

PA Vaccine Conversations and Misinformation on Twitter

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Vaccine Hesitancy Project Update based on July 8 – July 15, 2021

The CMU centers for:
Informed DEMocracy And Social cyber-security
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- ❑ This report is an effort to summarize social media conversations around COVID-19 issues in Pennsylvania, focusing on vaccination. It contains an analysis of the general topics about the current pandemic, such as COVID-19 regulations, mandates, masks, pro-and anti-vaccination campaigns, as well as other topics related to COVID-19 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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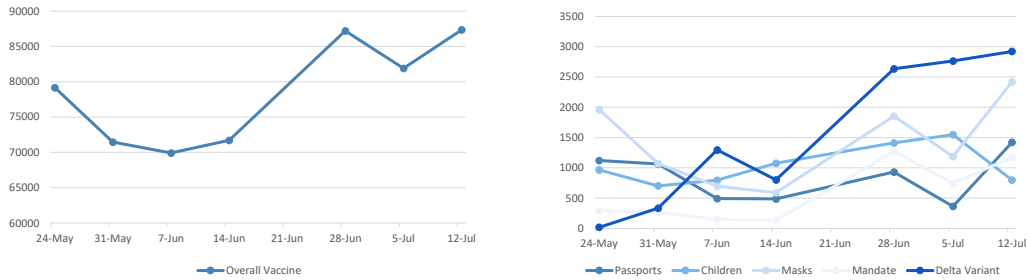


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Trends (tweets per week)



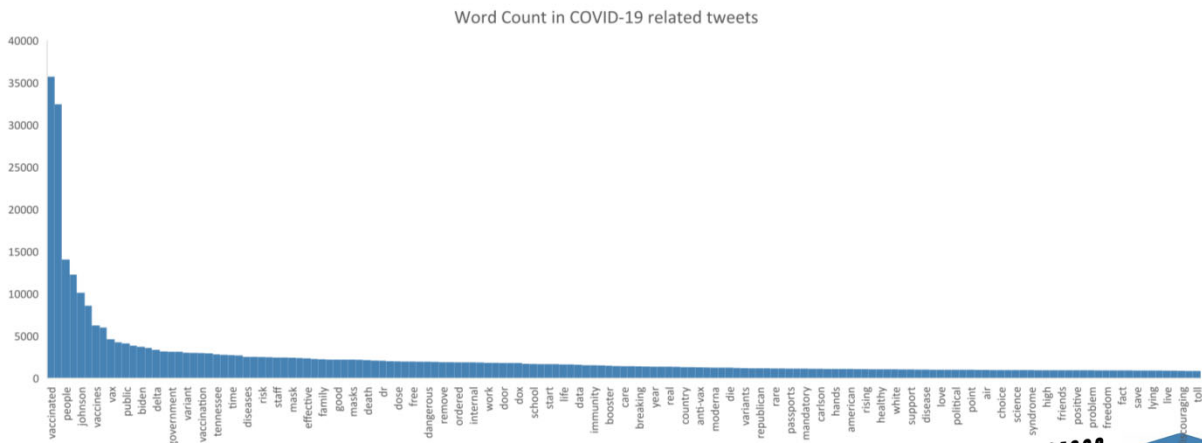
*These counts are from the entire PA-based conversation, which will include out-of-state tweets retweeted by in-state agents.

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Top Words Used per Week July 8 – July 15



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High Level View by City July 8 – July 15

