

PA Vaccine Conversations on Twitter

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Vaccine Hesitancy Project Update based on November 11, 2022 – November 17, 2022

The CMU centers for:

Informed DEMocracy And Social cyber-security

Computational Analysis of Social and Organizational Systems



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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.

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Report Overview November 11 – November 17

- ❑ Masks, Mandates, Race, Boosters and Myocarditis are trending this week, also Masks, Myocarditis, Military are trending this week over the last;
- ❑ Trending stories: [nbcnews.com/304IKbS](https://www.nbcnews.com/health/heart-disease/myocarditis-after-covid-vaccination-research-possible-long-term-risks-underway-rcna123456) Myocarditis after Covid vaccination: Research on possible long-term risks underway; [vaccines.gov](https://www.vaccines.gov/); [politicalwire.com/2022/11/14/covid-deaths-probably-cost-republicans-the-midterms](https://www.politicalwire.com/2022/11/14/covid-deaths-probably-cost-republicans-the-midterms) Covid Deaths Probably Cost Republicans the Midterms; [vox.com/science-and-health/23453765/flu-season-2022-2023-winter-influenza-shot-vaccine](https://www.vox.com/science-and-health/23453765/flu-season-2022-2023-winter-influenza-shot-vaccine) This flu season is looking really scary, in one chart; [reuters.com/business/healthcare-pharmaceuticals/repeat-covid-is-riskier-than-first-infection-study-finds-2022-11-10](https://www.reuters.com/business/healthcare-pharmaceuticals/repeat-covid-is-riskier-than-first-infection-study-finds-2022-11-10) Repeat COVID is riskier than first infection, study finds;
- ❑ Popular anti-vax tweets: It's amazing to me how quickly Americans FORGOT which party shut us down/controlled us for 2 years in the name of COVID bullshit. We were forced to miss milestone events, forced to mask & shamed to vax. Students will suffer generational learning loss. Y'all just forgive that?; Ex Vice President of Pfizer Dr Mike Yeadon!!!! "This is good versus evil!!!!" "The kind of planning and thinking it takes to have done what has happened, they're not normal people...!!!" <https://t.co/Pn6l73r48l>; Myocarditis after Covid vaccination: Pfizer and Moderna are tracking adverse health effects, if any, that may appear in the years following a diagnosis of vaccine-associated heart problems. <https://t.co/Ddyz69YhyX>; "The immune status of the vaccinated is fundamentally different from the unvaccinated" Dr Gert Vanden Bosche <https://t.co/vBR37xIKN5>

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Popular anti-vax stories November 11 – November 17

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

- ❑ [thepostmillennial.com/nbc-news-tells-parents-to-vaccinate-their-kids-and-shun-the-unvaccinated-over-the-holidays](https://www.thepostmillennial.com/nbc-news-tells-parents-to-vaccinate-their-kids-and-shun-the-unvaccinated-over-the-holidays) NBC News tells parents to vaccinate their kids and shun the unvaccinated over the holidays;
- ❑ trib.al/HzfuB6x Pfizer and Moderna launch trials to track whether health issues arise YEARS after getting their Covid vaccines;
- ❑ [childrenshealthdefense.org/defender/catherine-boss-gardasil-hpv-vaccine-injury](https://www.childrenshealthdefense.org/defender/catherine-boss-gardasil-hpv-vaccine-injury) Merck's Gardasil HPV Vaccine Caused 16-Year-Old's Debilitating Injuries, Latest Lawsuit Alleges;
- ❑ [thecountersignal.com/australian-government-says-vaccine-risk-too-high-for-people-under-30](https://www.thecountersignal.com/australian-government-says-vaccine-risk-too-high-for-people-under-30) Australian government says vaccine risk too high for people under 30;
- ❑ iamajuicer.wordpress.com/2021/11/01/why-those-getting-the-covid-vaccine-should-be-locked-down-and-wear-a-mask Why those getting the Covid vaccine should be locked down and wear a mask;
- ❑ [childrenshealthdefense.org/defender/pfizer-paxlovid-covid-drug-fraud-cola](https://www.childrenshealthdefense.org/defender/pfizer-paxlovid-covid-drug-fraud-cola) Pfizer's Paxlovid Is a Fraud — It's Time to Yank It From the Market

