

# PA Vaccine Conversations on Twitter

Dr. Iuliia Alieva, Dawn Robertson, Dr. Kathleen M. Carley  
Vaccine Hesitancy Project Update based on on July 15, 2022 – July 21, 2022

The CMU centers for:

Informed DEMocracy And Social cyber-security

Computational Analysis of Social and Organizational Systems



Carnegie Mellon University



7/27/2022

1

## PA Vaccine Conversations 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.
- ❑ Anti-Vax messaging includes vaccine hesitancy messages, opinions, questions, policy health and science related information, misinformation, disinformation, and conspiracy theories.

7/27/2022



2

## Report Overview July 15– July 21

- ❑ Natural immunity (10x previous week); Children, Vaccine side effects: Thrombosis, Myocarditis, COVID-19 Mandates, Masks, Boosters are trending this week;
- ❑ Trending stories: [news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/535d9a26e3f0df64804c389ee0f6b813](https://news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/535d9a26e3f0df64804c389ee0f6b813) New Zealand imposes new Covid measures as cases soar; [washingtonpost.com/health/2022/07/15/monkeypox-response-vaccine-treatment-obstacles-adams](https://washingtonpost.com/health/2022/07/15/monkeypox-response-vaccine-treatment-obstacles-adams) Doctors treating monkeypox complain of 'daunting' paperwork, obstacles; [pubmed.ncbi.nlm.nih.gov/35659687](https://pubmed.ncbi.nlm.nih.gov/35659687) Adverse effects of COVID-19 vaccines and measures to prevent them; [mediamatters.org/qanon-conspiracy-theory/pittsburgh-police-officer-goes-qanon-show-attack-vaccine-mandate-and-ties](https://mediamatters.org/qanon-conspiracy-theory/pittsburgh-police-officer-goes-qanon-show-attack-vaccine-mandate-and-ties) Pittsburgh police officer goes on QAnon show to attack vaccine mandate and ties it to "saving the children"
- ❑ Popular anti-vax tweets: "natural immunity ... offered stronger and more sustained protection from [COVID] infection than vaccination." <https://t.co/ZasY96pg3i>; Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? <https://t.co/gIZEPW733R>; "immune function among vaccinated individuals 8mo. after the administration of two doses of COVID vaccine was lower than that among the unvaccinated". According to European Med Agency, "frequent booster shots could adversely affect the immune response" <https://t.co/NoVN4PdSi3>; NZ vaccinated their entire adult population by the end of February (83% overall). Yet, somehow they have the highest covid case rate on Earth "despite" an indoor mask mandate. Now set to tighten restrictions once again. <https://t.co/TdNPR2KtWB>; "I'm not going to let Canada tell me what I do and don't put in my body." Philadelphia Phillies catcher J.T. Realmuto is forfeiting over \$250,000 for not complying with Canada's vaccine mandate and travelling to Canada to play the Toronto Blue Jays. <https://t.co/bjp9vuhn9r>

7/27/2022



## Countering disinformation July 15– July 21

- ❑ This week, we see many vaccine hesitancy and disinformation stories;
- ❑ Among fact-checking stories, there is a debunking piece about immune system suppression after COVID-19 vaccination: <https://leadstories.com/hoax-alert/2022/07/fact-check-covid-vaccines-do-not-suppress-immune-system.html> Fact Check: COVID Vaccines Do NOT Suppress Immune System
- ❑ FactCheck.org's article about vaccination for children: <https://www.factcheck.org/2022/07/scicheck-posts-misleadingly-omit-critical-clinical-trial-data-supporting-covid-19-vaccines-for-littlest-kids/> Posts Misleadingly Omit Critical Data Supporting COVID-19 Vaccines for Youngest Kids
- ❑ More information about COVID-19 reinfections from PolitiFact: <https://www.politifact.com/article/2022/jul/19/reinfections-are-going-continue-occur-covid-19-imm/>

7/27/2022



## Popular anti-vax stories sorted by shares

Anti-vax, disinformation, and vaccine hesitancy stories sorted by the number or shares:

- ❑ [fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds](https://www.fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds) Natural Immunity Offered More Protection Against Omicron Than 3 Vaccine Doses, New England Journal of Medicine Study Finds;
- ❑ [childrenshealthdefense.org/defender/canada-covid-vaccine-phillies-catcher-it-realmuto](https://childrenshealthdefense.org/defender/canada-covid-vaccine-phillies-catcher-it-realmuto) 'Not Going to Let Canada Tell Me What I Do and Don't Put in My Body,' Phillies Catcher Says on Missing Blue Jays Series;
- ❑ [thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh](https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh) Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh?;
- ❑ [twitter.com/viralnewsnyc/status/1548805251192524800](https://twitter.com/viralnewsnyc/status/1548805251192524800) 100s line up at a pop-up Monkey Pox Vaccination site in Brooklyn NY;
- ❑ [commonsense.news/p/us-public-health-agencies-arent-following](https://commonsense.news/p/us-public-health-agencies-arent-following) U.S. Public Health Agencies Aren't 'Following the Science,' Officials Say;
- ❑ [mol.im/a/11015235](https://mol.im/a/11015235) Health experts are quitting the NIH and CDC in droves because they're embarrassed by 'bad science' - including vaccinating children under 5 to 'make their advice palatable to the White House,' doctors claim;
- ❑ [rumble.com/v155h7f-dr-geert-vanden-bossche-ade-who-pandemic-treaty-and-expected-excess-deaths.html](https://rumble.com/v155h7f-dr-geert-vanden-bossche-ade-who-pandemic-treaty-and-expected-excess-deaths.html) Dr. Geert Vanden Bossche - ADE, Evolution of the Virus & Expected Excess Deaths

7/27/2022



## Anti-vax stories sorted by the projected impact

- ❑ [fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds](https://www.fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds) Natural Immunity Offered More Protection Against Omicron Than 3 Vaccine Doses, New England Journal of Medicine Study Finds;
- ❑ [thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh](https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh) Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh?;
- ❑ [rumble.com/v155h7f-dr-geert-vanden-bossche-ade-who-pandemic-treaty-and-expected-excess-deaths.html](https://rumble.com/v155h7f-dr-geert-vanden-bossche-ade-who-pandemic-treaty-and-expected-excess-deaths.html) Dr. Geert Vanden Bossche - ADE, Evolution of the Virus & Expected Excess Deaths;
- ❑ [commonsense.news/p/us-public-health-agencies-arent-following](https://commonsense.news/p/us-public-health-agencies-arent-following) U.S. Public Health Agencies Aren't 'Following the Science,' Officials Say;
- ❑ [mol.im/a/11015235](https://mol.im/a/11015235) Health experts are quitting the NIH and CDC in droves because they're embarrassed by 'bad science' - including vaccinating children under 5 to 'make their advice palatable to the White House,' doctors claim;
- ❑ [childrenshealthdefense.org/defender/canada-covid-vaccine-phillies-catcher-it-realmuto](https://childrenshealthdefense.org/defender/canada-covid-vaccine-phillies-catcher-it-realmuto) 'Not Going to Let Canada Tell Me What I Do and Don't Put in My Body,' Phillies Catcher Says on Missing Blue Jays Series;
- ❑ [twitter.com/viralnewsnyc/status/1548805251192524800](https://twitter.com/viralnewsnyc/status/1548805251192524800) 100s line up at a pop-up Monkey Pox Vaccination site in Brooklyn NY

7/27/2022



## Measures for countering health disinformation

- ❑ Anti-vaccine narratives are still pervasive on social media, while there are not that many counter-narratives about the positive effects of vaccines;
- ❑ There is a need for a reframing of social media as a medically and socially valuable resource and platform because of its high impact on society;
- ❑ Healthcare organizations need to implement social media strategies to create and expand conversations countering disinformation on social media;
- ❑ It would be helpful for health communicators to cooperate with local influencers who could spread pro-vaccination messages. Another strategy could be to motivate health practitioners to use social media as a channel for communication with the public;
- ❑ "Strategies focused on meaningfully and safely engaging HCPs on social media, promoting interconnectivity across the medical and public health communities on COVID-19 vaccine truths, and sustaining these messaging efforts across vaccine implementation stages will be our best hope of preventing any more missed doses and promoting "misinformation immunity" for all." (Hernandez et al. 2021. "The COVID-19 vaccine social media infodemic: healthcare providers' missed dose in addressing misinformation and vaccine hesitancy.")

