (28)
Nfl (103)	Children (50)	Imvaxxedareyou (51)	Getvaccinated (149) + getvaccinatednow (116)	Soulslosttocovid (4)	Imvaxxedareyou (70)	Nfl (24) + steelers (20)
Foxnews (95) + foxnewskills (83)	Veterans (42) + anthrax (41)	Pfizerleak (42)	Imvaxxedareyou (87)	Steelers (4)	Pfizer (52) + pfizerleak (39)	Pfizer (23) + pfizerleak (22)

1/11/2022



7

Top Hashtags by County July 23 – July 29

❑ We've checked hashtags in several counties such as Allegheny, Beaver, Bradford, Butler, Cambria, Crawford, Fayette, Indiana, Lackawanna, Luzerne, Lycoming, Monroe, Pike, Potter, Somerset, West Moreland, York. After removing hashtags that were part of our search criteria, the top 5 hashtags for each county related to COVID19/vaccines are as follows*:

Allegheny	Butler	Cambria	Fayette	Lackawanna	Luzerne	Monroe	West Moreland
covid19 (758) + covid (114)	covid19 (2)	Maskup (4)	Getvaccinated (2)	Covid19 (3)	Trumpvirus (6) + republicanvirus (1)	Covid (1)	Steelers (6) + nfl (4)
deltavariant (298)	Deltavariant (2)	Covid (1) + covidvaccine (1)	Antiva (1)	Getvaccinatednow (2)	Chinavirus (1)	Imvaxxedareyou (1)	Vaccine (2) + vaccineswork (1)
steelers (238) + nfl (113)	Steelers (2) + nfl (1)	Covidvariant (1) + deltavariant (1)	Covid (1)	Imvaxxedareyou (1)	covid19 (1)	Revokefoxfcclicense (1)	Covid19 (2)
Getvaccinated (153)	covidvaccination (1)	Getthevaccine (3)	Foxnewskills (1) + foxskillerlineup (1)	Nswcovid19 (1)	Delta8 (1)	Vaccinemandates (1)	Delta (1)
Vaccine (152) + vaccinated (89)	fauci (1)	Republicansvirus (1) + trumpvirus (1)	imvaxxedareyou (1)	Patienteducation (1)	Nfl (1) + nflrumors (1)		Foxnewskills (1)

1/11/2022

* If you do not see a county in the table, that means we couldn't find hashtags related to COVID19 in this county.