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Countering disinformation November 11 – November 17

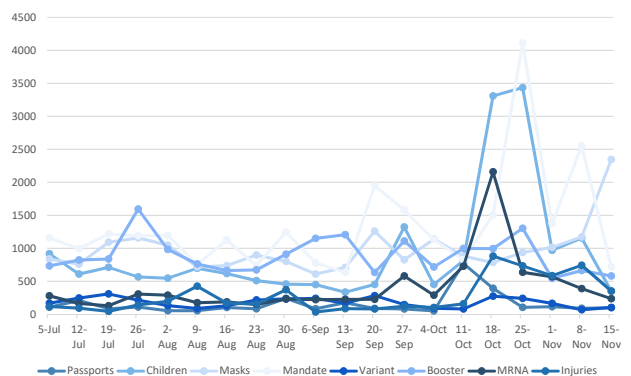
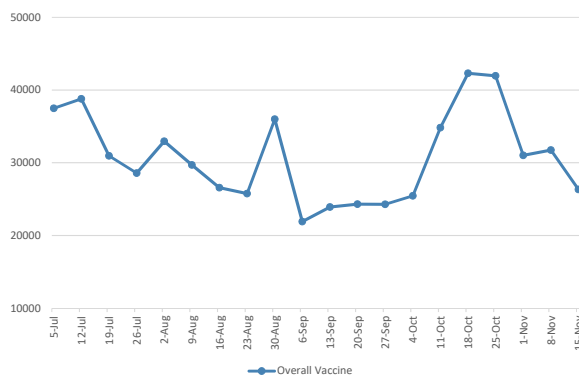
Articles and fact-checking stories debunking disinformation for the last week:

- ❑ New 'Died Suddenly' Film Pushes Unfounded Depopulation Claims About Covid-19 Vaccine <https://www.forbes.com/sites/brucelee/2022/11/22/new-died-suddenly-film-pushes-unfounded-depopulation-claims-about-covid-19-vaccine/?sh=2baec8c549d0>; Fact Check: Movie 'Died Suddenly' Does NOT Demonstrate That COVID-19 Vaccines Cause Sudden Death <https://leadstories.com/hoax-alert/2022/11/fact-check-movie-died-suddenly-does-not-demonstrate-that-covid-vaccines-cause-sudden-death.html>; They died suddenly - then the anti-vax trolling started <https://www.bbc.com/news/health-63719246>;
- ❑ Fact Check-Graph of unverified data is not evidence of increased miscarriage risk with COVID vaccination <https://www.reuters.com/article/factcheck-vaers-miscarriage-idUSL1N32I2KR>;
- ❑ Reports of rare Covid vaccine side effect does not mean jabs 'unsafe, ineffective' <https://factcheck.afp.com/doc.afp.com.32NU48Q>

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Trends (tweets per week in PA) November 11 – November 17



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High Level View by City November 11 – November 17