7/27/2022



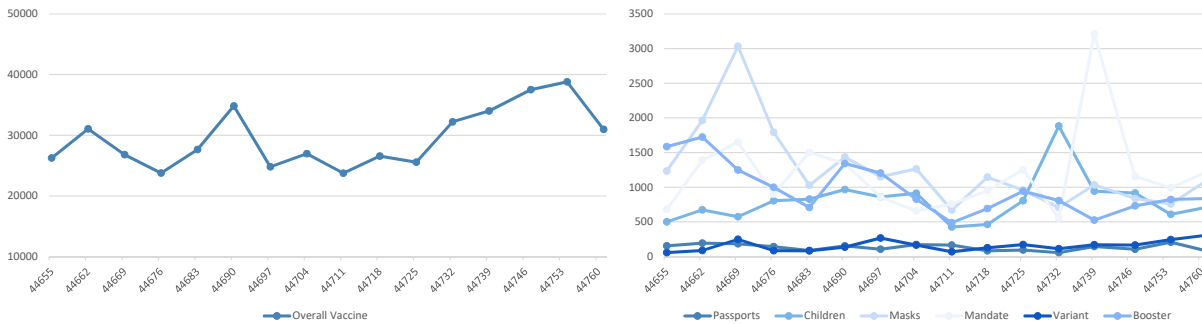
## Measures for countering health disinformation

- ❑ As a trusted source of information on vaccines, family physicians play a crucial role in driving vaccine acceptance;
- ❑ Sharing stories, building trust with patients, addressing pain associated with vaccination, presenting vaccination as the default approach early on, focusing on the benefits of protection, and being honest about side effects could also help to promote pro-vaccination attitudes (Shen & Dubey 2019. "Addressing vaccine hesitancy: Clinical guidance for primary care physicians working with parents");
- ❑ It is helpful to provide more information for the patients about the possible disinformation strategies they may deal with, such as manipulating emotions to promote misinformation and conspiracy theories to sow confusion and create division. Inoculation strategy may help to prepare the community by presenting counterarguments to misinformation and raising awareness of negative emotional appeals spread by anti-vaccine campaigns;
- ❑ Framing vaccination as a concrete, actionable strategy to reduce COVID-19 risk may help to address negative emotions, increase self-efficacy and ensure the feelings of control over reducing COVID-19 risk.

7/27/2022



## Trends (tweets per week in PA) July 15– July 21



7/27/2022



## High Level View by City July 15 – July 21

	Total PA	Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
Conversation	Tweets	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	26617	14014	52.7%	8818	33.1%	188	0.7%	2424	9.1%	1173	4.4%
Vaccine Passports	81	44	0.3%	14	0.2%	2	1.1%	20	0.8%	1	0.1%
FDA Approval	33	14	0.1%	9	0.1%			5	0.2%	5	0.4%
Boosters	500	253	1.8%	116	1.3%	7	3.7%	92	3.8%	32	2.7%
Employees	33	20	0.1%	8	0.1%			1	0.0%	4	0.3%
"Experimental"	61	39	0.3%	16	0.2%			6	0.2%		
Children	571	295	2.1%	177	2.0%	4	2.1%	76	3.1%	19	1.6%
Myocarditis	87	47	0.3%	21	0.2%	1	0.5%	13	0.5%	5	0.4%
Heart	131	56	0.4%	62	0.7%			12	0.5%	1	0.1%
Masks	1075	571	4.1%	252	2.9%	12	6.4%	112	4.6%	128	10.9%
Thrombosis/VITT	20	15	0.1%	4	0.0%			1	0.0%		
Mandates	1128	746	5.3%	208	2.4%	9	4.8%	133	5.5%	32	2.7%
Natural Immunity	1419	1367	9.8%	19	0.2%	1	0.5%	30	1.2%	2	0.2%
Efficacy	173	83	0.6%	35	0.4%	1	0.5%	43	1.8%	11	0.9%
Omicron	130	68	0.5%	32	0.4%			22	0.9%	8	0.7%
Delta Variant	40	18	0.1%	7	0.1%	1	0.5%	1	0.0%	13	1.1%
Race	324	179	1.3%	98	1.1%	5	2.7%	28	1.2%	14	1.2%
Ivermectin	13	8	0.1%	5	0.1%						
Military	128	46	0.3%	54	0.6%	1	0.5%	25	1.0%	2	0.2%
Breakthrough	15	8	0.1%	1	0.0%			6	0.2%		

7/27/2022

Conversation topics trending this week over last:

- Natural immunity (10x previous week)
- Children
- Vaccine side effects
  - Thrombosis
  - Myocarditis



