

# PA Vaccine Conversations and Misinformation on Twitter

Iuliia Alieva, Dawn Robertson, Dr. Kathleen M. Carley

Vaccine Hesitancy Project Update based on October 1 – October 7, 2021

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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## Big News This Week

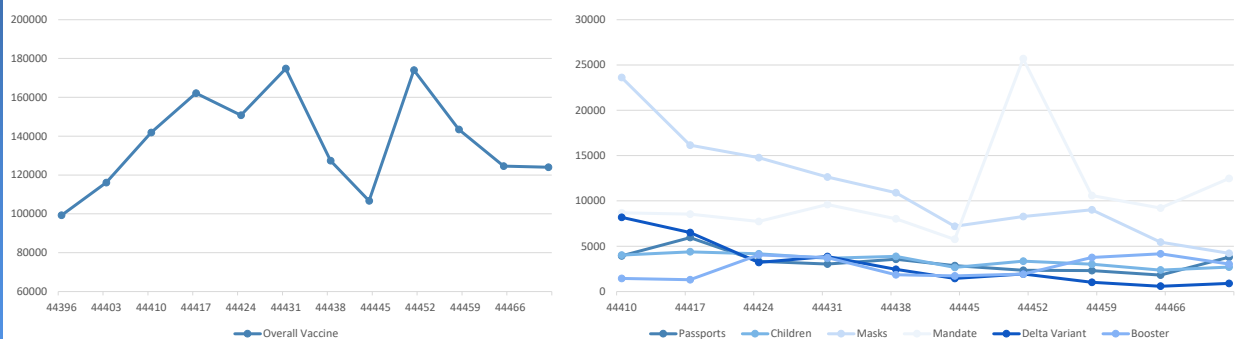
- ❑ Video and messages that were supposedly Pfizer whistleblower implying fetal cells are contained in the Pfizer vaccine.
- ❑ Project Veritas spreading disinformation and surrounded by bots

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## Trends (tweets per week) October 1 – October 7



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## High Level View by City October 1 – October 7

	Total PA	Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
Conversation	Tweets	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	103530	57866	55.9%	24691	23.8%	1008	1.0%	16718	16.1%	3247	3.1%
Vaccine Passports	3778	1139	2.0%	2045	8.3%	22	2.2%	518	3.1%	54	1.7%
FDA Approval	556	246	0.4%	154	0.6%	7	0.7%	131	0.8%	18	0.6%
Boosters	2912	1676	2.9%	584	2.4%	30	3.0%	467	2.8%	155	4.8%
Misinfo: Shedding	79	61	0.1%	10	0.0%			8	0.0%		
"Experimental"	342	182	0.3%	69	0.3%	8	0.8%	76	0.5%	7	0.2%
Children	2139	1112	1.9%	511	2.1%	28	2.8%	403	2.4%	85	2.6%
Myocarditis	368	167	0.3%	66	0.3%	4	0.4%	113	0.7%	18	0.6%
Heart	1550	740	1.3%	471	1.9%	6	0.6%	292	1.7%	41	1.3%
Masks	4154	2251	3.9%	948	3.8%	56	5.6%	608	3.6%	291	9.0%
Thrombosis/VITT	389	216	0.4%	47	0.2%	4	0.4%	114	0.7%	8	0.2%
Mandates	12403	7316	12.6%	2076	8.4%	161	16.0%	2505	15.0%	345	10.6%
Natural Immunity	2776	1701	2.9%	524	2.1%	12	1.2%	489	2.9%	50	1.5%
Efficacy	227	117	0.2%	39	0.2%	1	0.1%	62	0.4%	8	0.2%
Spike Proteins	189	146	0.3%	25	0.1%			17	0.1%	1	0.0%
Delta Variant	1222	650	1.1%	260	1.1%	10	1.0%	241	1.4%	61	1.9%
Race	2197	1148	2.0%	615	2.5%	26	2.6%	334	2.0%	74	2.3%
Ivermectin	388	189	0.3%	92	0.4%	4	0.4%	91	0.5%	12	0.4%
Military	446	231	0.4%	77	0.3%	13	1.3%	110	0.7%	15	0.5%
Breakthrough	1204	848	1.5%	171	0.7%	8	0.8%	149	0.9%	28	0.9%

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Trending conversations:

- Passports
- Myocarditis/heart
- Mandates
- Breakthrough
- Thrombosis/VITT



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## High Level View by County October 1 – October 7

County	Allegheny	Beaver	Butler	Cambria	Fayette	Indiana	Somerset	Westmoreland
Overall Vaccine	25157	32	99	21	14	11	8	98
Vaccine Passports	2047		6					2
FDA	157		1					2
Boosters	600		4	2			1	6
Misinfo: Shedding	10							
"Experimental"	70							
Children	521		1		1			2
Myocarditis	66		3					1
Heart	476		1					
Masks	990	1	9	3	1	1	1	10
Thrombosis/VITT	47	1	1					
Mandates	2111		7	1	2	1	1	13
Natural Immunity	527		3		1			5
Efficacy	39		1					
Spike Proteins	25							
Delta Variant	272		1			1		3
Race	626		1	1				2
Ivermectin	93	1	1					
Military	80							
Breakthrough	173	1	1			1		

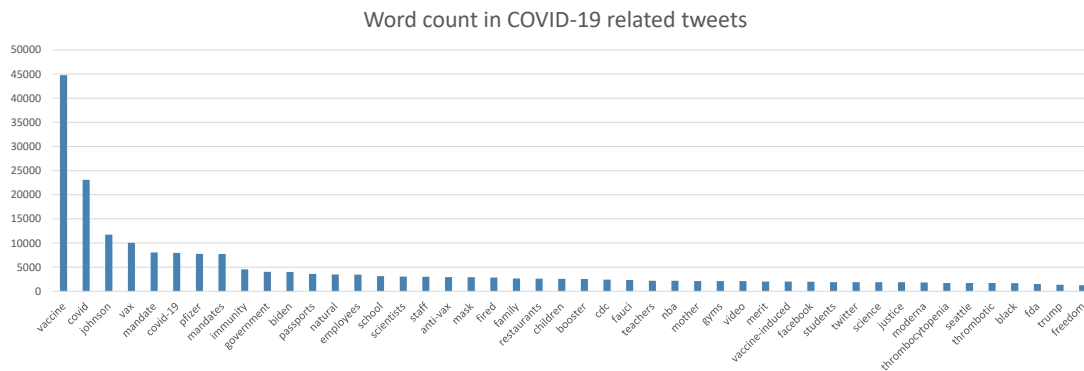
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- Tweets counted here if there is a county location attached
- Race: pulled by one of the vaccine keywords plus at least one other term in ("Black", "African American", "of color", "Latin", "Hispanic", "brown", "eugenic")