	Total PA	Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
Conversation	Tweets	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	22845	11696	51.2%	7141	31.3%	178	0.8%	2929	12.8%	901	3.9%
Vaccine Passports	100	47	0.4%	31	0.4%	1	0.6%	18	0.6%	3	0.3%
FDA Approval	8	3	0.0%	2	0.0%			2	0.1%	1	0.1%
Boosters	405	216	1.8%	98	1.4%	8	4.5%	65	2.2%	18	2.0%
Employees	44	21	0.2%	16	0.2%			6	0.2%	1	0.1%
"Experimental"	173	62	0.5%	44	0.6%	2	1.1%	58	2.0%	7	0.8%
Children	198	117	1.0%	40	0.6%			36	1.2%	5	0.6%
Myocarditis	400	169	1.4%	88	1.2%	5	2.8%	124	4.2%	14	1.6%
Heart	361	174	1.5%	99	1.4%	2	1.1%	76	2.6%	10	1.1%
Masks	2337	1683	14.4%	212	3.0%	7	3.9%	369	12.6%	66	7.3%
Thrombosis/VITT	8	4	0.0%	3	0.0%			1	0.0%		
Mandates	719	460	3.9%	139	1.9%	1	0.6%	105	3.6%	14	1.6%
Natural Immunity	46	19	0.2%	12	0.2%	1	0.6%	13	0.4%	1	0.1%
Efficacy	41	24	0.2%	5	0.1%			12	0.4%		
Omicron	77	46	0.4%	16	0.2%	1	0.6%	11	0.4%	3	0.3%
Delta Variant	22	6	0.1%	2	0.0%	2	1.1%	3	0.1%	9	1.0%
Race	563	301	2.6%	169	2.4%	8	4.5%	64	2.2%	21	2.3%
Ivermectin	15	7	0.1%	6	0.1%			1	0.0%	1	0.1%
Military	291	180	1.5%	48	0.7%	5	2.8%	49	1.7%	9	1.0%
Breakthrough	11	6	0.1%	2	0.0%			2	0.1%	1	0.1%

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Conversation topics trending this week over last:

- Masks
- Myocarditis
- Military



High Level View by County November 11 – November 17

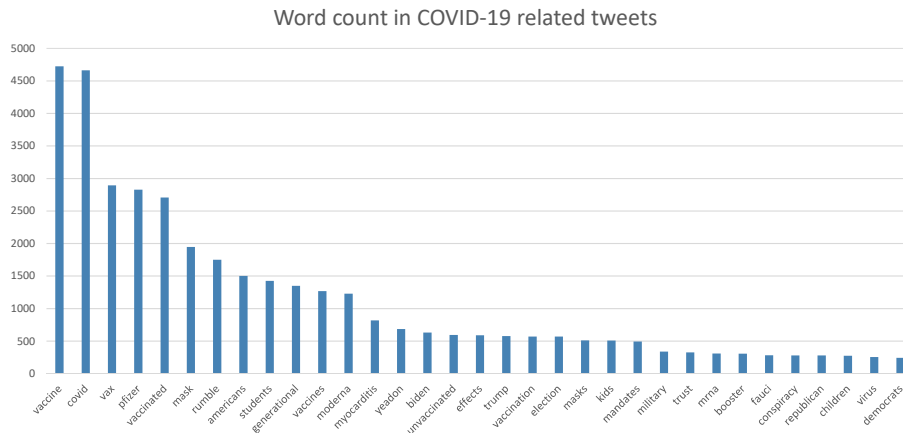
County	Allegheny	Beaver	Butler	Cambria	Fayette	Indiana	Somerset	Westmoreland
Overall Vaccine	7314	11	26	4	15	9	10	23
Vaccine Passports	31					1		
FDA	2							
Boosters	102		1					2
Employees	16						1	
"Experimental"	45						1	
Children	40						1	
Myocarditis	91	1						
Heart	99	1	1		1			
Masks	222						1	4
Thrombosis/VITT	3							
Mandates	142					1		1
Natural Immunity	12							
Efficacy	5							
Omicron	16							
Delta Variant	5							
Race	175							1
Ivermectin	6		1					
Military	48	1			1			1
Breakthrough	2							

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



Top Words Used per Week November 11 – November 17



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Top Hashtags by County November 11 – November 17

❑ 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	Indiana	Beaver + Butler
herewego (62)	novaccinemandates (1)	bideneffect (1)
bideneffect (38)	novaccinepassports (1)	democratsdeliver (1)
democratsdeliver (38)		
diedsuddenly (32)		
stoptheshots (31)		