## High Level View by County July 15 – July 21

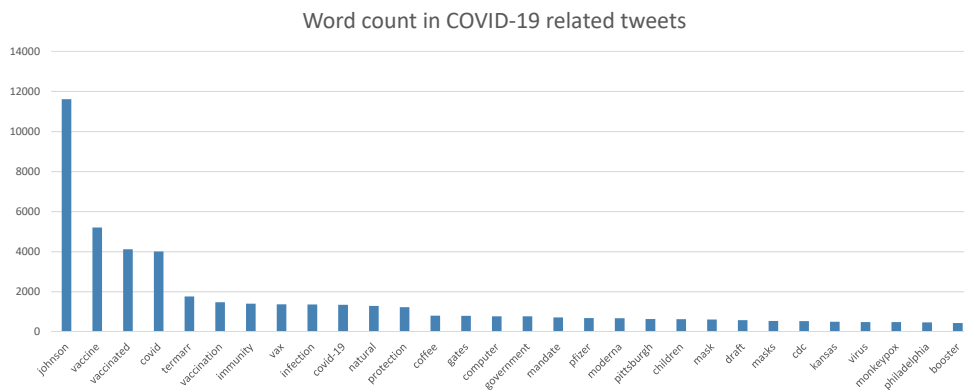
County	Allegheny	Beaver	Butler	Cambria	Fayette	Indiana	Somerset	Westmoreland
Overall Vaccine	9042	67	22	42	14	6	2	39
Vaccine Passports	14					1		
FDA	9							
Boosters	118	1	2			1		
Employees	8							
"Experimental"	16							
Children	179			1				
Myocarditis	21				1			1
Heart	62							
Masks	270		4					6
Thrombosis/VITT	4							
Mandates	214					1		
Natural Immunity	20		1					
Efficacy	36		1	1				
Omicron	33							
Delta Variant	11							
Race	103							1
Ivermectin	5							
Military	55							
Breakthrough	1							

- Race: pulled by one of the vaccine keywords plus at least one other term in ("Black", "African American", "of color", "Latin", "Hispanic", "brown", "eugenic")

7/27/2022



## Top Words Used per Week July 15– July 21



7/27/2022



## Top Hashtags by County July 15– July 21

- ❑ We've checked hashtags in several counties such as Allegheny, Beaver, Butler, Cambria, Fayette, Indiana, Somerset, and West Moreland. 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	Beaver + Butler	Indiana	West Moreland
covid19 (126)	covid19 (1)	novaccinemandates (1)	covid19 (1)
vaccine (81)	covidisnotover (1)	novaccinepassports (1)	covidisnotover (1)
covidisnotover (78)	demvoice1 (1)		monkeypox (1)
tweetiatrician (67)			tweetiatrician (1)
monkeypox (56)			vaccine (1)

7/27/2022



## Top Hashtags by City July 15– July 21

- ❑ 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 (149)	covid19 (13)	covidisnotover (12)	covid19 (126)	covid19 (3)	vaccine (28)	covid19 (10)
vaccine (89)	mandatemasks (5)	vaccine (12)	vaccine (81)	demvoice1 (3)	covidisnotover (21)	vaccine (6)
covidisnotover (87)	pfiger (5)	tweetiatrician (10)	covidisnotover (78)	vaccine (3)	stoptheshots (17)	covidisnotover (5)
monkeypox (82)	stoptheshots (5)	covaxin4kids (5)	tweetiatrician (67)	monkeypox (2)	tweetiatrician (17)	monkeypox (4)
stoptheshots (45)	covidisnotover (4)	maskup (5)	monkeypox (56)	tweetiatrician (1)	monkeypox (14)	maskup (2)