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## Top Words Used per Week October 1 – October 7



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## Top Hashtags by County October 1 – October 7

- ❑ 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	Cambria	Fayette	West Moreland
covid19 (561)	covid19 (5)	johnsonliedpeopledied (2)	nba (1)	steelers (5)
exposepfizer (268)	vaccine (3)	icymi (1)	yourbodyyourchoice (1)	covid_19 (2)
steelers (221)	exposepfizer (2)	jasonaldean (1)		covid19 (1)
johnsonliedpeopledied (137)	whatthefox (3)	nba (1)		vaccinepassport (1)
vaccine (127)	antivax (1)	yourbodyyourchoice (1)		vaccineswork (1)

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## Top Hashtags by City October 1 – October 7

- ❑ 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 (1002)	covid19 (204)	covid19 (241)	covid19 (556)	covid19 (35)	covid19 (375)	covid19 (81)
exposepfizer (265)	mandateswork (117)	vaccine (70)	exposepfizer (267)	demvoice1 (26)	exposepfizer (274)	steelers (32)
vaccine (255)	exposepfizer (49)	cdcisbigpharma (51)	steelers (201)	exposepfizer (15)	vaccine (92)	eagles (24)
eagles (231)	getvaccinated (41)	itisnotavaccine (51)	johnsonliedpeople (136)	getvaccinated (9)	johnsonliedpeople (78)	nba (23)
vaxupphilly (228)	vaccine (40)	exposepfizer (50)	vaccine (124)	johnsonliedpeople (7)	nomandates (51)	getvaccinated (22)

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## Top URLs by County October 1 – October 7

Allegheny	Butler + Beaver	Cambria	Fayette	West Moreland
<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (659)	<a href="https://www.dkpittsburghsports.com/2021/10/03/jake-guentzel-covid-penguins-positive-th">https://www.dkpittsburghsports.com/2021/10/03/jake-guentzel-covid-penguins-positive-th</a> Penguins increase precautions after Guentzel tests positive for COVID-19 (2)	<a href="https://abcn.ws/3AgJQY4">https://abcn.ws/3AgJQY4</a> More Americans died of COVID this year than all of 2020 (1)	<a href="http://hill.cm/vj45fg5">http://hill.cm/vj45fg5</a> CDC 'strongly' urges pregnant people to get COVID-19 vaccine (1)	<a href="https://www.aol.com/delta-tearing-states-despite-high-115328590-144309086.html">https://www.aol.com/delta-tearing-states-despite-high-115328590-144309086.html</a> Virus surge hits New England despite high vaccination rates (2)
<a href="http://dlvr.it/S92TSY">http://dlvr.it/S92TSY</a> 'Black Panther: Wakanda Forever' Star Letitia Wright Reportedly Spreading Anti-Vax Views On The Set Of Marvel's Sequel (241)	<a href="https://www.sru.edu/news/100521a">https://www.sru.edu/news/100521a</a> SRU incentivizes students to get COVID-19 vaccine with free parking, tuition and presidential tattoo (2)	<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (1)	<a href="http://hill.cm/xzUnvn4">http://hill.cm/xzUnvn4</a> Fauci: 'I agree' with Newsom vaccine mandate for California students (1)	<a href="http://hill.cm/2hQI6pR">http://hill.cm/2hQI6pR</a> Study shows Pfizer COVID-19 vaccine effectiveness declines after six months (1)
<a href="https://trib.al/JMAfeua">https://trib.al/JMAfeua</a> He Ran Over BLM Protesters—but Apparently That's Not a Crime (123)	<a href="https://www.tamz.com/2021/10/01/joe-rogan-joe-biden-covid-vaccine-booster-shot-fake-podcast/?adid=social-twa">https://www.tamz.com/2021/10/01/joe-rogan-joe-biden-covid-vaccine-booster-shot-fake-podcast/?adid=social-twa</a> JOE ROGAN I THINK JOE BIDEN'S A FAKER... Doesn't Believe POTUS Got Live Booster Shot (2)	<a href="https://wjactv.com/news/coronavirus/pa-health-leaders-get-flu-vaccine-as-influenza-may-come-back-with-a-vengeance">https://wjactv.com/news/coronavirus/pa-health-leaders-get-flu-vaccine-as-influenza-may-come-back-with-a-vengeance</a> Pa. health leaders: Get flu vaccine as influenza may come back with a vengeance (1)	<a href="https://slate.com/human-interest/2021/10/red-covid-southern-vaccine-resistance.html">https://slate.com/human-interest/2021/10/red-covid-southern-vaccine-resistance.html</a> The South's Resistance to Vaccination Is Not As Incomprehensible As It Seems (1)	<a href="https://bit.ly/3AXtLrH">https://bit.ly/3AXtLrH</a> Hundreds Of United Airlines Staff Hand In Covid Vaccination Proof After Company Threatens To Fire Them (1)
<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (96)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (2)	<a href="https://www.nytimes.com/2021/10/06/health/malaria-vaccine-who.html?referringSource=articleShare">https://www.nytimes.com/2021/10/06/health/malaria-vaccine-who.html?referringSource=articleShare</a> 'Historic Event': First Malaria Vaccine Approved by W.H.O. (1)	<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (1)	<a href="https://nyti.ms/3A9krPX">https://nyti.ms/3A9krPX</a> Inside United Airlines' Decision to Mandate Coronavirus Vaccines (1)
<a href="http://tmz.me/yNaBU5a">http://tmz.me/yNaBU5a</a> NBA STAR MICHAEL PORTER JR. REFUSES TO GET COVID VACCINE! Don't Feel Comfortable! (87)	<a href="http://apne.ws/FEwuatE">http://apne.ws/FEwuatE</a> Justice Kavanaugh tests positive for COVID, has no symptoms (1)	<a href="https://www.wpxi.com/news/trending/missouri-executes-ernest-johnson-1994-triple-murder-despite-intellectual-disability/YVnKLCX85HONCPRO3QQXIP5TJ/">https://www.wpxi.com/news/trending/missouri-executes-ernest-johnson-1994-triple-murder-despite-intellectual-disability/YVnKLCX85HONCPRO3QQXIP5TJ/</a> Missouri executes Ernest Johnson for 1994 triple murder despite intellectual disability (1)	<a href="https://www.curbed.com/2021/10/anti-vaccine-mandate-protest-new-york-city.html">https://www.curbed.com/2021/10/anti-vaccine-mandate-protest-new-york-city.html</a> Marchers Attack Coronavirus Testing Station in Union Square (1)	<a href="https://m.theepochtimes.com/nyc-restauranters-business-down-40-to-60-percent-due-to-vaccine-mandate_4025794.html">https://m.theepochtimes.com/nyc-restauranters-business-down-40-to-60-percent-due-to-vaccine-mandate_4025794.html</a> NYC Restauranters: Business Down 40 to 60 Percent Due to Vaccine Mandate (1)