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Top Hashtags by City November 11 – November 17

❑ 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
bideneffect (53)	vaccine (4)	covid19 (17)	bideneffect (37)	stoptheshots (7)	vaccineswork (14)	bideneffect (8)
democratsdeliver (53)	covidvaccine (3)	bideneffect (12)	democratsdeliver (37)	pfizer (2)	diedsuddenly (13)	democratsdeliver (8)
longcovid (38)	vaccination (3)	democratsdeliver (12)	diedsuddenly (32)	bideneffect (1)	pfizer (13)	vaccineswork (5)
vaccine (34)	bidenlies (2)	vaccineswork (11)	stoptheshots (31)	bringbackmasks (1)	bideneffect (7)	bringbackmasks (3)
diedsuddenly (33)	medicaldiscrimination (2)	vaxupphilly (11)	vaccineswork (23)	corruptgovernment (1)	democratsdeliver (7)	getvaccinated (2)

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Top URLs by County November 11 – November 17

Allegheny	Beaver + Butler	Indiana	Somerset	West Moreland
nbcnews.to/3041KbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (137)	nbcnews.to/3041KbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (3)	globalnews.ca/news/9261410/alberta-court-of-appeal-organ-transplant-covid-vaccine/amp Alberta's Court of Appeal dismisses case against COVID-19 vaccine requirement for organ transplant (1)	OpenVAERS.com VAERS (1)	redcross.org/about-us/news-and-events/news/2022/you-can-give-blood-after-getting-flu-shot-and-covid-19-vaccine.html You Can Give Blood after Getting Flu Shot and COVID-19 Vaccine (1)
thepostmillennial.com/nbc-news-tells-parents-to-vaccinate-their-kids-and-shun-the-unvaccinated-over-the-holidays NBC News tells parents to vaccinate their kids and shun the unvaccinated over the holidays (94)	pfizer.com/news/articles/cold_wars_why_women_feel_the_chill_more Cold Wars: Why Women Feel The Chill More (1)	globalresearch.ca/pfizergate-official-government-reports-prove-hundreds-thousands-people-dying-every-single-week-due-covid-19-vaccination/5790262 PfizerGate: Official Government Reports prove Hundreds of Thousands of People Are Dying Every Single Week Due to COVID-19 Vaccination (1)		
vaccines.gov (63)		miamiherald.com/news/coronavirus/article268224827.html COVID booster may lower protection against omicron reinfection, study finds. Here's why (1)		
trib.al/HzfuB6x Pfizer and Moderna launch trials to track whether health issues arise YEARS after getting their Covid vaccines (56)				
politicalwire.com/2022/11/14/covid-deaths-probably-cost-republicans-the-midterms Covid Deaths Probably Cost Republicans the Midterms (24)				

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Top URLs by City November 11 – November 17

