

PA Vaccine Conversations on Twitter

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Vaccine Hesitancy Project Update based on January 21, 2022 – January 27, 2022

The CMU centers for:

Informed DEMocracy And Social cyber-security

Computational Analysis of Social and Organizational Systems



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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.

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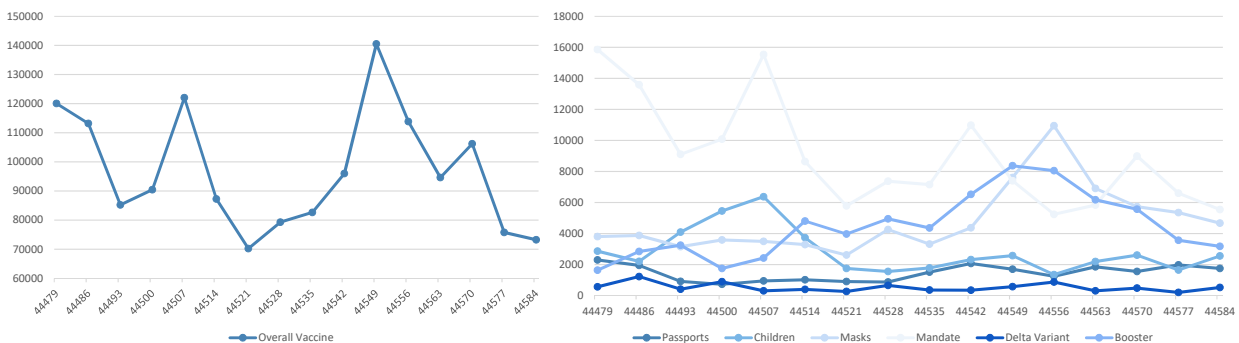
Report Overview January 21 – January 27

- ❑ This week's trending stories cover Mandates, "Natural" immunity, Masks, Boosters, Omicron, new subvariant Stealth Omicron;
- ❑ Trending stories: <https://mediaite.com/a/iuug> Eric Clapton Says Vaccinated People Are Victims of 'Mass Formation Hypnosis'; <https://boston.cbslocal.com/2022/01/24/covid-19-vaccine-heart-transplant-boston-brigham-womens/> Man Can't Get Heart Transplant Because He's Not Vaccinated Against COVID; <https://www.itv.com/news/2022-01-24/boris-johnson-had-birthday-bash-during-lockdown-itv-news-understands> Boris Johnson had birthday bash during lockdown, ITV News understands; <http://hub.jhu.edu/2022/01/11/covid-19-vaccine-boosters-beyrer-qa> YES, YOU SHOULD GET A BOOSTER; <https://trib.al/9wGK8u8> Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns'; <https://www.independent.co.uk/sport/olympics/antivax-covid-szilveszter-csollany-hungary-b2000002.html> Anti-vax Olympic gold medalist Szilveszter Csollany dies of Covid, aged 51; <https://nyti.ms/3lzI7Wl> Sarah Palin, who is unvaccinated, recently dined indoors in New York City before testing positive
- ❑ Anti-vax, disinformation, and vaccine hesitancy stories: <https://www.theblaze.com/op-ed/horowitz-whistleblowers-share-dod-medical-data-that-blows-vaccine-safety-debate-wide-open> Horowitz: Whistleblowers share DOD medical data that blows vaccine safety debate wide open; <https://hannity.com/media-room/naturally-cdc-reports-natural-immunity-outperformed-vaccine-only-protection-against-delta/>; NATURALLY: CDC Reports Natural Immunity Outperformed Vaccine-Only; <https://thenewamerican.com/study-most-of-vaccinated-die-because-of-vax-induced-autoimmune-attacks-on-their-own-organs/> Study: Most of Vaccinated Die Because of Vax-induced Autoimmune Attacks on Their Own Organs; <https://dailysceptic.org/2022/01/20/natural-immunity-superior-to-vaccine-immunity-cdc-study-finds/> Natural Immunity Superior to Vaccine Immunity, CDC Study Finds; <https://talkingpointsmemo.com/edblog/where-things-stand-fda-halting-use-of-some-monoclonal-antibodies-treatments-bursts-gops-anti-vax-bubble> Where Things Stand: FDA Halting Use Of Some Monoclonal Antibodies Treatments Bursts GOP's Anti-Vax Bubble; <https://summit.news/2022/01/25/unvaccinated-to-be-accompanied-by-staff-in-walmart-to-make-sure-they-dont-buy-anything-other-than-food-pharma/> Unvaccinated to be Accompanied by Staff in Walmart to Make Sure They Don't Buy Anything Other Than Food & Pharma