7/27/2022



# Top URLs by County July 15– July 21

Allegheny	Butler + Beaver	Indiana	West Moreland
<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (62)	<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (1)	<a href="https://rumble.com/v155h7f-dr-geert-vanden-bossche-ade-who-pandemic-treaty-and-expected-excess-deaths.html">rumble.com/v155h7f-dr-geert-vanden-bossche-ade-who-pandemic-treaty-and-expected-excess-deaths.html</a> Dr. Geert Vanden Bossche - ADE, Evolution of the Virus & Expected Excess Deaths (1)	<a href="https://nytimes.com/2022/05/26/health/monkeypox-vaccine-immunity.html">nytimes.com/2022/05/26/health/monkeypox-vaccine-immunity.html</a> Who Is Protected Against Monkeypox? (4)
<a href="https://twitter.com/viralnewsny/status/1548805251192524800">twitter.com/viralnewsny/status/1548805251192524800</a> 100s line up at a pop-up Monkey Pox Vaccination site in Brooklyn NY (61)			<a href="https://fox19.com/2022/07/14/cincinnati-federal-judge-temporarily-stops-air-force-globally-discharging-religious-vaccine-refusers">fox19.com/2022/07/14/cincinnati-federal-judge-temporarily-stops-air-force-globally-discharging-religious-vaccine-refusers</a> Cincinnati federal judge temporarily stops Air Force globally from discharging religious vaccine refusers (1)
<a href="https://mediamatters.org/qanon-conspiracy-theory/pittsburgh-police-officer-goes-qanon-show-attack-vaccine-mandate-and-ties">mediamatters.org/qanon-conspiracy-theory/pittsburgh-police-officer-goes-qanon-show-attack-vaccine-mandate-and-ties</a> Pittsburgh police officer goes on QAnon show to attack vaccine mandate and ties it to "saving the children" (53)			
<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (35)			
<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (29)			