8

Top URLs by City July 23 – July 29

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
https://mybfr.com/TbthW4n Sean Penn Won't Work Unless Everyone on His New Show Is Vaccinated (324)	https://news.yahoo.com/doctors-alarmed-as-fda-floats-emergency-use-of-covid-vaccine-bypassing-trials-133153624.html Doctors alarmed as FDA floats 'emergency use' of COVID-19 vaccine, bypassing trials (60)	https://childrenshealthdefense.org/defender/dr-robert-malone-tucker-carson-mrna-vaccine-technology-risks/ Creator of mRNA Vaccine Technology Tells Tucker Carlson: 'Government Not Being Transparent' About Vaccine Risks (50)	https://www.foxnews.com/media/politifact-biden-harris-covid-vaccine Politifact declares claims Biden, Harris distrusted COVID vaccine under Trump 'false' despite past rhetoric (164)	https://www.espn.com/nfl/story/_/id/31869652/rick-dennison-minnesota-vikings-assistant-refusing-covid-19-vaccine-sources-say Rick Dennison out as Minnesota Vikings assistant after refusing COVID-19 vaccine, sources say (5)	https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (89)	https://www.al.com/news/2021/07/27/im-sorry-but-its-too-late-alabama-doctor-on-treating-unvaccinated-dying-covid-patients.html 'I'm sorry, but it's too late': Alabama doctor on treating unvaccinated, dying COVID patients (18)
https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (282)	https://www.nytimes.com/2021/07/27/health/cdc-masks-indoors-delta-variant.html?referringSource=articleShare Here's what we know about the C.D.C.'s new mask recommendations for vaccinated people. (60)	http://vaccines.gov (45)	https://www.al.com/news/2021/07/27/im-sorry-but-its-too-late-alabama-doctor-on-treating-unvaccinated-dying-covid-patients.html 'I'm sorry, but it's too late': Alabama doctor on treating unvaccinated, dying COVID patients (137)	http://vaccines.gov (4)	https://www.arkansasonline.com/news/2021/07/25/the-reasoning-behind-getting-vaccinated/ OPINION SARAH HUCKABEE SANDERS: The reasoning behind getting vaccinated (67)	https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (13)
https://cnn.it/3f1tlaE Pfizer data suggest third dose of Covid-19 vaccine 'strongly' boosts protection against Delta variant (216)	https://www.kxan.com/news/texas/6th-fully-vaccinated-texas-democrat-lawmaker-tests-positive-for-covid-19-amp-6th-fully-vaccinated-texas-democrat-lawmaker-tests-positive-for-covid-19-42/	https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (43)	https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (132)	https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (4)	http://vaccines.gov (60)	https://www.arkansasonline.com/news/2021/07/25/the-reasoning-behind-getting-vaccinated/ OPINION SARAH HUCKABEE SANDERS: The reasoning behind getting vaccinated (13)
https://trib.al/80wQleC Philly officials say even fully vaccinated people should again wear masks inside public spaces (204)	https://www.neurology.com/article/s/anthrax-and-gulf-war-illness-gwi-evidence-for-the-presence-of-harmful-anthrax-antigen-pa63-in-the-serum-of-veterans-with-gwi.html Anthrax and Gulf War Illness (GWI): Evidence for the Presence of Harmful Anthrax Antigen PA63 in the Serum of Veterans with GWI (41)	https://www.al.com/news/2021/07/27/im-sorry-but-its-too-late-alabama-doctor-on-treating-unvaccinated-dying-covid-patients.html 'I'm sorry, but it's too late': Alabama doctor on treating unvaccinated, dying COVID patients (39)	https://cnn.it/3f1tlaE Pfizer data suggest third dose of Covid-19 vaccine 'strongly' boosts protection against Delta variant (106)	https://twitter.com/lam_jerryhughes/status/1418373908575793155 some ppl have an underlying health conditions, so they are at risk if an outbreak happens. 🤔 Wait but Apple is just 1 company. Not all the tech companies in the world... (4)	https://www.al.com/news/2021/07/27/im-sorry-but-its-too-late-alabama-doctor-on-treating-unvaccinated-dying-covid-patients.html 'I'm sorry, but it's too late': Alabama doctor on treating unvaccinated, dying COVID patients (60)	http://vaccines.gov (12)
https://www.arkansasonline.com/news/2021/07/25/the-reasoning-behind-getting-vaccinated/ OPINION SARAH HUCKABEE SANDERS: The reasoning behind getting vaccinated (171)	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1447151/ The Anthrax Vaccine Program: An Analysis of the CDC's Recommendations for Vaccine Use (41)	https://www.arkansasonline.com/news/2021/07/25/the-reasoning-behind-getting-vaccinated/ OPINION SARAH HUCKABEE SANDERS: The reasoning behind getting vaccinated (36)	https://www.espn.com/nfl/story/_/id/31869652/rick-dennison-minnesota-vikings-assistant-refusing-covid-19-vaccine-sources-say Rick Dennison out as Minnesota Vikings assistant after refusing COVID-19 vaccine, sources say (90)	https://www.arkansasonline.com/news/2021/07/25/the-reasoning-behind-getting-vaccinated/ OPINION SARAH HUCKABEE SANDERS: The reasoning behind getting vaccinated (4)	https://www.espn.com/nfl/story/_/id/31869652/rick-dennison-minnesota-vikings-assistant-refusing-covid-19-vaccine-sources-say Rick Dennison out as Minnesota Vikings assistant after refusing COVID-19 vaccine, sources say (57)	https://bit.ly/3wXx8Mu Philly urges indoor masking amid rise in COVID cases, child hospitalizations