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Trends (tweets per week) January 21 – January 27



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High Level View by City January 21 – January 27

	Total PA	Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
Conversation	Tweets	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	61832	33704	143.0%	16043	68.1%	712	3.0%	8670	36.8%	2703	11.5%
Vaccine Passports	1738	985	2.9%	445	2.8%	19	2.7%	249	2.9%	40	1.5%
FDA Approval	157	77	0.2%	40	0.2%		0.0%	36	0.4%	4	0.1%
Boosters	2025	1065	3.2%	521	3.2%	26	3.7%	320	3.7%	93	3.4%
Employees	905	453	1.3%	196	1.2%	11	1.5%	202	2.3%	43	1.6%
"Experimental"	171	97	0.3%	30	0.2%	4	0.6%	36	0.4%	4	0.1%
Children	1391	815	2.4%	286	1.8%	17	2.4%	229	2.6%	44	1.6%
Myocarditis	315	167	0.5%	63	0.4%	7	1.0%	74	0.9%	4	0.1%
Heart	1238	633	1.9%	286	1.8%	19	2.7%	237	2.7%	63	2.3%
Masks	4572	2181	6.5%	1354	8.4%	70	9.8%	648	7.5%	319	11.8%
Thrombosis/VITT	32	17	0.1%	14	0.1%		0.0%		0.0%	1	0.0%
Mandates	5498	2890	8.6%	1204	7.5%	67	9.4%	1094	12.6%	243	9.0%
Natural Immunity	2080	1223	3.6%	528	3.3%	16	2.2%	276	3.2%	37	1.4%
Efficacy	146	77	0.2%	40	0.2%		0.0%	23	0.3%	6	0.2%
Omicron	1664	807	2.4%	436	2.7%	14	2.0%	307	3.5%	100	3.7%
Delta Variant	516	225	0.7%	156	1.0%	9	1.3%	87	1.0%	39	1.4%
Race	1226	596	1.8%	419	2.6%	13	1.8%	152	1.8%	46	1.7%
Ivermectin	131	60	0.2%	33	0.2%	1	0.1%	34	0.4%	3	0.1%
Military	133	80	0.2%	23	0.1%	3	0.4%	14	0.2%	13	0.5%
Breakthrough	88	49	0.1%	23	0.1%	1	0.1%	14	0.2%	1	0.0%

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- Trending conversations this week:
 - "Natural" immunity
 - Heart-related side effects
 - FDA Approval



High Level View by County January 21 – January 27

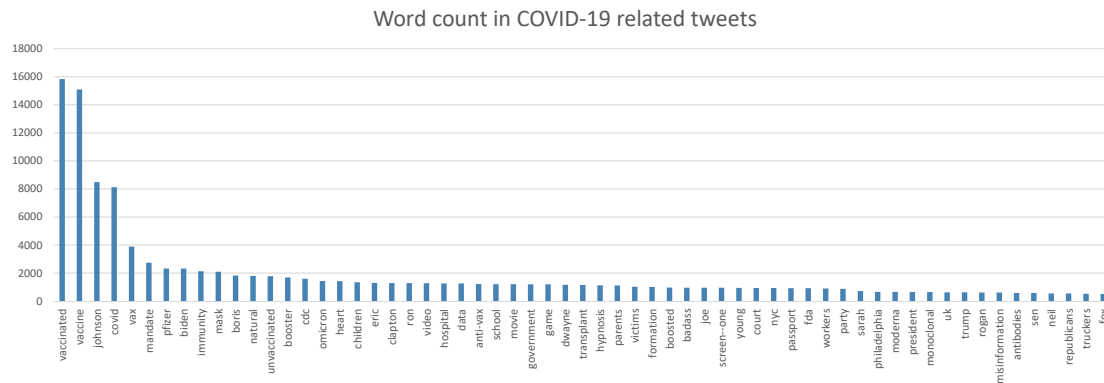
County	Allegheny	Beaver	Butler	Cambria	Fayette	Indiana	Somerset	Westmoreland
Overall Vaccine	16506	43	57	9	54	27	11	84
Vaccine Passports	449		3					4
FDA	40							
Boosters	533	1			3			1
Employees	204				3			1
"Experimental"	30							
Children	300		1					
Myocarditis	63							
Heart	305	3	1	3	1			
Masks	1413	6	6	3	4	6		19
Thrombosis/VITT	14							
Mandates	1227	4	3		9		3	9
Natural Immunity	533		4		1			1
Efficacy	40							
Omicron	456	1	1		1	1		1
Delta Variant	159		1					1
Race	430			1				1
Ivermectin	33							
Military	23							
Breakthrough	24							