Conversation	Total PA			Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
	Tweets	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	52364	30846	58.9%	11872	22.7%	532	1.0%	7767		14.8%		1347	2.6%
Vaccine Passports	529	345	1.1%	93	0.8%	6	1.1%	77		1.0%		8	0.6%
Not FDA Approved	174	99	0.3%	34	0.3%	4	0.8%	34		0.4%		3	0.2%
Boosters	623	321	1.0%	142	1.2%	10	1.9%	127		1.6%		23	1.7%
Misinfo: Shedding	3	1	0.0%	1	0.0%		0.0%			0.0%		1	0.1%
"Experimental"	261	142	0.5%	52	0.4%	2	0.4%	61		0.8%		4	0.3%
Children	799	386	1.3%	270	2.3%	3	0.6%	130		1.7%		10	0.7%
Myocarditis	29	15	0.0%	5	0.0%		0.0%	9		0.1%			0.0%
Heart	359	228	0.7%	61	0.5%	3	0.6%	57		0.7%		10	0.7%
Masks	2419	1581	5.1%	469	4.0%	15	2.8%	264		3.4%		90	6.7%
Infertility	9	6	0.0%	2	0.0%		0.0%	1		0.0%			0.0%
Mandates	429	280	0.9%	64	0.5%	1	0.2%	67		0.9%		17	1.3%
Natural Immunity	113	70	0.2%	29	0.2%	1	0.2%	12		0.2%		1	0.1%
Efficacy	40	23	0.1%	5	0.0%		0.0%	11		0.1%		1	0.1%
Spike Proteins	26	15	0.0%	6	0.1%	1	0.2%	4		0.1%			0.0%
Delta Variant	1122	631	2.0%	244	2.1%	13	2.4%	176		2.3%		58	4.3%
Race	568	311	1.0%	128	1.1%	10	1.9%	96		1.2%		23	1.7%
Graphene Oxide	29	13	0.0%	4	0.0%		0.0%	9		0.1%		3	0.2%
Door-To-Door "Strike Force"	489	223	0.7%	97	0.8%	11	2.1%	143		1.8%		15	1.1%

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- Tweets here counted only if there is a city location attached
- Magnets and Microchips dropped: most tweets are mocking or sarcastic now
- Graphene Oxide: originated in Spain as a claim that the Pfizer vaccine is comprised of 99%+ toxic graphene oxide
- Door-to-door and "strike force": Vaccine initiatives by the White House causing concern



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High Level View by County July 8 – July 15

County	Allegheny	Beaver	Butler	Cambria	Fayette	Indiana	Somerset	Westmoreland
Overall Vaccine	12034	11	32	23	29	8	10	20
Vaccine Passports	93		2		1			
Not FDA Approved	35							
Boosters	147		1	1				
Misinfo: Shedding	1							
"Experimental"	52							
Children	271							
Myocarditis	5							
Heart	63		1		1			
Masks	470	2	4	6	2	2		3
Infertility	2							
Mandates	64				1			
Natural Immunity	29				1			
Efficacy	5							
Spike Proteins	6							
Delta Variant	251		1	1			1	1
Race	130				1			
Graphene Oxide	4							
Door-To-Door "Strike Force"	99							

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- 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")



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Top Hashtags by City July 8 – July 15

- ❑ 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 (855)	Covid19 (196)	covid19 (229)	covid19 (590)	covid19 (30)	covid19 (510)	covid19 (48)
getvaccinated (239)	Deltavariant (105)	openforall (83) (against vaccine passports and covid regulations)	walgreenspartner (206)	getvaccinated (9)	getvaccinated (100)	Getvaccinated (27)
vaccine (186)	oann (99) (One America News - a far-right, pro-Donald Trump cable channel)	getvaccinated (65)	getvaccinated (121)	deltavariant (6)	deltavariant (53)	Ratherbevaccinated (20)
vaxupphilly (169)	getvaccinated (49)	ratherbevaccinated (35)	BigGovSucks (108)	vaccine (6)	ratherbevaccinated (41)	deltavariant (8)
deltavariant (142)	deltavariant (37) Children (29)	deltavariant (31)	Ratherbevaccinated (99)	gopdeathcult (5)	tuckeriskillingus (31) (against Tucker Carlson's anti-vax rhetoric)	tuckeriskillingus (8)

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Top Hashtags by County July 8 – July 15

- ❑ 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	Luzerne
covid19 (595)	covid19 (2)	maskup (2)	Trumpvirus(4)
WalgreensPartner (206)	delta (2)	ratherbevaccinated (2)	Covid19 (1)
getvaccinated (123)	NoVaccinePassports (1)	Bestrong (1)	Getvaccinatedasap (1)
BigGovSucks (109)	Pleasegetvaccinated (1)	Corona (1)	Ratherbevaccinated (1)
RatherBeVaccinated (101)	StopTheShot (1)	Covid19vaccine (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.