7/27/2022



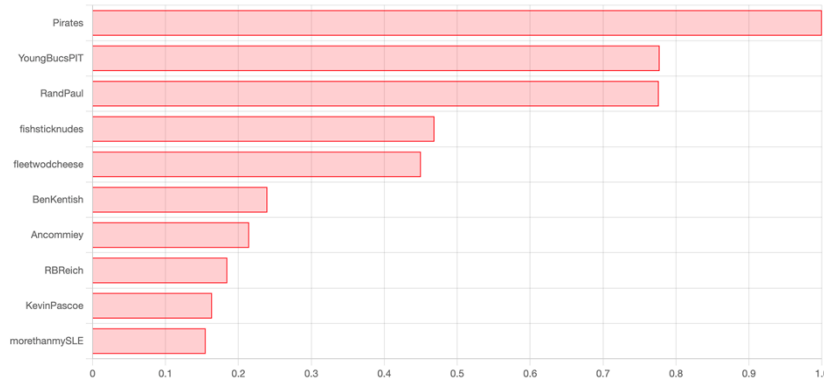
# Top URLs by City July 15– July 21

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
<a href="https://fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds">fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds</a> Natural Immunity Offered More Protection Against Omicron Than 3 Vaccine Doses, New England Journal of Medicine Study Finds (1097)	<a href="https://news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/53549a26c3f0df64804c389ee0fb813">news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/53549a26c3f0df64804c389ee0fb813</a> New Zealand imposes new Covid measures as cases soar (14)	<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (14)	<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (62)	<a href="https://molim/a/11015235">molim/a/11015235</a> Health experts are quitting the NIH and CDC in droves because they're embarrassed by 'bad science' - including vaccinating children under 5 to 'make their advice palatable to the White House,' doctors claim (3)	<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (36)	<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (7)
<a href="https://childrenshealthdefense.org/defender/canada-covid-vaccine-philip-catcher-journalist/">childrenshealthdefense.org/defender/canada-covid-vaccine-philip-catcher-journalist/</a> 'Not Going to Let Canada Tell Me What I Do and Don't Put in My Body,' Phillip Catcher Says on Missing Blue Jays Series (142)	<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (11)	<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (14)	<a href="https://twitter.com/viralnewsny/status/1548805251192524800">twitter.com/viralnewsny/status/1548805251192524800</a> 100s line up at a pop-up Monkey Pox Vaccination site in Brooklyn NY (61)	<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (2)	<a href="https://molim/a/11015235">molim/a/11015235</a> Health experts are quitting the NIH and CDC in droves because they're embarrassed by 'bad science' - including vaccinating children under 5 to 'make their advice palatable to the White House,' doctors claim (24)	<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (7)
<a href="https://news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/53549a26c3f0df64804c389ee0fb813">news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/53549a26c3f0df64804c389ee0fb813</a> New Zealand imposes new Covid measures as cases soar (100)	<a href="https://molim/a/11015235">molim/a/11015235</a> Health experts are quitting the NIH and CDC in droves because they're embarrassed by 'bad science' - including vaccinating children under 5 to 'make their advice palatable to the White House,' doctors claim (11)	<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (14)	<a href="https://mediamatters.org/qanon-conspiracy-theory/pittsburgh-police-officer-goes-qanon-show-attack-vaccine-mandate-and-ties">mediamatters.org/qanon-conspiracy-theory/pittsburgh-police-officer-goes-qanon-show-attack-vaccine-mandate-and-ties</a> Pittsburgh police officer goes on QAnon show to attack vaccine mandate and ties it to "saving the children" (53)	<a href="https://erie.com/story/news/healthcare/2022/07/20/monkeypox-vaccine-available-erie-county-department-of-health/6537373007">erie.com/story/news/healthcare/2022/07/20/monkeypox-vaccine-available-erie-county-department-of-health/6537373007</a> Monkeypox vaccine available at Erie County Department of Health (2)	<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (23)	<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (5)
<a href="https://washingtonpost.com/health/2022/07/15/monkeypox-response-vaccine-treatment-obstacles-adams/">washingtonpost.com/health/2022/07/15/monkeypox-response-vaccine-treatment-obstacles-adams/</a> Doctors treating monkeypox complain of 'daunting' paperwork, obstacles (91)	<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (8)	<a href="https://news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/53549a26c3f0df64804c389ee0fb813">news.com.au/world/coronavirus/health/new-zealand-to-add-further-covid-restrictions-as-cases-soar/news-story/53549a26c3f0df64804c389ee0fb813</a> New Zealand imposes new Covid measures as cases soar (8)	<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (35)	<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (2)	<a href="https://pubmed.ncbi.nlm.nih.gov/35659687">pubmed.ncbi.nlm.nih.gov/35659687</a> Adverse effects of COVID-19 vaccines and measures to prevent them (23)	<a href="https://evanhschool.com/virus/coronavirus-update">evanhschool.com/virus/coronavirus-update</a> Coronavirus Update (4)
<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (84)	<a href="https://childrenshealthdefense.org/defender/canada-covid-vaccine-philip-catcher-journalist/">childrenshealthdefense.org/defender/canada-covid-vaccine-philip-catcher-journalist/</a> 'Not Going to Let Canada Tell Me What I Do and Don't Put in My Body,' Phillip Catcher Says on Missing Blue Jays Series (6)	<a href="https://fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds">fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds</a> Natural Immunity Offered More Protection Against Omicron Than 3 Vaccine Doses, New England Journal of Medicine Study Finds (7)	<a href="https://commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say">commonsense.news/p/us-public-health-agencies-arent-following-the-science-officials-say</a> U.S. Public Health Agencies Aren't Following the Science, Officials Say (29)	<a href="https://thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh">thewatchtowers.org/haiti-did-not-vaccinate-its-citizens-the-current-vax-rate-is-1-4-yet-country-has-one-of-lowest-covid-death-rates-in-the-world-weird-huh</a> Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? (2)	<a href="https://fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds">fee.org/articles/natural-immunity-offered-more-protection-against-omicron-than-3-vaccine-doses-new-england-journal-of-medicine-study-finds</a> Natural Immunity Offered More Protection Against Omicron Than 3 Vaccine Doses, New England Journal of Medicine Study Finds (16)	<a href="https://molim/a/11015235">molim/a/11015235</a> Health experts are quitting the NIH and CDC in droves because they're embarrassed by 'bad science' - including vaccinating children under 5 to 'make their advice palatable to the White House,' doctors claim (4)