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## Top URLs by City October 1 – October 7

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
<a href="https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/">https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/</a> COVID Outbreak Sparked by Fully Vaccinated Patient Challenges Vaccine-Induced Herd Immunity Theory (1078)	<a href="https://www.supremecourt.gov/DocketPDF/21/21A50/194220/20210930135258574_Mancalco%20v%20NYCH%20Dept%20of%20Education%20-%20Emergency%20Application.pdf">https://www.supremecourt.gov/DocketPDF/21/21A50/194220/20210930135258574_Mancalco%20v%20NYCH%20Dept%20of%20Education%20-%20Emergency%20Application.pdf</a> "Is an emergency injunction warranted to stop the Executive Order from violating the substantive due process and equal protection rights of public-school employees, thereby permitting all New York City public-school teachers to continue to educate over one-million students?" (194)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (114)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (659)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (9)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (342)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (24)
<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (528)	<a href="https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331">https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331</a> Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (78)	<a href="https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/">https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/</a> COVID Outbreak Sparked by Fully Vaccinated Patient Challenges Vaccine-Induced Herd Immunity Theory (49)	<a href="http://dlvr.it/592T5Y">http://dlvr.it/592T5Y</a> Black Panther: 'Wakanda Forever' Star Letitia Wright Reportedly Spreading Anti-Vax Views On The Set Of Marvel's Sequel (241)	<a href="https://bit.ly/3AXUrt1">https://bit.ly/3AXUrt1</a> Hundreds Of United Airlines Staff Hand In Covid Vaccination Proof After Company Threatens To Fire Them (4)	<a href="https://www.theatlantawpundit.com/2021/09/fully-vaxxed-former-cnn-contributor-marc-lamont-hill-suffers-heart-attack-hospitalized-blood-clots-blasts-nba-player-critical-covid-vax/?utm_source=Twitter&amp;utm_medium=PostTopSharingButtons&amp;utm_campaign=websharebar">https://www.theatlantawpundit.com/2021/09/fully-vaxxed-former-cnn-contributor-marc-lamont-hill-suffers-heart-attack-hospitalized-blood-clots-blasts-nba-player-critical-covid-vax/?utm_source=Twitter&amp;utm_medium=PostTopSharingButtons&amp;utm_campaign=websharebar</a> Fully Vaxxed Former CNN Contributor Marc Lamont Hill Suffers Heart Attack and is Hospitalized with Blood Clots – Blasts NBA Player Critical of Covid Vax (76)	<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (20)
<a href="http://tmz.me/yNa8Usa">http://tmz.me/yNa8Usa</a> NBA STAR MICHAEL PORTER JR. REFUSES TO GET COVID VACCINE! Don't Feel Comfortable (216)	<a href="http://hill.cm/55sc4Ct">http://hill.cm/55sc4Ct</a> Study shows Pfizer COVID-19 vaccine effectiveness declines after six months (24)	<a href="http://tmz.me/yNa8Usa">http://tmz.me/yNa8Usa</a> NBA STAR MICHAEL PORTER JR. REFUSES TO GET COVID VACCINE! Don't Feel Comfortable (47)	<a href="https://trib.al/IMAFeu4">https://trib.al/IMAFeu4</a> He Ran Over BLM Protesters—but Apparently That's Not a Crime (123)	<a href="https://childrenshealthdefense.eu/eu-issues/pfizer-does-illegal-experiments-on-orphan-babies-in-poland-spain-finland-and-the-us/">https://childrenshealthdefense.eu/eu-issues/pfizer-does-illegal-experiments-on-orphan-babies-in-poland-spain-finland-and-the-us/</a> Is Pfizer Doing Illegal Experiments on Orphan Babies in Poland, Spain, Finland and the US? Questions to the Polish senate, the world needs answers. (4)	<a href="http://hill.cm/55sc4Ct">http://hill.cm/55sc4Ct</a> Study shows Pfizer COVID-19 vaccine effectiveness declines after six months (54)	<a href="http://abcn.ws/3JlRcnb">http://abcn.ws/3JlRcnb</a> Hundreds of hospital staffers fired or suspended for refusing COVID-19 vaccine mandate (17)
<a href="https://teammuckercarlson.com/news/pfizer-and-astrazeneca-paid-lobbyists-to-direct-australia-leaders-to-push-vaccine-mandates-former-australian-member-of-parliament-says/">https://teammuckercarlson.com/news/pfizer-and-astrazeneca-paid-lobbyists-to-direct-australia-leaders-to-push-vaccine-mandates-former-australian-member-of-parliament-says/</a> Pfizer And AstraZeneca Paid Lobbyists To Direct Australia's Leaders To Push Vaccine Mandates, Former Australian Member Of Parliament Says (200)	<a href="https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/">https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/</a> COVID Outbreak Sparked by Fully Vaccinated Patient Challenges Vaccine-Induced Herd Immunity Theory (23)	<a href="https://www.bitchute.com/video/nP44-tcDUvm9/">https://www.bitchute.com/video/nP44-tcDUvm9/</a> DR. ZEV ZELENKO EXCLUSIVE: STEW PETERS 1-ON-1 EXPLOSIVE INTERVIEW EXPOSES COVID LIES!   STEW PETERS (43)	<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (93)	<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (4)	<a href="https://www.reuters.com/world/asia-pacific/australian-state-corruption-watchdog-says-is-investigating-nsw-premier-2021-10-01/">https://www.reuters.com/world/asia-pacific/australian-state-corruption-watchdog-says-is-investigating-nsw-premier-2021-10-01/</a> Australia's NSW state premier resigns over corruption probe amid COVID-19 battle (46)	<a href="http://tmz.me/yNa8Usa">http://tmz.me/yNa8Usa</a> NBA STAR MICHAEL PORTER JR. REFUSES TO GET COVID VACCINE! Don't Feel Comfortable (15)
<a href="https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts">https://thehill.com/business-a-lobbying/business-a-lobbying/574387-nba-struggles-with-vocal-vaccine-holdouts</a> NBA struggles with vocal vaccine holdouts (179)	<a href="https://www.covid-datascience.com/post/interpreting-vaers-what-is-the-expected-background-death-rate-for-the-usa-vaccinated-population/">https://www.covid-datascience.com/post/interpreting-vaers-what-is-the-expected-background-death-rate-for-the-usa-vaccinated-population/</a> Interpreting VAERS: What is the expected background death rate for the USA vaccinated population? (19)	<a href="https://trialsitenews.com/university-of-wi-madison-public-health-study-indicates-vaccinated-people-may-spread-delta-based-sars-cov-2-as-much-as-the-unvaccinated/">https://trialsitenews.com/university-of-wi-madison-public-health-study-indicates-vaccinated-people-may-spread-delta-based-sars-cov-2-as-much-as-the-unvaccinated/</a> University of WI-Madison & Public Health Study Indicates Vaccinated People May Spread Delta-based SARS-CoV-2 as Much as the Unvaccinated (37)	<a href="https://www.theepochtimes.com/west-virginia-governor-no-chance-of-covid-vaccine-mandate-for-students_4029619.html?utm_medium=social&amp;utm_source=twitter&amp;utm_campaign=digitalpush">https://www.theepochtimes.com/west-virginia-governor-no-chance-of-covid-vaccine-mandate-for-students_4029619.html?utm_medium=social&amp;utm_source=twitter&amp;utm_campaign=digitalpush</a> West Virginia Governor: 'No Chance' of COVID-19 Vaccine Mandate for Students (86)	<a href="https://www.midrapolitics.com/articles/whistleblower-shows-nearly-50k-medicare-patients-died-after-vaccine-fact-check-this-raw-data/">https://www.midrapolitics.com/articles/whistleblower-shows-nearly-50k-medicare-patients-died-after-vaccine-fact-check-this-raw-data/</a> WHISTLEBLOWER SHOWS NEARLY 50K MEDICARE PATIENTS DEAD AFTER VACCINE "FACT CHECK THIS" RAW DATA (4)	<a href="https://www.tmz.com/2021/10/01/joe-rogan-joe-biden-covid-vaccine-boosters-shut-fake-podcast/?adid=social-twa">https://www.tmz.com/2021/10/01/joe-rogan-joe-biden-covid-vaccine-boosters-shut-fake-podcast/?adid=social-twa</a> JOE ROGAN THINK JOE BIDEN'S A FAKER... Doesn't Believe POTUS Got Live Booster Shot (44)	<a href="https://www.timesonline.com/story/sports/high-school/2021/09/30/covid-19-once-again-brings-uncertainty-wpial-football-season-beaver-county-times-coronavirus-vaccine/8415751002/">https://www.timesonline.com/story/sports/high-school/2021/09/30/covid-19-once-again-brings-uncertainty-wpial-football-season-beaver-county-times-coronavirus-vaccine/8415751002/</a> 'Survival of the fittest': COVID-19 once again brings uncertainty to WPIAL football season (11)