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Top URLs by City July 1 - July 7

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (793)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (103)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (144)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (623)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (24)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (360)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (83)
http://hill.cm/YGxWpPz Pfizer vaccine less effective against delta variant (211)	https://rumble.com/vjph3l-cdc-and-european-regulators-investigate-potentially-deadly-heart-inflammation.html CDC and European regulators investigate potentially deadly heart inflammation (100)	https://www.nottinghampost.com/news/nottingham-news/pryzm-nottingham-owner-confirms-wont-5643766?utm_source=twitter.com&utm_medium=social&utm_campaign=sharebar Pryzm Nottingham owner confirms it won't ask for vaccine passports at doors despite new rules (81)	http://hill.cm/YGxWpPz Pfizer vaccine less effective against delta variant (258)	http://erie.gov/vax (10)	http://Vaccines.gov (64)	https://www.rawstory.com/vaccine-tennessee/ 'Killing kids to own the libs': Americans horrified after Tennessee shuts down all child vaccination programs (14)
http://Vaccines.gov (190)	https://spectator.com.au/2021/07/exclusive-liberal-senator-we-must-reject-vaccine-passports/ EXCLUSIVE Liberal Senator: we must reject vaccine passports (36)	https://rumble.com/vib7ob-adverse-vaccine-reactions-press-conference-recap.html Adverse Vaccine Reactions Press Conference Recap (36)	https://keepingthereceipts.substack.com/p/moral-emptiness-and-epidemiological-stupidity 'Moral emptiness & epidemiological stupidity' (126)	https://www.rawstory.com/madison-cawthorn-vaccine-cpa/ GOP's Madison Cawthorn: Biden may use door-to-door vaccine program to 'take your Bibles' (4)	https://www.rawstory.com/vaccine-tennessee/ 'Killing kids to own the libs': Americans horrified after Tennessee shuts down all child vaccination programs (48)	http://Vaccines.gov (12)
https://nyti.ms/3yMchgg F.D.A. Attaches Warning of Rare Nerve Syndrome to Johnson & Johnson Vaccine (110)	https://rumble.com/vhp8e1-massive-world-renowned-doctor-blows-lid-off-of-covid-vaccine.html MASSIVE: WORLD RENOWNED DOCTOR BLOWS LID OFF OF COVID VACCINE (26)	http://TPUSA.Com/Vax Turning Point USA (anti-vax non-profit)	http://Vaccines.gov (68)	https://www.tennessean.com/story/news/health/2021/07/12/covid-19-tennessee-fired-vaccine-official-michelle-fiscus-fears-state/7945291002/ Tennessee's former top vaccine official: 'I am afraid for my state' (4)	https://www.tennessean.com/story/news/health/2021/07/12/covid-19-tennessee-fired-vaccine-official-michelle-fiscus-fears-state/7945291002/ Tennessee's former top vaccine official: 'I am afraid for my state' (39)	https://www.theguardian.com/music/2021/jul/07/luvenilo-vax-that-thang-up-vaccine-songs Vax That Thang Up: Juvenile turns hip-hop classic into pro-vaccine anthem (11)
https://www.tennessean.com/story/news/health/2021/07/12/covid-19-tennessee-fired-vaccine-official-michelle-fiscus-fears-state/7945291002/ Tennessee's former top vaccine official: 'I am afraid for my state' (73)	https://www.tennessean.com/story/news/health/2021/07/12/covid-19-tennessee-fired-vaccine-official-michelle-fiscus-fears-state/7945291002/ Tennessee's former top vaccine official: 'I am afraid for my state' (26)	https://news.yahoo.com/doctors-alarmed-as-fda-floats-emergency-use-of-covid-vaccine-bypassing-trials-153153624.html Doctors alarmed as FDA floats 'emergency use' of COVID-19 vaccine, bypassing trials (27)	https://nyti.ms/3yMchgg F.D.A. Attaches Warning of Rare Nerve Syndrome to Johnson & Johnson Vaccine (56)	https://www.rawstory.com/vaccine-tennessee/ 'Killing kids to own the libs': Americans horrified after Tennessee shuts down all child vaccination programs (3)	https://nyti.ms/3yMchgg F.D.A. Attaches Warning of Rare Nerve Syndrome to Johnson & Johnson Vaccine (22)	https://nyti.ms/3yMchgg F.D.A. Attaches Warning of Rare Nerve Syndrome to Johnson & Johnson Vaccine (7)