## Analysis of Tweeters - Super Spreaders

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

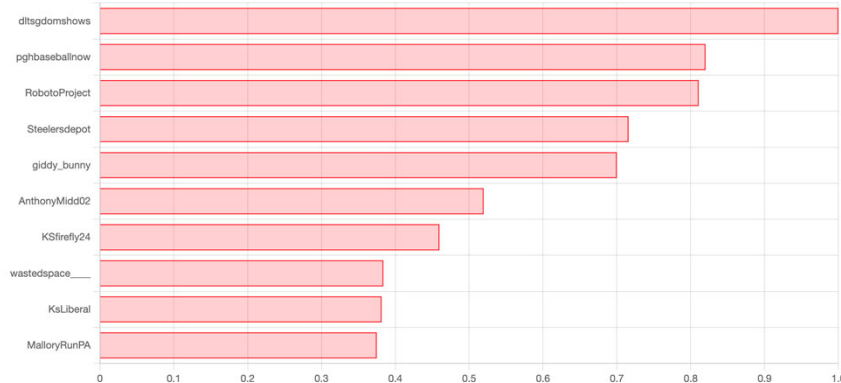


7/27/2022



## Analysis of Tweeters - Super Friends

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

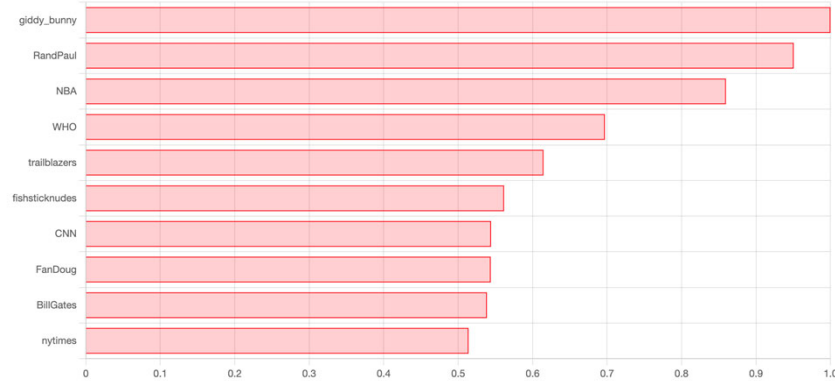


7/27/2022



## 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.



7/27/2022



## 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
RandPaul	1233
fishsticknudes	764
fleetwodcheese	694
Pirates	475
BenKentish	398
RBRreich	292
KevinPascoe	265
morethanmySLE	254
Ancommiey	253
Johninpompano	251
pfizer	247
NelsonforWI	189
RobertKennedyJr	188

7/27/2022



## Trending Tweets July 15– July 21

Tweets that are the most forwarded, either by retweet, reply, or quote:

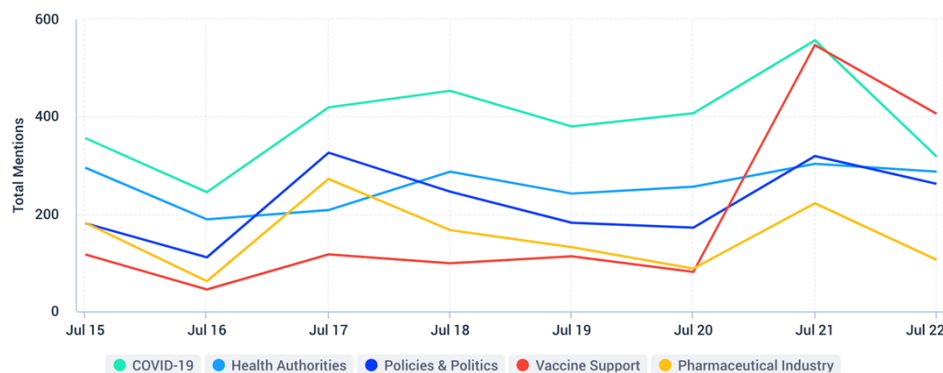
- ❑ “natural immunity . . . offered stronger and more sustained protection from [COVID] infection than vaccination.” <https://t.co/ZasY96pg3i>
- ❑ vaccinated people when bill gates spills coffee on his computer <https://t.co/unzCu97g3c>
- ❑ The federal government gave Moderna \$2.5 billion to develop a COVID-19 vaccine. Meanwhile, Moderna’s CEO just walked away from the company with a \$926 million golden parachute. This is what oligarchy looks like.
- ❑ Haiti Did Not Vaccinate Its Citizens, The Current Vax Rate is 1.4% — Yet Country Has One of Lowest COVID Death Rates in the World — Weird, Huh? <https://t.co/gIZEPW733R>
- ❑ #covid19 has hit my kid. We vaccinated, masked, ate outside and yet. I HATE the people who downplayed masks, and continue to push misinformation. The disappointment on his face as we cancel long-made plans is devastating. #CovidIsNotOver #tweetiatrician #parenting
- ❑ Phillies catcher J.T. Realmuto said he refuses to get vaccinated against COVID-19, even if it means missing Philadelphia’s two-game series against the Toronto Blue Jays this week. <https://t.co/LQ4CfpvOh9>
- ❑ “immune function among vaccinated individuals 8mo. after the administration of two doses of COVID vaccine was lower than that among the unvaccinated”. According to European Med Agency, “frequent booster shots could adversely affect the immune response” <https://t.co/NoYN4PdSi3>
- ❑ NZ vaccinated their entire adult population by the end of February (83% overall). Yet, somehow they have the highest covid case rate on Earth “despite” an indoor mask mandate. Now set to tighten restrictions once again. <https://t.co/TdNPR2KtWB>
- ❑ I tested positive for COVID-19 yesterday, and I am experiencing mild symptoms. Gratefully, I am fully vaccinated and boosted. I encourage each person in America to get vaccinated and continue to follow the guidelines to remain safe. <https://t.co/brHXGIWmfq>
- ❑ 100s line up at a pop-up Monkey Pox Vaccination site in Brooklyn NY #monkeypox #Brooklyn #vaccine <https://t.co/pn8nCfZuE>
- ❑ “I’m not going to let Canada tell me what I do and don’t put in my body.” Philadelphia Phillies catcher J.T. Realmuto is forfeiting over \$250,000 for not complying with Canada’s vaccine mandate and travelling to Canada to play the Toronto Blue Jays. <https://t.co/bjp9vuhn9r>