11

## Top Influencers by County October 1 – October 7

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

Allegheny	Butler	Cambria	Fayette	West Moreland	Beaver	Somerset
socialistboomer	TaylorHaasePGH	CrispinHavener	wolverine66	MeghanKDKA	colin_dunlap	markscheig
johnis44 (high bot score)	TheDanKingerski	Antagonizer11	mommydog67	MartyGriffinKD	warriors_cv	_elizabethhmckay
KDKA	JDipaola_Trib	krispykrunch24	ShariseJMoore	j_a155	TribLiveHSSN	Derek_Thomas33
JosephJFlynn1	WorldExposureWB	brookbrowsers0319	mollyalester	AJWPIAL	MGreen3054	John37298511
TotalSportsEnt	KatelynsWTAE	MilesP1965	BroncoBaby10 (high bot score)	ThompsonFoto12	maranjen	PFennen

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

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## Top Influencers by City October 1 – October 7

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

Philadelphia	Chester	Norristown	Pittsburgh	Erie	Allentown/ Bethlehem	Other
ke11ybender	RMConservative	patriottakes	socialistboomer	straymagnet1 (high bot score)	CNN	pfizer
KeithOlbermann	CureHipHop (high bot score)	TJ2020landslide (high bot score)	johnis44 (high bot score)	ETNreisenweber	marissa_larkin	JackPosobiec
catturd2		UncommonSensePA	KDKA	PrezLives2022	_C3NSOR3D	graceisforyou
ReallyAmerican1	ariel_jones411	Flattielover (high bot score)	JosephFlynn1	DBChirpy (high bot score)	crazyjo43424351	RobertKennedyJr
BackAgainPeeps	ReportsDaNews	Wyn4You	TotalSportsEnt	sebald_j (high bot score)	drccraigwax	GovernorTomWolf