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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 January 21 – January 27



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Top Hashtags by County January 21 – January 27

❑ 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	Fayette	Somerset	West Moreland
covid19 (248)	covid19 (1)	boycottstarbucks (2)	boycott (1)	pharmtech (1)
vaccine (76)	fauci (1)	aaronrodgers (1)	boycottstarbucks (1)	freedomconvoy2022 (1)
steelers (44)	maskmandates (1)		cbj (1)	blm (1)
pfizer (39)	maskmandates (1)		publicsafety (1)	cvspharmtech (1)
boycottwalmart (34)	pfizer (1)			

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Top Hashtags by City January 21 – January 27

- ❑ 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 (281)	sarahpalin (50)	sarahpalin (163)	covid19 (245)	getvaccinated (5)	covid19 (82)	covid19 (29)
pfizer (86)	covid19 (34)	oann (87)	vaccine (76)	getboosted (4)	fundourschoolspa (35)	vaccine (22)
omicron (71)	myocarditis (18)	covid19 (79)	steelers (43)	bluevoices (3)	schoolfundingtrial (35)	eagles (8)
vaxupphilly (61)	freedomconvoy2022 (12)	fundourschoolspa (52)	pfizer (39)	truthinvaccination (3)	vaccine (33)	covidvaccine (6)
donotcomply (49)	demvoice1 (10)	covaxin (43)	boycottwalmart (34)	boycottstarbucks (2)	pfizer (25)	getvaccinatednow (6)

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Top URLs by County January 21 – January 27