7/27/2022

21



## General PA Conversation July 15– July 21



Source: VCTR Project Dashboard

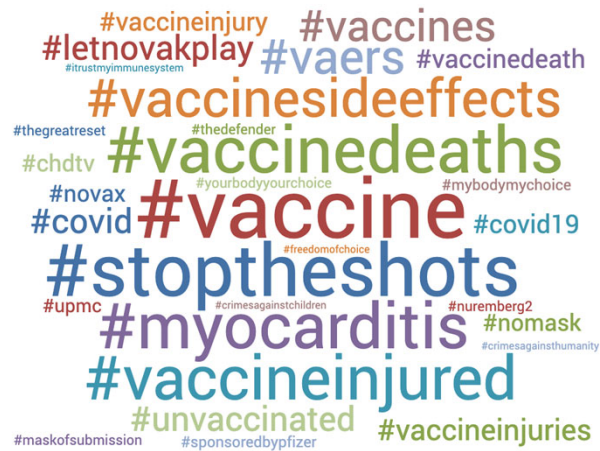
7/27/2022

22





## Negative Hashtag Cloud July 15– July 21

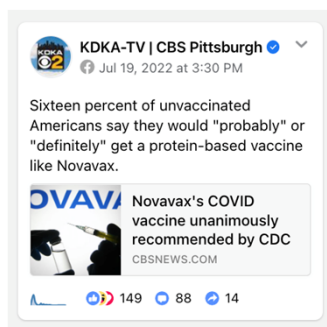


7/27/2022

Source: VCTR Project Dashboard



## Trending Posts on July 15– July 21

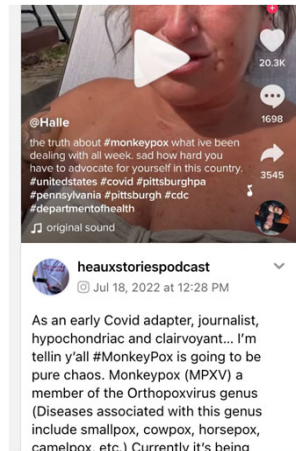


Source: CrowdTangle Dashboard

7/27/2022



## Trending Posts on Instagram July 15– July 21

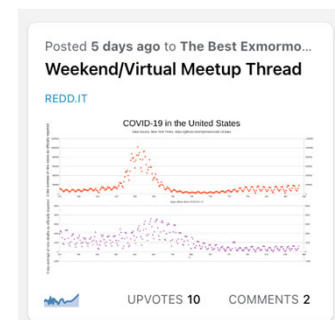
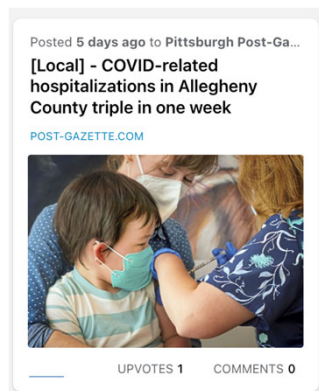
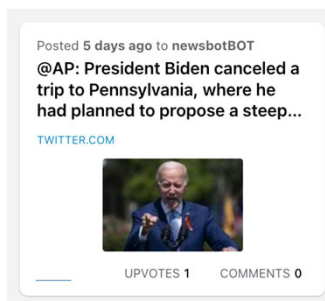


7/27/2022

Source: CrowdTangle Dashboard



## Trending Posts on Reddit July 15– July 21



7/27/2022

Source: CrowdTangle Dashboard



## For More Information

- ❑ Director Kathleen M. Carley - [kathleen.carley@cs.cmu.edu](mailto: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

7/27/2022

Copyright © 2021 Kathleen M. Carley



29