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

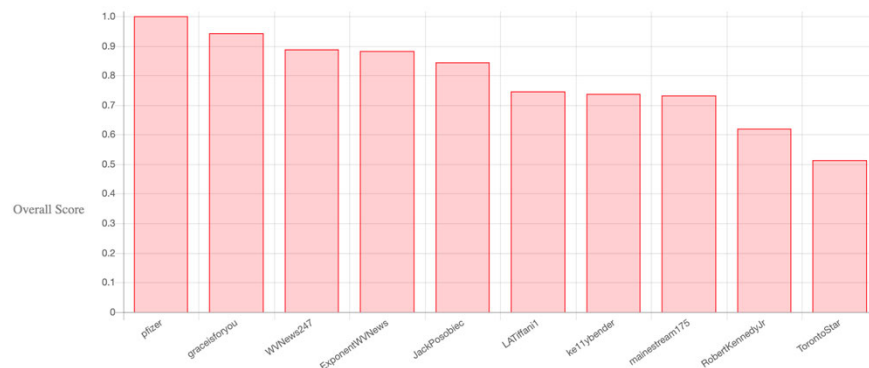
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## Analysis of Tweeters - Super Spreaders

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



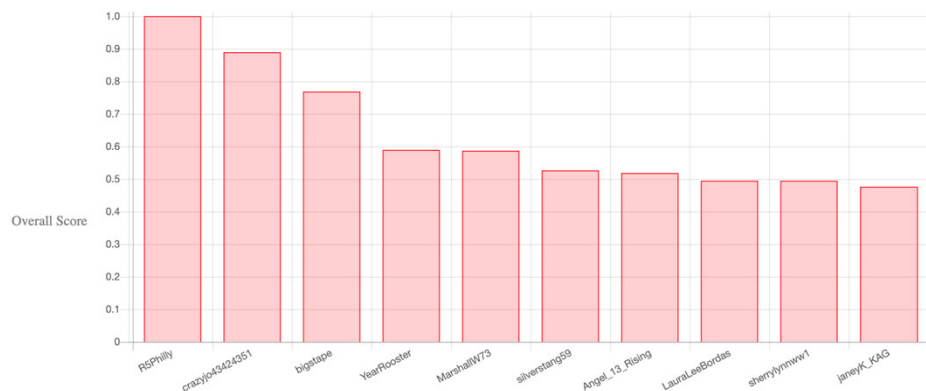
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## Analysis of Tweeters - Super Friends

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



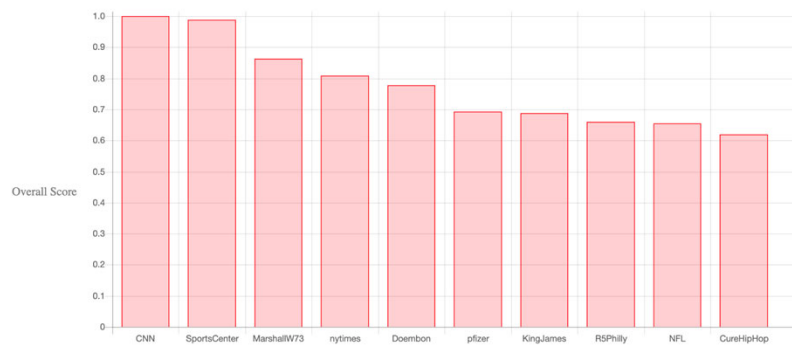
1/11/2022



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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.

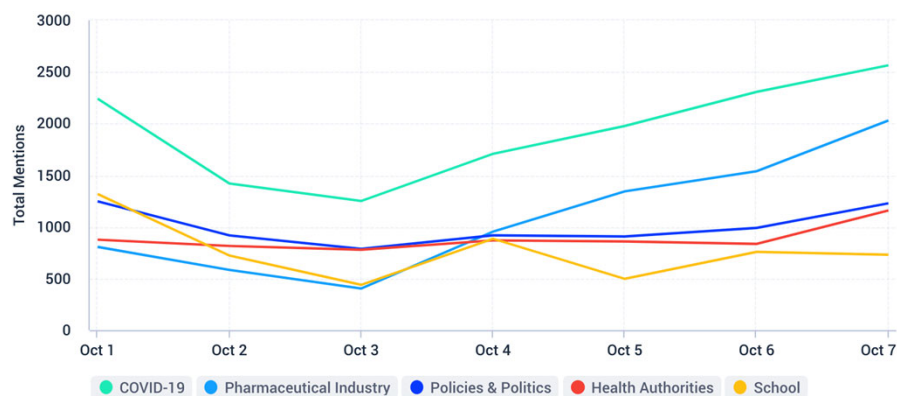
Agent Label	Value
<a href="#">pfizer</a>	2,400
<a href="#">JackPosobiec</a>	1,306
<a href="#">JludahlIsaac</a>	827
<a href="#">GovernorTomWolf</a>	659
<a href="#">CDCgov</a>	614
<a href="#">ShannonBream</a>	460
<a href="#">Money23Green</a>	431
<a href="#">GavinNewsom</a>	428
<a href="#">POTUS</a>	419
<a href="#">Kinglames</a>	412

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## General PA Conversation October 1 – October 7

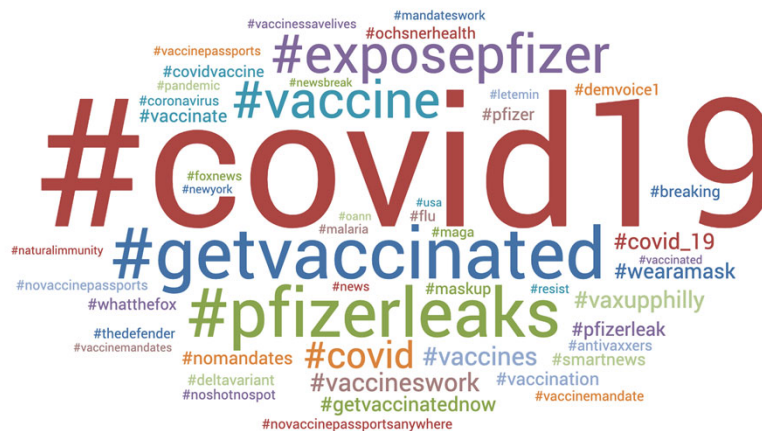


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## PA Hashtag Cloud October 1 – October 7



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## Trending PA stories October 1 – October 7