Allegheny	Butler + Beaver	Cambria	Indiana + Somerset	Fayette	West Moreland
https://boston.chesocal.com/2022/01/24/covid-19-vaccine-heart-transplant-boston-brigham-womens/ Man Can't Get Heart Transplant Because He's Not Vaccinated Against COVID (118)	https://rumble.com/vta828-highlight-reel-sen-ron-johnsons-covid-19-a-second-opinion.html Highlight Reel: Sen. Ron Johnson's COVID-19: A Second Opinion Roundtable (1)	https://www.cbsnews.com/news/brigham-and-womens-hospital-boston-refusing-heart-transplant-man-wont-get-vaccinated/ Hospital refusing heart transplant for man who won't get vaccinated (2)	http://www.pharmaciststeve.com/hospital-removes-man-from-transplant-list-over-vaxx-status/ Hospital Removes Man from Transplant List Over Vaxx Status (1)	http://vaccines.gov (2)	https://summitnews/2022/01/25/unvaccinated-to-be-accompanied-by-staff-in-walmart-to-make-sure-they-dont-buy-anything-other-than-food-pharma/ Unvaccinated to be Accompanied by Staff in Walmart to Make Sure They Don't Buy Anything Other Than Food & Pharma (1)
https://www.itv.com/news/2022-01-24/boris-johnson-had-birthday-bash-during-lockdown-itv-news-understands Boris Johnson had birthday bash during lockdown, ITV News understands (115)	https://www.cbsnews.com/news/brigham-and-womens-hospital-boston-refusing-heart-transplant-man-wont-get-vaccinated/ Hospital refusing heart transplant for man who won't get vaccinated (1)		https://thenewamerican.com/study-most-of-vaccinated-die-because-of-vax-induced-autoimmune-attacks-on-their-own-organs/ Study: Most of Vaccinated Die Because of Vax-induced Autoimmune Attacks on Their Own Organs (1)	https://open.spotify.com/playlist/60olPaq0UlpYS7z367xuyj Playlist with deleted Neil Young (2)	https://trib.al/hX32Xq2 CDC: Natural immunity stronger than vaccines alone during delta wave (1)
http://hub.jhu.edu/2022/01/11/covid-19-vaccine-boosters-bevrex-ga-YES-YOU-SHOULD-GET-A-BOOSTER/ YES, YOU SHOULD GET A BOOSTER (91)	https://www.nytimes.com/live/2022/01/20/world/omicron-covid-vaccine-tests Covid News: Austrian Adult Vaccine Mandate Nears Approval (1)		https://www.thepointtimes.com/pfizer-board-member-suggests-end-to-mask-vaccine-mandates-4233260.html?utm_source=ref&utm_campaign=tw&rs=SHRCDFV Pfizer Board Member Suggests End to Mask, Vaccine Mandates (1)	https://talkingpointsmemo.com/edblog/where-things-stand-fda-halting-use-of-some-monoclonal-antibodies-treatments-bursts-gops-anti-vax-bubble Where Things Stand: FDA Halting Use Of Some Monoclonal Antibodies Treatments Bursts GOP's Anti-Vax Bubble (2)	https://trib.al/p7dvt4E Starbucks Scraps Vaccine Mandate — Here's How Large Companies Are Responding To Supreme Court Ruling (1)
https://trib.al/9wGK8u@ Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (76)	https://nymag.com/intelligencer/2022/01/omicron-deaths-anti-vax-vaccine.html Partisanism Made the Omicron Crisis Worse (1)		https://dailysceptic.org/2022/01/20/natural-immunity-superior-to-vaccine-immunity-cdc-study-finds/ Natural Immunity Superior to Vaccine Immunity, CDC Study Finds (1)	http://hill.cm/400lgo1 Cheryl Hines blasts husband RFK Jr.'s 'reprehensible' anti-vaccine, Holocaust remarks (1)	https://www.nbcnews.com/news/us-news/us-vaccine-mandate-freight-drivers-coming-canada-may-exacerbate-auto-supply-chain-shortage-1289244 U.S. vaccine mandate on freight drivers coming from Canada may worsen auto supply chain shortage (1)
https://hannity.com/media-room/naturally-cdc-reports-natural-immunity-outperformed-vaccine-only-protection-against-delta/ CDC Reports Natural Immunity Outperformed Vaccine-Only Protection Against Delta (44)	https://www.hollywoodreporter.com/news/music-news/spotify-neil-young-joe-rogan-1235081916/ Spotify to Pull Neil Young's Music After Artist's Objections to Joe Rogan (1)			http://thr.cm/scBgAyh Spotify to Pull Neil Young's Music After Artist's Objections to Joe Rogan (1)	https://www.rollingstone.com/music/music-news/graham-nash-rfk-jr-song-anti-vax-rally-video-1289244/ Graham Nash Slams RFK Jr. for Using His Song in Anti-Vax Rally Video (1)

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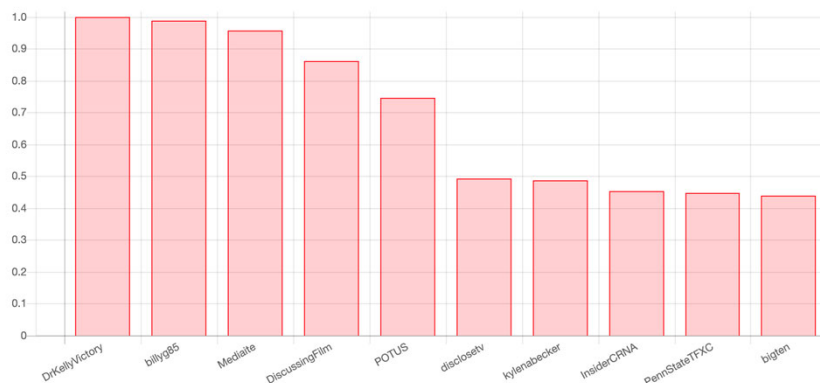
Top URLs by City January 21 – January 27