Top URLs by County July 1 - July 7

Allegheny	Butler	Cambria	Fayette	Lackawanna	Luzerne
https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (630)	http://apnews.com/hnhWf0 Pfizer to seek OK for 3rd vaccine dose; shots still protect (1)	https://apnews.com/article/health-government-and-politics-pennsylvania-coronavirus-pandemic-8415287c20a6ac5811f94188678f38c Pennsylvania says it counted 500K duplicate COVID-19 shots (3)	https://www.tennessean.com/story/news/health/2021/07/13/tennessee-halts-all-vaccine-outreach-minors-not-just-covid-19/7928701002/ Tennessee abandons vaccine outreach to minors — not just for COVID-19 (7)	https://cnn.it/3kekBgn Young children will pay the price if enough US adults don't get vaccinated against Covid-19, expert says (2)	https://fox56.com/news/local/delta-variant-poses-more-risk-to-child-en-dactors-advise-vaccinations Delta variant poses more risk to children, doctors advise vaccinations (2)
http://hill.cm/YGxWpPz Pfizer vaccine less effective against delta variant (258)	http://Vaccines.gov (1)	http://nyc.gov/homevaccine All New York City Residents Can Get the COVID-19 Vaccine at Home (1)	http://apnews.com/3x95ebu Ex-Tennessee health official: State backed off vaccine push (1)	https://rumble.com/vjgm9-breaking-discovery-the-actual-contents-inside-pfizer-vials-exposed.html BREAKING DISCOVERY! THE ACTUAL CONTENTS inside Pfizer Vials EXPOSED! (1) ('Scientists have examined the Pfizer Vaccine, and what they found was HORRIFIC...It's Poison!')	https://abc.wj3e9ell Experts differ on need for Johnson & Johnson COVID-19 booster shot (1)
https://keepingthereceipts.substack.com/p/moral-emptiness-and-epidemiological-stupidity 'Moral emptiness & epidemiological stupidity' (126)	https://cbsn.ws/2TEHp2A WHO blasts wealthy nations for "abhorrent" COVID vaccine "nationalism" as global death toll passes 4 million (1)	https://cbsn.ws/3hwzco8 Almost all new COVID-19 cases are among people who have not been vaccinated (1)	https://cnn.it/3wyl2x West Virginia GOP governor: 'If you're not vaccinated, you're part of the problem' (1)	https://www.redvoicemedia.com/2021/07/what-is-graphene-oxide-main-ingredient-in-pfizer-jobvaxvacc-vials-explained-by-medical-expert/ WHAT IS GRAPHENE OXIDE? Main Ingredient in Pfizer, AstraZeneca Vials Explained by Medical Expert (2)	https://www.penncapital.com/blog/wolf-vetoes-bill-banning-pa-primary-schools-colleges-from-requiring-covid-vaccines/ Wolf vetoes bill banning Pa. primary schools, colleges from requiring COVID vaccines (1)
http://Vaccines.gov (69)	https://cbsn.ws/3hwzco8 Fauci says it is "inexplicable" some Americans aren't getting vaccinated despite data (1)	https://nbcnews.com/3e4lpg Students don't need masks at school if they are fully vaccinated, CDC says (1)	https://cbsn.ws/2TxbTmU First nurse to receive COVID-19 vaccine will have her scrubs and vaccine card displayed in Smithsonian (1)	https://apnews.com/article/health-government-and-politics-coronavirus-pandemic-tennessee-f06c72aaf83d9d7143345f70b497be?utm_source=twitter&utm_medium=social&utm_campaign=SocialFlow&utm_term=AP Ex-Tennessee health official: State backed off vaccine push (1)	https://fox56.com/news/local/pa-dept-of-health-612-of-pennsylvanians-age-18-and-older-are-fully-vaccinated PA Dept. of Health: 61.2% of Pennsylvanians age 18 and older are fully vaccinated (1)
https://www.rawstory.com/vaccine-tennessee/ 'Killing kids to own the libs': Americans horrified after Tennessee shuts down all child vaccination programs (58)	https://sharyattkisson.com/2021/07/6-it-already-time-for-your-covid-19-vaccine-booster-shot/ Is it already time for your Covid-19 vaccine booster shot? (1)	https://thehill.com/homenews/sunday-talk-shows/562416-fauci-delta-strain-is-a-nasty-variant Fauci: Delta strain is a 'nasty variant' (1)	https://www.mediamatters.org/newsmax-host-suggests-vaccines-are-against-nature-and-some-diseases-are-supposed-wipe-out Newsmax host suggests vaccines are "against nature," and some diseases are "supposed to wipe out a certain amount of people" (1)	https://nyti.ms/3yMchgg F.D.A. Attaches Warning of Rare Nerve Syndrome to Johnson & Johnson Vaccine (1)	https://www.mediamatters.org/newsmax-host-suggests-vaccines-are-against-nature-and-some-diseases-are-supposed-wipe-out Newsmax host suggests vaccines are "against nature," and some diseases are "supposed to wipe out a certain amount of people" (1)