- ❑ [nytimes.com](https://www.nytimes.com) - A 'Historical Event': W.H.O. Approves the First Malaria Vaccine (235 Mentions)
- ❑ [obits.oregonlive.com](https://www.obits.oregonlive.com) - Jessica Berg Wilson Obituary (2021) The Oregonian (206 Mentions)
- ❑ [lifesitenews.com](https://www.lifesitenews.com) - Ontario doctor resigns over forced vaccines, says 80% of ER patients with mysterious issues had both shots - LifeSite (163 Mentions)
- ❑ [nytimes.com](https://www.nytimes.com) - U.S. Coronavirus Death Toll Nears 700,000 Despite Wide Availability of Vaccines (131 Mentions)
- ❑ [baltimoresun.com](https://www.baltimoresun.com) - Court records: Man murdered his pharmacist brother in Ellicott City home for 'killing people with the COVID shot,' (97 Mentions)
- ❑ [foxnews.com](https://www.foxnews.com) - Sen. Ron Johnson: There is not an FDA approved COVID vaccine in the US (93 Mentions)

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## Trending PA tweets October 1 – October 7

1  **Film The Police LA**  
[@filmthepolicela](#)

Hollywood Blvd, Saturday, 11:22 AM: ANTI-VAXX PROTESTER:  
 Do you see all of these homeless people around. Are they  
 dead in the street with COVID? Hell no. Why? HOMELESS  
 PERSON (walking by): Because I'm vaccinated you dumb  
 fuck. <https://t.co/rPskpOqtKs>

**405**  
 Retweets

On the anniversary of her transition, remember that HeLa cells  
 were used for studying the effects of SARS-CoV replication to  
 develop the COVID vaccine. Rest well, Henrietta Lacks.  
<https://t.co/LZTwliBJXS>

**177**  
 Retweets

BREAKING VERITAS: @Pfizer Scientists: 'Your Antibodies are  
 Probably Better than the Vaccination'  
<https://t.co/cAfeHekQDB>

**181**  
 Retweets

This vaccine shit is crazy to me. In April 2020 the world was  
 praying for a miracle cure. That jawn was created and niggas  
 said... nahhhh

**173**  
 Retweets

5  **The New York Times**  
[@nytimes](#)

Breaking News: The WHO approved the first ever malaria  
 vaccine, which could save tens of thousands of children in  
 sub-Saharan Africa. The quest for this vaccine has been  
 underway for a hundred years, a WHO official said, and is a  
 "historic event." <https://t.co/i1hcYBhbvb>  
<https://t.co/wTNg6xWmzU>

**153**  
 Retweets

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21

## Trending PA tweets October 1 – October 7

What's disturbing to me is one of the Pfizer scientists said the  
 idea is to make life so inconvenient for the unvaxxed that  
 they'll eventually cave and get it. But, he admits natural  
 immunity is stronger and knows the dangers of the vax. How  
 do these people sleep at night?

**135**  
 Retweets

I just saw an early release of @projectveritas whistleblower  
 video that is about to be released and OMG does every person  
 who was fired and not granted religion exception for the  
 vaccine mandate need to see it. This is genuinely explosive.

**119**  
 Retweets

facebook is down bc aunt debbie was about to finish her  
 vaccine research and blow this whole thing wide open

**124**  
 Retweets

9  **Senator Ron Johnson**  
[@senronjohnson](#)

.@POTUS says this is a pandemic of the unvaxxed. Data from  
 England show 63% of Delta deaths in last 7.5 months were  
 fully vaxxed. Why won't @CDCgov share US data with the  
 American people? What is the justification of mandates and  
 refusal to recognize natural immunity?  
<https://t.co/p3hA1eTiWZ>

**117**  
 Retweets

10  **MeidasTouch.com**  
[@meidastouch](#)

Vaccine mandates are making teachers who don't believe in  
 science quit, nurses who don't believe in medicine resign, and  
 police officers who don't believe in public safety retire. I call  
 that a great side effect.

**113**  
 Retweets

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22

## Top PA Twitter Authors October 1 – October 7

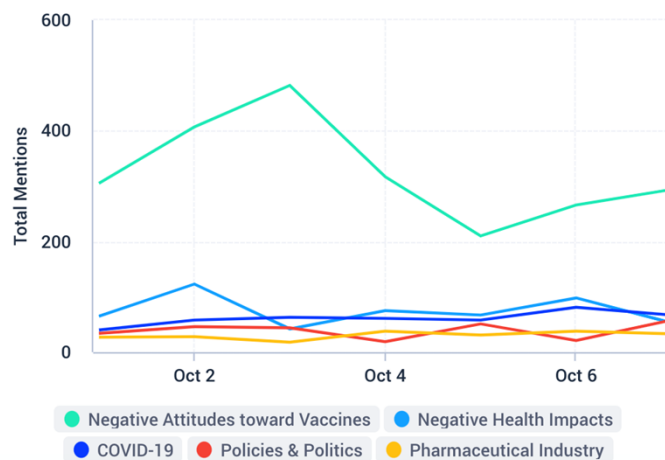
By mentions	By influence
@doembon	@questlove
@iridescentashes	@6abc
@kirkturner777	@malcolmnance
@cdekeane	@fox29philly
@erin_vmd	@accuweather
@mishao1989	@nbcphiladelphia
@mbfrat	@brithume
@tsmarcella321	@phillyinquirer
@btilma	@jaysonst
@pjmugs	@wpxi

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23

## Negative Attitudes October 1 – October 7

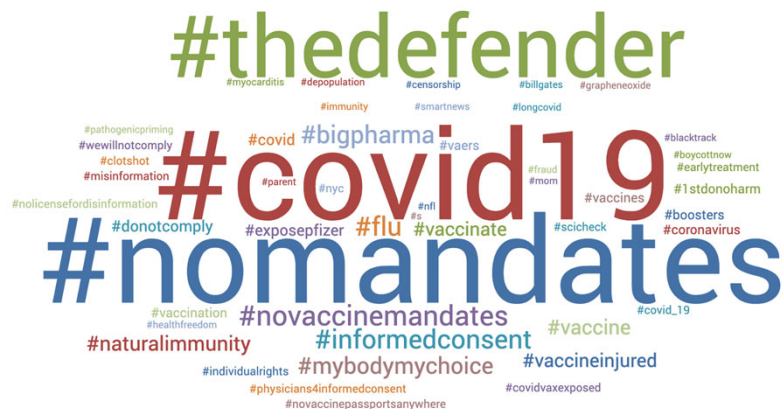


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## Negative Hashtag Cloud October 1 – October 7