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
https://mediaite.com/a/jumug Eric Clapton Says Vaccinated People Are Victims of 'Mass Formation Hypnosis' (912)	https://www.youtube.com/watch?v=Nmiud-Cw53s Jan 5, 2022 ACIP Meeting - Welcome & Coronavirus Disease 2019 (COVID-19) Vaccines - CDC (18)	https://www.rollingstone.com/music/music-news/neil-young-demands-spotify-remove-music-vaccine-disinformation-1290020/ Neil Young Demands Spotify Remove His Music Over 'False Information About Vaccines' (17)	https://boston.cbslocal.com/2022/01/24/covid-19-vaccine-heart-transplant-boston-brigham-womens/ Man Can't Get Heart Transplant Because He's Not Vaccinated Against COVID (118)	https://childrenshealthdefense.org/defender/end-vaccine-mandates-government-overreach-dc-rally/ 30,000+ Demand End to Vaccine Mandates, Government Overreach at DC Rally (5)	https://trib.al/9wGK8u8 Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (53)	https://www.cbsnews.com/news/brigham-and-womens-hospital-boston-refusing-heart-transplant-man-wont-get-vaccinated/ Hospital refusing heart transplant for man who won't get vaccinated (14)
https://www.theblaze.com/op-ed/horowitz-whistleblowers-share-dod-medical-data-that-blows-vaccine-safety-debate-wide-open Horowitz: Whistleblowers share DOD medical data that blows vaccine safety debate wide open (268)	https://trib.al/SE050su Downing Street parties: 'No evidence' Tory MPs are being intimidated and blackmailed, says Boris Johnson (17)	http://vaccines.gov (15)	https://www.itv.com/news/2022-01-24/boris-johnson-had-birthday-bash-during-lockdown-itv-news-understands Boris Johnson had birthday bash during lockdown, ITV News understands (115)	https://www.newsweek.com/couple-faces-jail-time-allegedly-using-fake-covid-vaccine-card-get-nfl-game-1673258?utm_term=Autofeed&utm_medium=Social&utm_source=Twitter Jail Time for Allegedly Using Fake COVID Vaccine Card to Get Into NFL Game (5)	https://www.cbsnews.com/news/brigham-and-womens-hospital-boston-refusing-heart-transplant-man-wont-get-vaccinated/ Hospital refusing heart transplant for man who won't get vaccinated (31)	https://trib.al/9wGK8u8 Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (8)
https://www.independent.co.uk/sport/olympics/anti-vax-covid-szilveszter-csollany-hungary-b2000002.html Anti-vax Olympic gold medalist Szilveszter Csollany dies of Covid, aged 51 (213)	https://boston.cbslocal.com/2022/01/24/covid-19-vaccine-heart-transplant-boston-brigham-womens/ Man Can't Get Heart Transplant Because He's Not Vaccinated Against COVID (10)	https://www.theblaze.com/op-ed/horowitz-whistleblowers-share-dod-medical-data-that-blows-vaccine-safety-debate-wide-open Horowitz: Whistleblowers share DOD medical data that blows vaccine safety debate wide open (15)	http://hub.jhu.edu/2022/01/13/covid-19-vaccine-boosters-beyer-qa-yes-you-should-get-a-boost/ YES, YOU SHOULD GET A BOOSTER (91)	https://www.rollingstone.com/music/music-news/neil-young-demands-spotify-remove-music-vaccine-disinformation-1290020/ Neil Young Demands Spotify Remove His Music Over 'False Information About Vaccines' (4)	https://unherd.com/theopost/israeli-vaccine-chief-we-have-made-mistakes/71642614962158 Israeli vaccine advisor: 'We have made mistakes' (30)	https://nyti.ms/3ix7Wj Sarah Palin, who is unvaccinated, recently dined indoors in New York City before testing positive (6)
http://hub.jhu.edu/2022/01/11/covid-19-vaccine-boosters-beyer-qa-yes-you-should-get-a-boost/ YES, YOU SHOULD GET A BOOSTER (79)	https://www.theguardian.com/commentisfree/2022/jan/19/the-guardian-view-on-boris-johnson-and-partygate-all-played-out The Guardian view on Boris Johnson and 'partygate': all played out (10)	https://www.cbsnews.com/news/brigham-and-womens-hospital-boston-refusing-heart-transplant-man-wont-get-vaccinated/ Hospital refusing heart transplant for man who won't get vaccinated (12)	https://trib.al/9wGK8u8 Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (76)	https://trib.al/9wGK8u8 Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (3)	http://hub.jhu.edu/2022/01/11/covid-19-vaccine-boosters-beyer-qa-yes-you-should-get-a-boost/ YES, YOU SHOULD GET A BOOSTER (28)	http://vaccines.gov (5)
https://www.cbsnews.com/news/brigham-and-womens-hospital-boston-refusing-heart-transplant-man-wont-get-vaccinated/ Hospital refusing heart transplant for man who won't get vaccinated (79)	https://dailysceptic.org/2022/01/20/natural-immunity-superior-to-vaccine-immunity-cdc-study-finds/ Natural Immunity Superior to Vaccine Immunity, CDC Study Finds (7)	https://trib.al/9wGK8u8 Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (11)	https://hannity.com/media-room/naturally-cdc-reports-natural-immunity-outperformed-vaccine-only-protection-against-delta/ NATURALLY: CDC Reports Natural Immunity Outperformed Vaccine-Only Protection Against Delta (44)	https://www.independent.co.uk/sport/olympics/anti-vax-covid-szilveszter-csollany-hungary-b2000002.html Anti-vax Olympic gold medalist Szilveszter Csollany dies of Covid, aged 51 (3)	https://www.dailymail.co.uk/news/article-10439735/Boston-father-two-31-removed-heart-transplant-list-he-not-vaccinated.html Boston hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated: His father says 'my son has gone to the edge of death to stick to his guns' (26)	https://trib.al/zU483Hf Eric Clapton claims people vaccinated against COVID-19 are under 'hypnosis' (4)