9

Top URLs by County July 23 – July 29

Allegheny	Butler	Cambria	Fayette	Lackawanna	Luzerne
https://www.foxnews.com/media/politifact-biden-harris-covid-vaccine Politifact declares claims Biden, Harris 'breakthrough' case? (164)	http://apne.ws/nIUkV4k What is a COVID-19 vaccine 'breakthrough' case? (1)	https://cbsloc.al/3x5VcwJ CDC Recommends Masks For Fully Vaccinated People In Certain Areas, Reversing Earlier Decision (1)	https://www.arkansasonline.com/news/2021/07/25/the-reasoning-behind-getting-vaccinated/ OPINION SARAH HUCKABEE SANDERS: The reasoning behind getting vaccinated (3)	https://nbcnews.to/3x7u6fs Veterans Affairs becomes first federal agency to require some staff be vaccinated against Covid (2)	https://twitter.com/customcore7/status/1418681693578272769 99% of Covid-19 deaths in the U.S. are in the unvaccinated. (2)
https://www.al.com/news/2021/07/27/im-sorry-but-its-too-late-alabama-doctor-on-treating-unvaccinated-dying-covid-patients.html 'I'm sorry, but it's too late': Alabama doctor on treating unvaccinated, dying COVID patients (140)	http://dlvr.it/54PKTf Olympic swimmer Michael Andrew of Encinitas defends decision to remain unvaccinated (1)	https://nbcnews.to/3i29NoK CDC recommends the vaccinated wear masks in areas with low vaccination rates (1)	https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (2)	https://nyti.ms/3ykI2iZ V.A. Issues Vaccine Mandate for Health Care Workers, a First for a Federal Agency (2)	https://www.espn.com/nfl/story/_/id/31869652/rick-dennison-minnesota-vikings-assistant-refusing-covid-19-vaccine-sources-say Rick Dennison out as Minnesota Vikings assistant after refusing COVID-19 vaccine, sources say (2)
https://rol.st/3tiUjGc Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required (132)	http://www.cdc.gov/coronavirus (1)	https://www.businessinsider.com/mother-man-28-died-covid-19-regrets-not-getting-vaccine-2021-7 A woman in Alabama whose 28-year-old son died of COVID-19 regrets not getting vaccinated and said his last words were 'this is not a hoax, this is real' (1)	http://www.nickadamsusa.com/news/foofighters-cancel-vaccinated-only-concert-after-band-member-tests-positive-for-covid FOO FIGHTERS CANCEL 'VACCINATED ONLY' CONCERT AFTER BAND MEMBER TESTS POSITIVE FOR COVID (1)	http://dlvr.it/54FmPw Doctor: Patients 'beg me for the vaccine' before being intubated (1)	https://www.foxnews.com/media/mcnenany-encourages-people-to-get-covid-vaccine-variant McEnany encourages people to get COVID vaccine: It reduces your risk of transmitting the virus (2)
https://cnn.it/3f1tlaE Pfizer data suggest third dose of Covid-19 vaccine 'strongly' boosts protection against Delta variant (108)	http://www.vaccine.gov (1)	https://www.businessinsider.com/vaccine-regret-hospitalization-encouraging-americans-to-get-vaccinated-2021-7 Vaccine regret went mainstream this week. Fear of getting sick could finally be encouraging some Americans to get their shots (1)	https://fox17.com/news/local/24-fully-vaccinated-people-have-died-in-tennessee-health-department-says-breakthrough-case-virus-coronavirus 27 fully vaccinated people have died in Tennessee, health department says (1)	http://dlvr.it/54Mb1r Man who made fun of vaccination efforts on social media dies of Covid (1)	https://fox56.com/news/local/doctor-reacts-to-cdc-indoor-mask-reversal Doctor weighs in on CDC indoor mask reversal (1)
https://www.espn.com/nfl/story/_/id/31869652/rick-dennison-minnesota-vikings-assistant-refusing-covid-19-vaccine-sources-say Rick Dennison out as Minnesota Vikings assistant after refusing COVID-19 vaccine, sources say (91)	https://reut.rs/3BE0Edz Mixed AstraZeneca-Pfizer shot boosts COVID antibody level – study (1)	https://www.nytimes.com/2021/07/22/health/coronavirus-breakthrough-infections-delta.html Why Vaccinated People Are Getting 'Breakthrough' Infections (1)	https://nyti.ms/3iKPIHf The Most Influential Spreader of Coronavirus Misinformation Online (1)	https://rumble.com/vk5176-covid-vaccine-adverse-reactions-2021.html COVID Vaccine Adverse Reactions 2021 (1)	https://fox56.com/news/local/pa-council-of-churches-urges-unvaccinated-persons-to-get-the-covid-19-vaccine PA Council of Churches urges unvaccinated persons to get the COVID-19 vaccine (1)

Carnegie Mellon University

10

Top Anti-Vaccine Retweets in PA Tweets

* Just admitted another fully vaccinated patient to ICU.