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## Trending negative PA stories October 1 – October 7

- ❑ [obits.oregonlive.com](https://www.obits.oregonlive.com) - Jessica Berg Wilson Obituary (2021) The Oregonian (99 Mentions)
- ❑ [thepostmillennial.com](https://thepostmillennial.com) - Twitter tags obituary of woman 'misleading' who reportedly died from 'vaccine-induced thrombotic thrombocytopenia' (50 Mentions)
- ❑ [childrenshealthdefense.org](https://childrenshealthdefense.org) - Sign Up for our Free News and Updates! (27 Mentions)
- ❑ [forbes.com](https://forbes.com) - Hundreds Of United Airlines Staff Hand In Covid Vaccination Proof After Company Threatens To Fire Them (26 Mentions)
- ❑ [childrenshealthdefense.org](https://childrenshealthdefense.org) - Exclusive: Woman Injured by COVID Vaccine Pleads With Health Agencies for Help, as Local News Agency Kills Story After Pressure From Pfizer (24 Mentions)
- ❑ [sciencedirect.com](https://sciencedirect.com) - A Report on Myocarditis Adverse Events in the U.S. Vaccine Adverse Events Reporting System (VAERS) in Association with COVID-19 Injectable Biological Pro (14 Mentions)
- ❑ [medrxiv.org](https://medrxiv.org) - Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity: reinfections versus breakthrough infections (13 Mentions)

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## Trending Negative PA tweets October 1 – October 7

Seattle, WA — Jessica Berg Wilson, an "exceptionally healthy and vibrant 37-year-old young mother with no underlying health conditions," passed away from COVID Vaccine-Induced Thrombotic Thrombocytopenia. She did not want to get vaccinated. RIP 🕊️ <https://t.co/0gz98R1YW4>  
<https://t.co/pF10pk2nDr>

92  
Retweets

In California you can get paid to not put a needle full of heroin in your arm but you can get fired from your job for not putting in a needle full of an experimental vaccine.

50  
Retweets

2  **Marjorie Taylor Greene** 🇺🇸  
[@mtgreenee](https://twitter.com/mtgreenee)

We are on the verge of a supply chain crisis. Ports are backlogged more than 4 weeks and jammed with ships waiting with supplies. We have a severe truck driver shortage. This issue is worldwide. Vaccine mandates are going to fire critically needed workers. [#NoMandates](#)

73  
Retweets

🙄 when is enough going to be enough? The vaccine is obviously not for everyone. Check the Vaers report. I know someone who passed away from the vaccine as well. Healthy 56 year old woman. The vaccine took her out in 3 days. These Biden mandates are murdering these people.

49  
Retweets

15 cases didn't go down to 0. it wasn't contained. it wasn't a hoax. it didn't disappear like a miracle. it wasn't gone by Easter. warm weather didn't kill it. hydroxychloroquine was a bust. horse paste is poison. just get the fucking vaccine and don't listen to morons

44  
Retweets

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\*support for vaccines may appear in this section if the comments on that post were expressing criticism of that post.



27

## Trending Negative PA tweets October 1 – October 7

Did you know: Congress is exempt from the national vaccine mandates? Which is all well and good, I just don't understand how the people we elected to serve us get freedoms denied the rest of us.

44  
Retweets

HOLY HELL—Anti-Vax Lieutenant Governor of Idaho briefly took power as Acting Governor without permission to block all [#COVID19](#) vaccine & testing mandates, while Governor was briefly away. [@GovernorLittle](#) rescinded Lt Governor [@JaniceMcGeachin](#)'s illegal order just 8 minutes after!  
<https://t.co/nSKm7SgySb>

40  
Retweets

7  **Dr. Joseph Mercola**  
[@mercola](https://twitter.com/mercola)

The National Vaccine Information Center's YouTube channel was quietly deleted, yesterday. Ten years of work from this 40 yr old organization was removed, without a single warning.

42  
Retweets

This is an important point about the "mass quitting" narrative around vax requirements. At [@united](#), only 1% were listed for termination because they didn't get vax'ed ... and then nearly half of those people got vax'ed. Only 300 refusers out of 60,000+

35  
Retweets

2/ In front of a school, shouting at kids & parents that vaccination is "rape"... It's awful. Some small, hateful anti-vaxx groups, like this one in LA, are starting to look a \*lot\* like the Westboro Baptist Church. <https://t.co/hi7mHwnQ9>

28  
Retweets

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28

## Top PA Negative Twitter Authors October 1 – October 7

By mentions	By influence
@doembon	@chuckwendig
@cdekeane	@pennlive
@pjmugs	@factcheckdotorg
@richrobby	@ryanlcooper
@jsm2334	@patriotnews
@reneepatriot	@yoda
@dorothymontgom4	@pahealthdept
@smithsl07	@chris_1791
@tdbgolfer	@ameshaa
@williamssharona	@bigjoebastardi

\*support for vaccines may appear in this section if the comments on that post were expressing criticism of that post.

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## Trending Posts on Facebook October 1 – October 7

WPXI-TV Pittsburgh  
Oct 6, 2021 at 6:03 PM

"Misinformation is literally killing people," Allegheny County Health Department's director said today: [wpxi.tv/3jW5jz](https://wpxi.tv/3jW5jz)

**COVID-19 DEATH RATE IN ALLEGHENY COUNTY HIGHEST SINCE APRIL**

782 903 130

Pittsburgh Pirates  
Oct 3, 2021 at 6:09 PM

In a weird year of COVID protocols, limited capacity and more, you hung with us. Thank you for everything, Bucco Nation!

5.4K 883 210

WPXI-TV Pittsburgh  
Oct 5, 2021 at 10:46 AM

His wife sued to force a hospital to administer ivermectin to him as he battled COVID-19.

Ohio man at center of legal battle over ivermectin treatment for COVID-19  
[WPXI.COM](https://wpxi.com)

400 789 72

WPXI-TV Pittsburgh  
Oct 6, 2021 at 8:30 PM

A Colorado hospital system confirmed Tuesday that it is denying transplants to people who are not vaccinated against COVID-19.