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Analysis of Tweeters - Super Spreaders

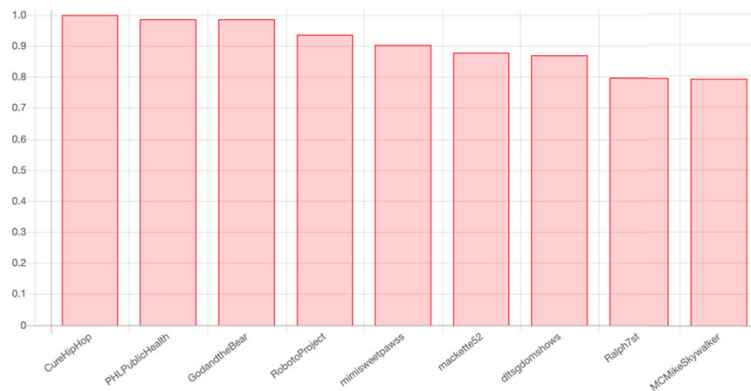
- ☐ Super Spreaders are users which generate content that is shared often, and hence spread information effectively.



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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.

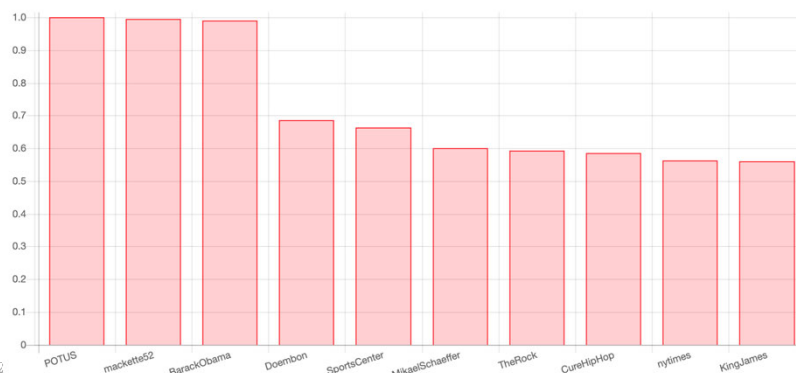


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Analysis of Tweeters - Other Influencers

- ❑ 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
POTUS	370
pfizer	301
US_FDA	254
FoxNews	234
CDCgov	211
akheriaty	205
treasuremembers	203
RealCandaceO	182
ClayTravis	158
catturd2	133