Top Anti-Vaccine Retweets in PA Tweets

Jen Psaki just said they'll be going door to door to those who haven't been vaccinated. This is getting scarier with each passing day.



Not one person in my family will ever touch the Covid-19 vaccine. That is the decision that we have made, unabashedly, as a family. Medical freedom is an individual right that should NEVER be infringed upon and any person who thinks otherwise has no place in our government.

5:12 PM · Jul 7, 2021 · Twitter for iPhone

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Remember to get vaccinated or a vaccinated person might get sick from the virus they got vaccinated against because you're not vaccinated.

11:53 AM · Jul 7, 2021 · Twitter for Android

A 13 year old boy named Jacob Clynick died in his sleep three days after getting his second dose of the Pfizer vaccine. An autopsy found that his heart was enlarged.

How many kids have to be harmed before we stop experimenting on them?

2:51 PM · Jul 7, 2021 · Twitter Web App



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Children and Vaccines: Both Sides

Dr. Yeadon warns: Children 50 TIMES more likely to die from covid vaccine than from virus -- [Sott.net sott.net /article/455418...](https://sott.net/article/455418)

Replying to @CDCDirector

You are a degenerate hateful criminal. Other countries do not assault children like our depraved, pharma captured CDC. On both masks and vaccine policies. #IgnoreCDC

Compare the thoughtful, child-centric WHO mask guidance versus the aggressive, hateful "experts" urging potential harm to American kids.

World Health Org: No masks on ANY child under age 6, "based on the safety and overall risk of the child."

For those aged 6-11 the parents should be

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The GOP: We're so pro-life, we will kill your children to prove it.

Brett Kelman @BrettKelman · Jul 13

SCOOP: Tennessee Department of Health halts all vaccine outreach to kids – not just for COVID-19, but all diseases – amid pressure from GOP. Staff ordered to remove the agency logo from any documents providing vaccine info to the public, per internal dox. tennessean.com/story/news/hea...

[Show this thread](#)

Replying to @CDCDirector and @bhrenton

When are children under 12 going to be able to be vaccinated @CDCDirector ???

6:09 PM · Jul 8, 2021 · Twitter for Android



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General US Wide Information

- ❑ one survey suggests that
 - ❑ Almost 50% of Americans believe that the CDC is hiding negative effects from COVID-19 vaccines
 - ❑ Almost 25% of Americans believe that the vaccines cause infertility

Republican voters are more likely to believe the CDC is lying

Republican voters are more likely to believe that the vaccines cause infertility

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For More Information

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 - ❑ <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/>

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