3:11 PM · Jul 24, 2021 · Twitter for iPhone

2,630 Retweets 212 Quote Tweets 6,316 Likes

* Top retweet of the week: from an anti-vax "nurse"

Italy just mandated vaccine passports.

France just mandated vaccine passports.

The UK is about to mandate vaccine passports.

Australia is in lockdown again.

The EU is restricting the free movement of free people based on vaccination status.

The West is sliding into tyranny.

10:31 AM · Jul 23, 2021 · Twitter for iPad

1,252 Retweets 85 Quote Tweets 2,848 Likes

1/11/2022

Vaccinated people are still getting and spreading COVID, but unvaccinated people are the problem. LOL.

7:00 PM · Jul 26, 2021 · Twitter for iPhone

3,869 Retweets 150 Quote Tweets 19K Likes

Why aren't people with natural immunity treated the same way vaccinated people are if it's all just about ensuring people are immune? Why focus only on the jab as if it's the only road to immunity? Science shows natural immunity is amazing. Why are Democrats denying science?



11:15 AM · Jul 28, 2021 · Twitter for iPhone

1,011 Retweets 40 Quote Tweets 3,119 Likes



11

Top URL of the Week: Eric Clapton

<https://www.rollingstone.com/music/music-news/eric-clapton-not-play-vaccine-shows-1200257/>

Eric Clapton Will Not Play Shows Where Proof of Vaccine Is Required

Musician issued statement after U.K. Prime Minister Boris Johnson said vaccine passes would be required at clubs and venues

Mixed Response

Funnily enough, I will not attend shows where Eric Clapton is required.



Known racist Eric Clapton is canceling any shows in venues where proof of vaccination is required.

1/11/2022

Joe Pags Pagliarulo @JoeTalkShow

Good on Eric Clapton. There's a man who believes in freedom and liberty. Before you lefties say something dumb.. if you don't feel safe going to an Eric Clapton concert because there isn't proof everyone's been vaccinated -- DON'T GO! Pretty simple.

6:22 PM · Jul 21, 2021 · Twitter Web App

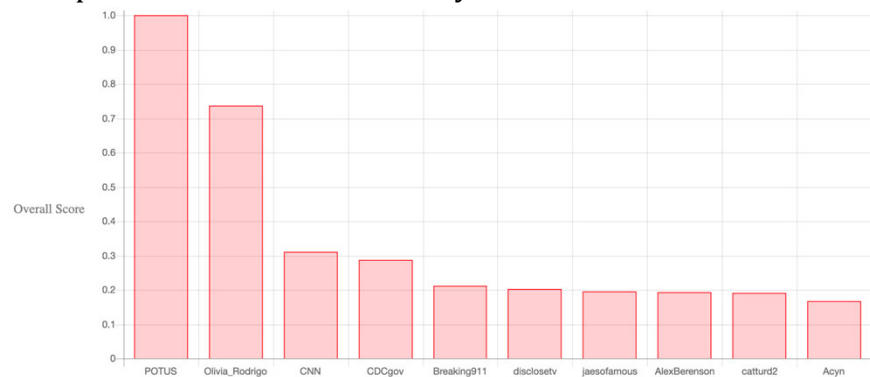
86 Retweets 3 Quote Tweets 525 Likes



12

Analysis of Tweeters - Super Spreaders

- ❑ Super Spreaders are users which generate content that is shared often, and hence spread information effectively.



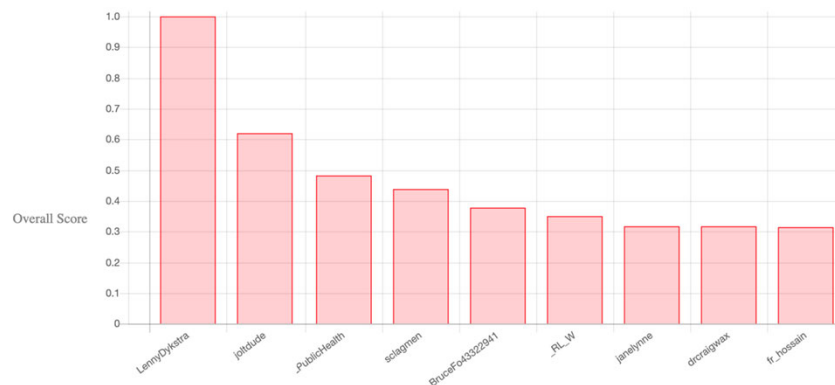
1/11/2022



13

Analysis of Tweeters - Super Friends

- ❑ Super Friends are users that exhibit frequent two-way communication, facilitating large or strong communication networks.