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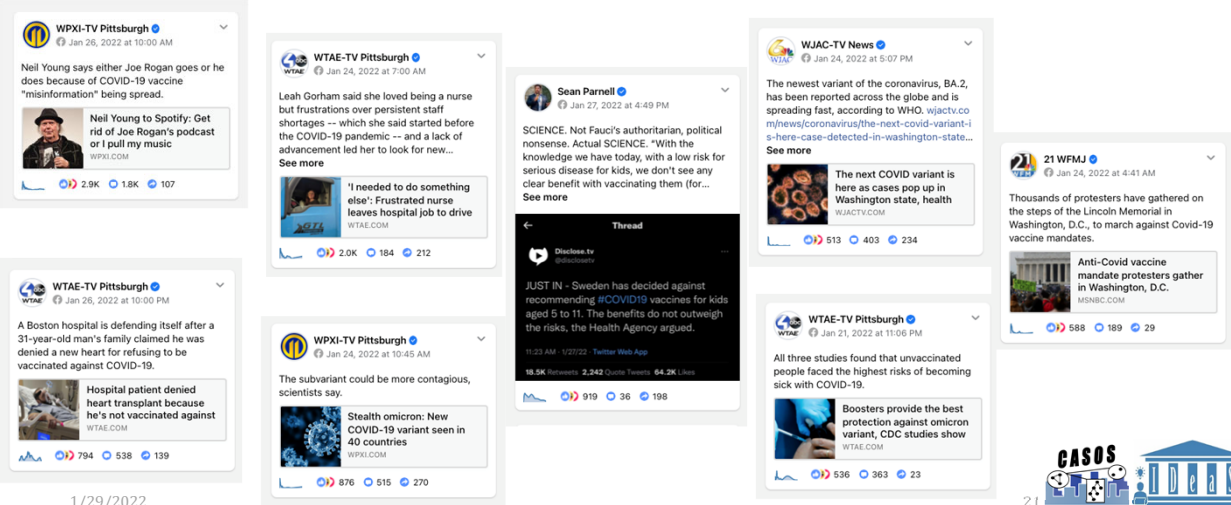
Trending Tweets January 21 – January 27

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

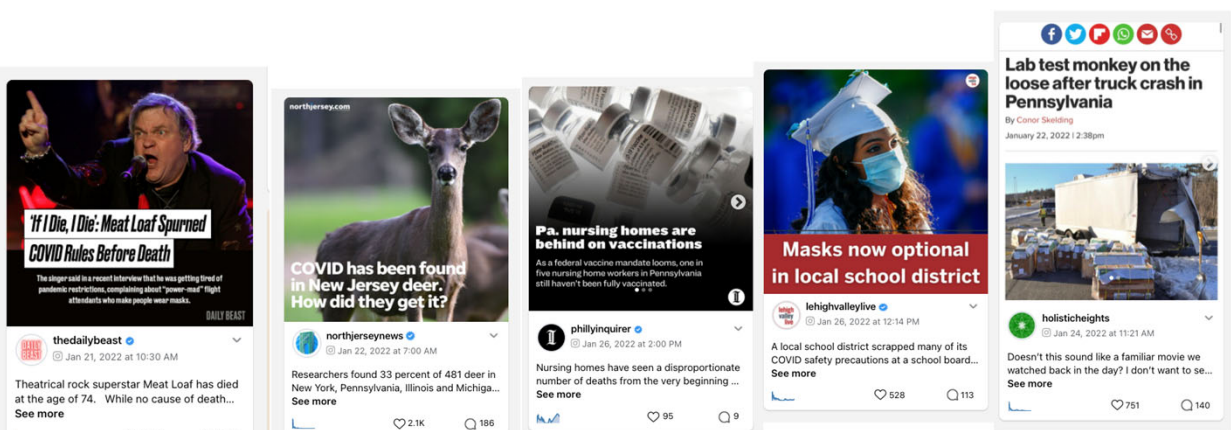
- ❑ Eric Clapton Says Vaccinated People Are Victims of 'Mass Formation Hypnosis' <https://t.co/dTuE6w1YS5>
- ❑ Since the CDC admits natural immunity is equivalent to vaccinated immunity (at a minimum), there needs to be immediate civil rights cases filed against NYC, San Fran, and all the rest of these "vaccine passport" cities for discrimination & violation of constitutional rights.
- ❑ NYPD arrested a 9 year old child in NYC because she didn't have a vax card in a museum. We are destroying lives. This has to stop! <https://t.co/SaHfchfV17>
- ❑ I've just read that Johnson is Ordering schools to stop wearing masks from next Thursday even if the Head, teachers and parents want to continue due to lots of cases. So, if a child catches Covid at school after next Thursday and dies, is the PM guilty of murder?
- ❑ To those who have not been vaccinated yet: now is the time. Protect yourself and your family.
- ❑ Sen. Ron Johnson asked about reducing child care costs: "Well, people decide to have families and become parents. That's something they need to consider when they make that choice. I've never really felt it was society's responsibility to take care of other people's children." <https://t.co/HyJr4iTwUG>
- ❑ #SarahPalin, who's said she'd be vaccinated for Covid-19 over her dead body, has been diagnosed with Covid-19 for the second time. Covid-19 is a very famous, very busy virus, but it's sweet that it still took the time to try to help Sarah achieve her goals.
- ❑ Hospital REMOVES dying father-of-two, 31, from top of heart transplant list because he's not vaccinated <https://t.co/xMChASc41y>
- ❑ <https://t.co/82b2ub5nHW>
- ❑ There's evidence that a booster dose reduces a person's likelihood of being infected with SARS-CoV-2. That's super like Mario, but less likely doesn't mean impossible. In general, boosters reduce symptom severity and duration, and reduce transmission: <https://t.co/rF2sQBdNM> <https://t.co/x1ybm0bCXy>
- ❑ The FDA's reason for revoking usage of the monoclonal antibodies is that it "doesn't work well on Omicron". But we were all ~~just~~ told that the Omicron variant is resistant to the vaccines. So why didn't they revoke usage of ALL Pfizer and Moderna vaccines? THIS IS PURE EVIL.