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (247)	nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (14)	nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (31)	nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (137)	nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (6)	nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (102)	vaccines.gov (9)
vaccines.gov (69)	politicalwire.com/2022/11/14/covid-deaths-probably-cost-republicans-the-midterms Covid Deaths Probably Cost Republicans the Midterms (7)	vaccines.gov (14)	thepostmillennial.com/nbc-news-tells-parents-to-vaccinate-their-kids-and-shun-the-unvaccinated-over-the-holidays NBC News tells parents to vaccinate their kids and shun the unvaccinated over the holidays (94)	bloomberg.com/news/articles/2022-09-28/research-monkey-shortage-boosts-china-s-vaccine-development Lab Monkeys Are the Latest Covid Shortage (2)	vaccines.gov (25)	nbcnews.com/304IKbS Myocarditis after Covid vaccination: Research on possible long-term risks underway (12)
childrenshealthdefense.org/defense/catherine-hoss-gardasil-hpv-vaccine-injury Merck's Gardasil HPV Vaccine Caused 16-Year-Old's Debilitating Injuries, Latest Lawsuit Alleges (67)	trib.al/HzfU6x Pfizer and Moderna launch trials to track whether health issues arise YEARS after getting their Covid vaccines (6)	thecountersignal.com/australian-government-says-vaccine-risk-too-high-for-people-under-30 Australian government says vaccine risk too high for people under 30 (10)	vaccines.gov (63)	thelancet.com/journals/lanmic/article/PIIS2666-5247(22)00347-7/fulltext Protection from previous natural infection compared with mRNA vaccination against SARS-CoV-2 infection and severe COVID-19 in Qatar: a retrospective cohort study (2)	trib.al/HzfU6x Pfizer and Moderna launch trials to track whether health issues arise YEARS after getting their Covid vaccines (21)	evanhospital.com/virus Coronavirus Update (5)
vox.com/science-and-health/23453765/flu-season-2022-2023-winter-influenza-shot-vaccine This flu season is looking really scary, in one chart (40)	americanlibertyreportnews.com/articles/court-orders-cdc-to-release-data-showing-12-million-vaccine-injuries-in-america Court Orders CDC to Release Data Showing 18 Million Vaccine Injuries in America (3)	thepostmillennial.com/nbc-news-tells-parents-to-vaccinate-their-kids-and-shun-the-unvaccinated-over-the-holidays NBC News tells parents to vaccinate their kids and shun the unvaccinated over the holidays (8)	trib.al/HzfU6x Pfizer and Moderna launch trials to track whether health issues arise YEARS after getting their Covid vaccines (56)	trib.al/dbGt8sz Covid Hospitalizations Are Rising in Kids Under 6 Months, CDC Director Walensky Says (2)	iamajucker.wordpress.com/2021/11/01/why-those-getting-the-covid-vaccine-should-be-locked-down-and-wear-a-mask Why those getting the Covid vaccine should be locked down and wear a mask (16)	10tv.com/article/news/local/confirmed-measles-cases-at-columbus-area-child-care-facility/530-404d28b4-0b20-464b-b270-b5e1b1f93aec 4 confirmed cases of measles among children at Columbus-area child care facility (3)
trib.al/HzfU6x Pfizer and Moderna launch trials to track whether health issues arise YEARS after getting their Covid vaccines (36)	childrenshealthdefense.org/defense/pfizer-paxlovid-covid-drug-fraud-cola Pfizer's Paxlovid Is a Fraud — It's Time to Yank It From the Market (3)	reuters.com/business/health-care-pharmaceuticals/repeat-covid-is-riskier-than-first-infection-study-finds-2022-11-10 Repeat COVID is riskier than first infection, study finds (6)	politicalwire.com/2022/11/14/covid-deaths-probably-cost-republicans-the-midterms Covid Deaths Probably Cost Republicans the Midterms (24)	vaccines.gov (2)	thepostmillennial.com/nbc-news-tells-parents-to-vaccinate-their-kids-and-shun-the-unvaccinated-over-the-holidays NBC News tells parents to vaccinate their kids and shun the unvaccinated over the holidays (13)	ctvnews.ca/health/coronavirus/risk-of-heart-inflammation-higher-with-moderna-vaccine-study-1.6153060 Risk of heart inflammation higher with Moderna vaccine: study (3)

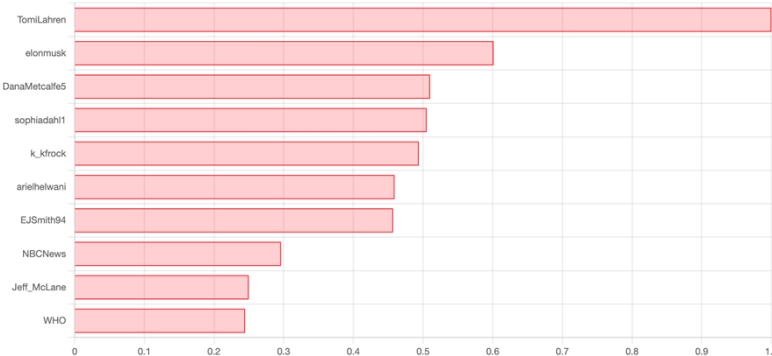
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Analysis of Tweeters - Super Spreaders