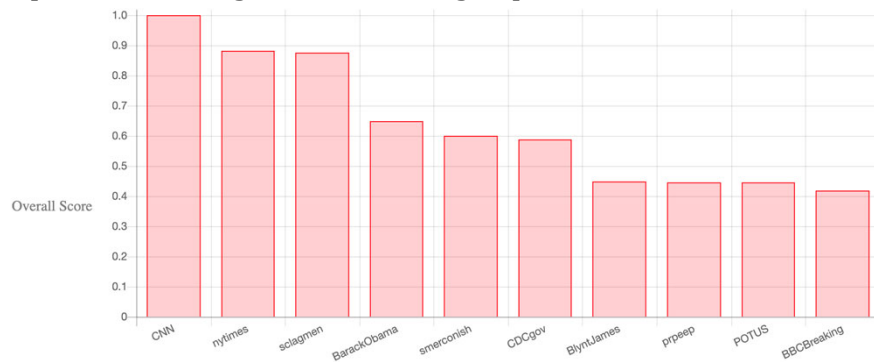
1/11/2022



14

Analysis of Tweeters - Other Influencers

- Other Influencers are users which have an active network presence, by tweeting often or mentioning users often, and operate in central parts of the conversation, such as by using important hashtags, or mentioning important users.

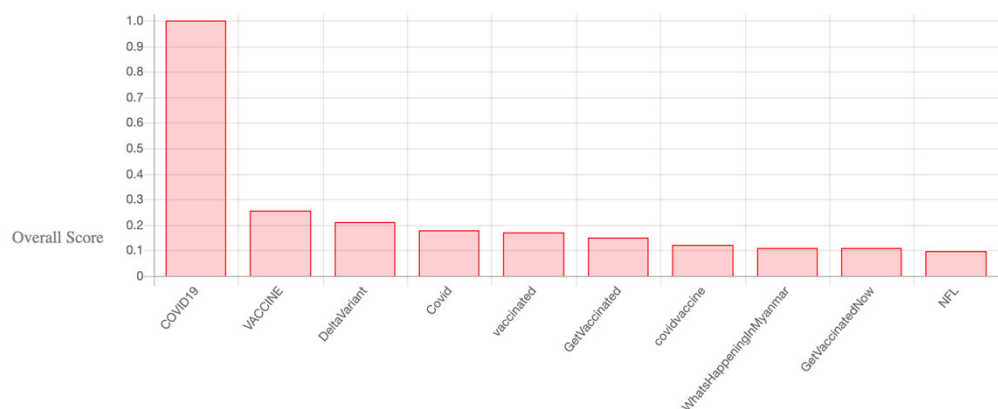


1/11/2022



15

PA COVID-19 hashtags, July 23 – July 29



1/11/2022



16

Top Influencers by City July 23 – July 29

❑ The top 5 influencers* for each region related to COVID19/vaccines are as follows:

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/Bethlehem	Other
CNN (agency)		gtconway3d	dodi_rains (antivax, promotes ivermectin)	AHNtoday (gov)	CuomoPrimeTime (reporter)	POTUS (gov)
FoxNews (agency)	sclagmen (antivax, conspiracy)	roadtoserfdm3 (antivax, conspiracy)	KDKA (agency)	caillie (provax)	SenBobCasey (gov)	CDCgov (gov)
thehill (agency)	LesBowen (reporter)	Imani_Barbarin	MarkMaddenX (sports)	ErieNewsNow (agency)	WolfGames2021 (antivax)	Breaking911 (agency)
smerconish (reporter)	AmandaMarcotte (reporter)	BrandonGowton	RMConservative (reporter, antivax)	GroveGroveluis1 (antivax)	Gdad1	disclosetv (agency)
PHLPublicHealth (gov)	Drcraigwax (antivax)	lacadri34	Stillgray (looks like troll, selling 'fauci lied' T-shirts)	midwit100	BruceFo43322941	Catturd2 (antivax)