Trending Posts on Facebook January 21 – January 27



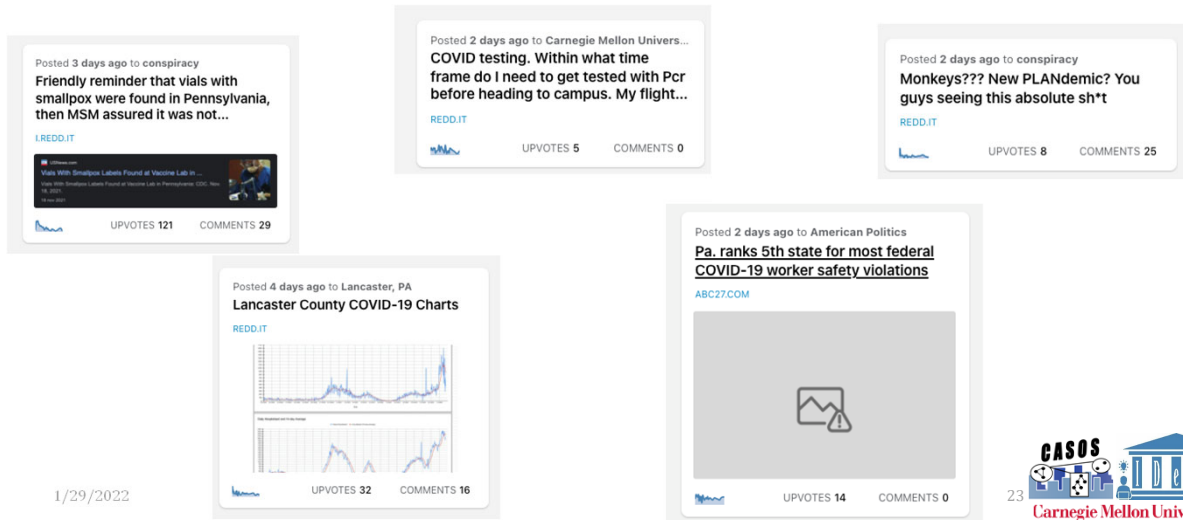
Trending Posts on Instagram January 21 – January 27



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Trending Posts on Reddit January 21 – January 27



For More Information

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- ❑ CASOS website - <http://www.casos.cs.cmu.edu/>
- ❑ Social Cybersecurity Working Group - <http://social-cybersecurity.org>
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