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



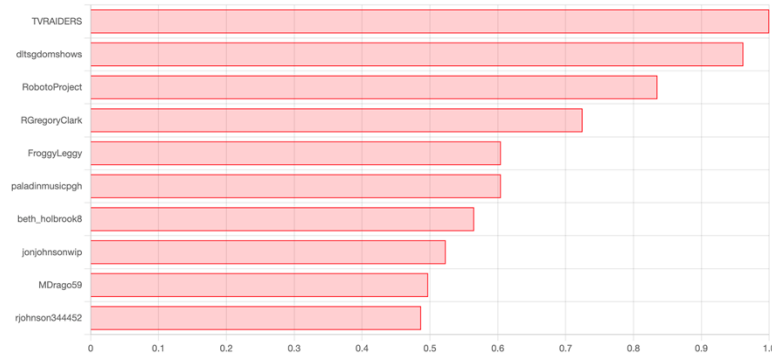
12/6/2022

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Analysis of Tweeters - Super Friends

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

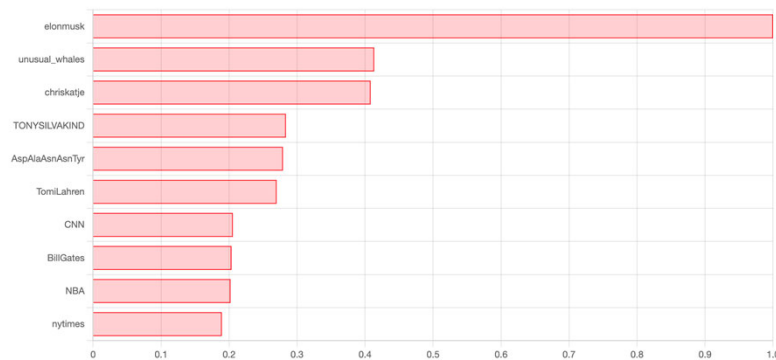


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Analysis of Tweeters - Other Influencers

- ❑ 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.



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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
donmoyn	230
elonmusk	206
bennyjohnson	169
POTUS	119
AuronMacintyre	101
CGJXXIII	98
MZHemingway	84
pfizer	82
FoxNews	79
NBCNews	78
CDCgov	71
DrAseemMalhotra	71
baumhedlund	70

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Trending Tweets November 11 - November 17

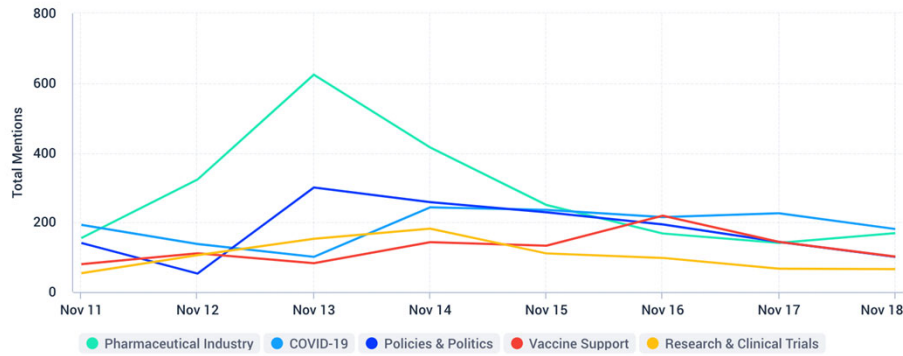
Tweets that are the most forwarded, either by retweet, reply, or quote:

- ❑ It's amazing to me how quickly Americans FORGOT which party shut us down/controlled us for 2 years in the name of COVID bullshit. We were forced to miss milestone events, forced to mask & shamed to vax. Students will suffer generational learning loss. Y'all just forgive that?;
- ❑ Ex Vice President of Pfizer Dr Mike Yeadon!!!! "This is good versus evil!!!! "The kind of planning and thinking it takes to have done what has happened, they're not normal people...!!!" <https://t.co/Pn6173r48I>;
- ❑ Myocarditis after Covid vaccination: Pfizer and Moderna are tracking adverse health effects, if any, that may appear in the years following a diagnosis of vaccine-associated heart problems. <https://t.co/Ddyz69YhyX>;
- ❑ - Pfizer wants you to know their vaccines are safe. - Election officials want you to know the elections are fair. - Fact checkers want you to know their facts are the real facts. - The media wants you to know they never lie. - The government wants you to know you can trust them;
- ❑ "The immune status of the vaccinated is fundamentally different from the unvaccinated" Dr Gert Vanden Bosche <https://t.co/yBR37xIKN5>;
- ❑ You know what would really honor our Veterans today? If every politician that was just elected to Congress commits to pass a bill that reinstates all the fired troops who refused to get the COVID vaccine with backpay and damages for discrimination. Apologize to them too!;
- ❑ BREAKING: Pfizer and Moderna are launching clinical trials to track vaccine-caused myocarditis in teens/young adults. We were censored for exposing the dangers of these experimental biological agents. Now, even the creators of the "vaccines" are forced to recognize the truth;
- ❑ Fakebook locked me out of my page for 24 hours for posting a link to testimony from a Pfizer executive before the EU parliament. An official government proceeding;
- ❑ Pennsylvania gave us one of the worst pedo predators ever, one of the worst serial killers ever, one of the most mentally ill public officials ever, and now the most vaccine injured plus dead politicians ever. All in the last decade. Get the bleep out of that forsaken state.

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General PA Conversation November 11 – November 17

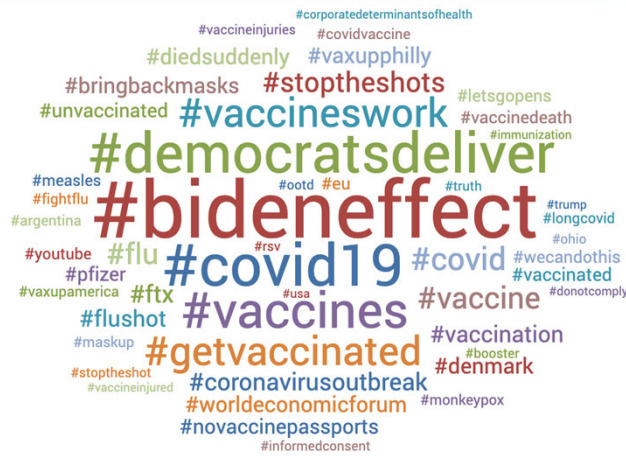


Source: VCTR Project Dashboard

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PA Hashtag Cloud November 11 – November 17

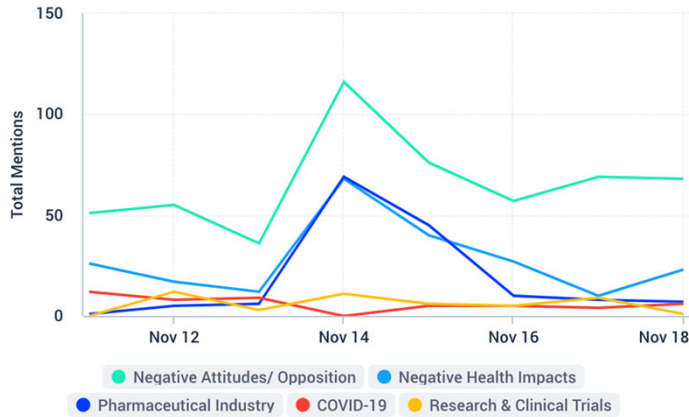


Source: VCTR Project Dashboard

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Negative Attitudes November 11 – November 17