*influencers are defined as accounts with tweets often spread by others (ordered by out-degree centrality)

1/11/2022



17

Top Influencers by County July 23 – July 29

❑ The top 5 influencers* for each region related to COVID19/vaccines are as follows:

Allegheny	Butler	Cambria	Fayette	Lackawanna	Luzerne	Monroe	West Moreland
dodi_rains (antivax, promotes ivermectin)	DWBerkley	onepatriotchick (antivax)	VincentMTiberi	Wbrewyou (agency)	KingsCollege_PA	NASCARonReddit (agency)	MeghanKDKA (reporter)
KDKA (agency)	JuliannePelusi (reporter)	realjasonstru	mommydog67	Henry_Escobar5	GeisingerNE_IM (gov)	sam__mat	Jmer211
MarkMaddenX (sports)	TaylorHaasePGH (reporter)	CrispinHavener (reporter)	jimnagle_gca	ResistingRN	lessnametag	RobertDandi	ThompsonFoto12
RMConservative (reporter, antivax)	iskywalkr	CSonafelt	dustinjohns	SharlaMcBride (reporter)	PaFootballNews (agency)	kelseykruck	gillie
Stillgray (looks like troll, selling 'fauci lied' T-shirts)	HollydellIce (celebrity)	LuvSavingMoney	Irishpatriot386 (antivax, veteran)	VegHistory	DaMENACE37OCR	gemluvr1960	NatePebbs

*influencers are defined as accounts with tweets often spread by others (ordered by out-degree centrality)

1/11/2022



18

Accounts Referenced by the Most Tweets

- ❑ This shows the tweeters that are most often referenced (e.g. mentioned) in PA tweets. Value is the number of tweets that reference the agent.

Agent Label	Value
CDCgov	1,240
POTUS	948
FoxNews	906
CNN	881
NFL	734
TuckerCarlson	681
CBSNews	520
catturd2	507
GovernorTomWolf	488
DeAndreHopkins	467

1/11/2022



19

Trending tweets, July 23 – July 29

- ❑ Top 10 tweets that are the most forwarded, either by retweet, reply, or quote (these counts are added together).



20

Trending tweets



21

Trending tweets



22

Trending tweets



1/11/2022

23

General Trends and Suggestions

- ❑ The prevalence of #Pfizer and #PfizerLeak hashtags illustrates a disinformation campaign about Pfizer vaccine that the health workers could address in communication with their patients ("Somebody leaked Pfizer's manufacturing and supply agreement."; "As I've been saying, you are the experiment."; "Pfizer takes no responsibility for any harm caused as a result of usage by the purchaser");
- ❑ There are many COVID-19 mentions related to sports, football, NFL, Olympics that could be an excellent time to promote pro-vaccination messages via athletes and sports influencers;
- ❑ COVID-19 discourse is kept expansive in connection to the military, veterans, and the army. Mainly, there are comparisons with anthrax and other vaccines that have been previously required to get at the army;
- ❑ As it was previously noted, this pandemic and vaccination campaign has become a predominantly partisan issue. This week, we can see specific changes in framing the pandemic among conservatives, such as politicians framing the vaccination as Donald Trump's initiative ("Trump's vaccine"). Changes in the framing of the pandemic may help to improve health communication for conservative voters (vaccination can be framed as a patriotic action as well as restoration of freedoms);
- ❑ There is a particular interest in why breakthrough cases take place. In addition, there is a concern about why vaccinated people should still wear masks and how they may spread the virus. Health officials could explain those issues for the general population to close the population knowledge gaps before new conspiracy theories emerge.

1/11/2022



24

For More Information

- ❑ Director Kathleen M. Carley - kathleen.carley@cs.cmu.edu
 - ❑ <http://www.casos.cs.cmu.edu/bios/carley/carley.html>
- ❑ IDeaS website - <https://www.cmu.edu/ideas-social-cybersecurity/>
- ❑ CASOS website - <http://www.casos.cs.cmu.edu/>
- ❑ Social Cybersecurity Working Group - <http://social-cybersecurity.org>
- ❑ Facebook: [@IDeasCMU](#)
- ❑ Twitter: [@IDeaSCMU](#)
- ❑ YouTube: [IDeaS Center](#)
- ❑ Ask to be on our Email-Distro Lists

1/11/2022

Copyright © 2021 Kathleen M. Carley