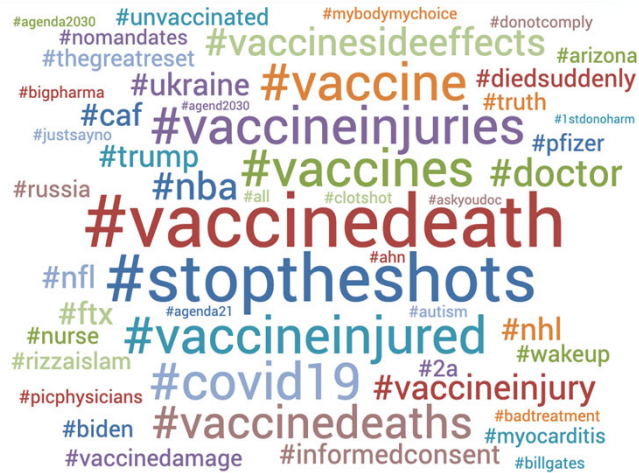
12/6/2022

Source: VCTR Project Dashboard



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Negative Hashtag Cloud November 11 – November 17



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Source: VCTR Project Dashboard




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Trending Posts on Facebook November 11 – November 17

Allegheny County Health...
Nov 17, 2022 at 2:00 PM

For the week of November 10-16, there were 666 new COVID-19 infections, 85 hospitalizations and 12 deaths reported to the Allegheny County Health Department. According to the Centers...
[See more](#)




www.AlleghenyCounty.US/COVID

16 14 2


Rose Unplugged
Nov 17, 2022 at 2:49 PM

Dr. Peter McCullough on Rose Unplugged: NEW COVID STRAINS? - What do the new strains indicate? What about those who have had one strain of COVID already? The new mutation site appears to be critical in terms of its resistance to vaccines and antibodies.... - Deprivation of "Shared Decision Making" - Medication reconciliation is explained by Dr. McCullough - Where are we with the virus now? Are we still talking Vax, Mask, and test? - We are out of ammo again: BA.4 and BA.5 viruses started to disappear. The emergent strains are BQ.1 and BQ.1.1. The antibodies against BA.4 and BA.5 don't cover the new variants at all or at the least have a very limited effect open.spotify.com/episode/13jYC2zBOT0TeAniPv7dtm?si=e7de2a87c8ef43a8
[See less](#)



UPMC Magee-Womens H...
Nov 15, 2022 at 9:15 AM


Recent studies have shown that babies under 6 months old, who aren't eligible for vaccination, have high COVID-19-associated hospitalization rates. So it is very important for people who are tryin...
[See more](#)



18 0 1

WTAE-TV Pittsburgh
Nov 13, 2022 at 1:05 PM

The ship had 4,600 passengers and crew on board at the time.
Cruise ship with 800 Covid-positive passengers docks in
WTAE.COM



135 78 40

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Source: CrowdTangle Dashboard



Trending Posts on Reddit November 11 – November 17

r/covidlonghauers

Posted by u/Mindless-Software-74 19 days ago

152 **University of Pennsylvania Long Haul Clinic (Penn Medicine) said this is post viral syndrome and most sufferers have ME/CFS and/or dysautonomia**


[Update](#)

First experience with one of the top hospitals in the nation's long covid clinic. The doctor really didn't sugarcoat shit. She said I have long haul and that it's bad, that they're seeing this more and more.

Posted 13 days ago to Pittsburgh Post-G...

[Local] - COVID-19 numbers drop in Allegheny County

POST-GAZETTE.COM



UPVOTES 1 COMMENTS 0

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Source: CrowdTangle Dashboard



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.")

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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.

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