Hospital system denying transplants to unvaccinated patients  
[WPXI.COM](https://wpxi.com)

1.6K 1.1K 596

WTAE-TV Pittsburgh  
Oct 7, 2021 at 11:00 PM

A Colorado woman has been denied a kidney transplant because she won't be vaccinated against COVID-19 due to her religious views.

Colorado woman who won't get vaccinated denied kidney transplant  
[WTAE.COM](https://wtae.com)

625 702 150

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30



## Trending Posts on Facebook October 1 – October 7

**WPXI-TV Pittsburgh** Oct 4, 2021 at 9:12 AM  
As new COVID-19 variants emerge, the CEO of BioNTech says a new vaccine formula will probably be needed.  
**Coronavirus: BioNTech CEO says new vaccine will be needed in 2022**  
WPXI.COM  
627 374 186

**WPXI-TV Pittsburgh** Oct 8, 2021 at 4:30 AM  
Employees who are not fully vaccinated by Dec. 8 will face an unpaid suspension.  
**Coronavirus: IBM requires all US employees to be fully vaccinated by Dec. 8**  
WPXI.COM  
690 340 39

**WPXI-TV Pittsburgh** Oct 3, 2021 at 4:15 PM  
With the holidays approaching rapidly, the U.S. Centers for Disease Control and Prevention on Sunday issued a list of recommendations intended to minimize COVID-19 exposure as Americans plan th...  
**Coronavirus: CDC issues holiday guidelines amid ongoing COVID-19**  
WPXI.COM  
720 456 71

**KDKA-TV | CBS Pittsburgh** Oct 3, 2021 at 9:30 PM  
"No chance." West Virginia Governor Jim Justice said that once COVID-19 vaccinations are approved for school-aged children, he will not impose a mandate.  
**West Virginia Governor Jim Justice Says He Won't Mandate COVID-19**  
PITTSBURGH.CBSLOCAL.COM  
875 226 28

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**CASOS**  
Carnegie Mellon University

31

## Trending Posts on Instagram October 1 – October 7

**BIDEN RESTARTS FLYING AFGHANS TO PENNSYLVANIA AFTER MEASLES OUTBREAK ON U.S. BASES**  
wearebreitbart Oct 6, 2021 at 10:33 PM  
President Joe Biden has restarted flying thousands of Afghans to the United States, through the Philadelphia International Airport in Pennsylvania, after flights had been halted due to a measles outbreak by Afghans on multiple U.S. military bases. Afghans will now resume boarding

**"It's Killing Our Kids" Survivors Speak Out About Fake Vax Cards**  
bischvets Oct 1, 2021 at 3:45 PM  
Parents share their trauma amidst an outbreak of counterfeit vax certificates, the highly-illegal cards linked to countless recent COVID deaths.  
W // medical terrorism - - - This is a rally unfortunate story out of Pennsylvania  
548

**His Dad Was Vaccinated And His Son Was Not. He Lost Them Both To Covid-19**  
theneighborhoodtalk Oct 6, 2021 at 7:43 PM  
THAT Staff: @jthegood  
18.2K 1.4K

**JUST SAY NO TO MEDICAL MANDATES FOR OUR KIDS!**  
teapartypatriots Oct 7, 2021 at 3:14 PM  
Gov. Tom Wolf said the only way mask mandates will be lifted in Pennsylvania schools is if children get the vaccine.  
999 49

**See what happens when you let the government mandate medical procedures? First, it's just a vaccine... then it's mandatory vasectomy! Guys... best hide them puppies! Pennsylvania wants to take your manhood by age 40 or after your 3rd baby! It won't stop here. Mandatory hysterectomies and abortions on the way! Then we may as well get into mandatory organ harvesting for the greater good! Anyone ready to take the power back yet? Can't say I didn't warn you! See less**  
La\_baker\_13 Oct 4, 2021 at 9:32 AM  
622 26

**Yesterday I visited Hamilton Health Center in Harrisburg as they prepare for a COVID-19 vaccine clinic this weekend. If you want to get vaccinated, visit the clinic between 10 a.m. and 2 p.m. Saturday. Use the link in my profile to find other vaccine locations in Pennsylvania. Thank you for doing your part to protect yourself and your community. See less**  
governortomwolf Oct 7, 2021 at 2:00 PM  
418 114

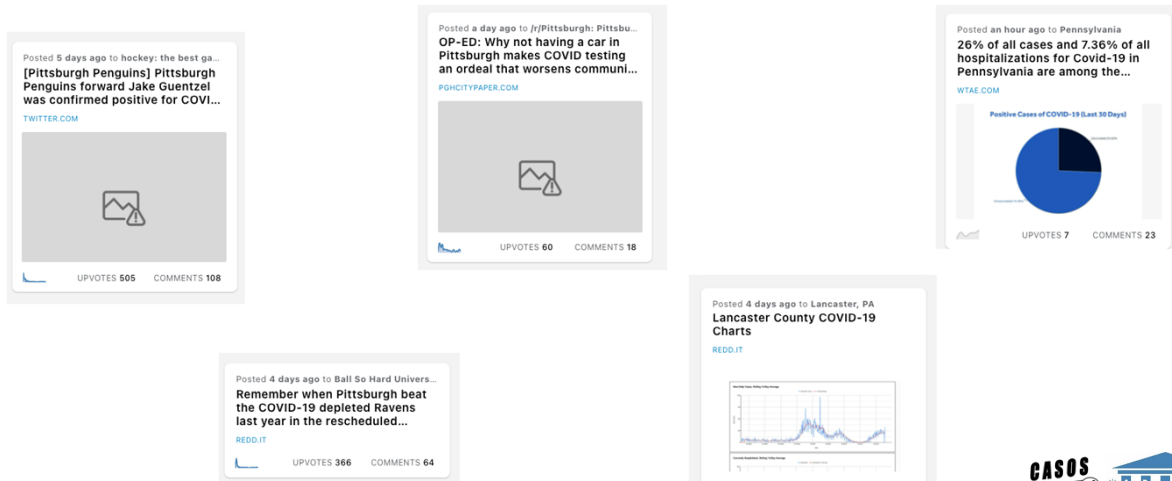
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Carnegie Mellon University

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## Trending Posts on Reddit October 1 – October 7

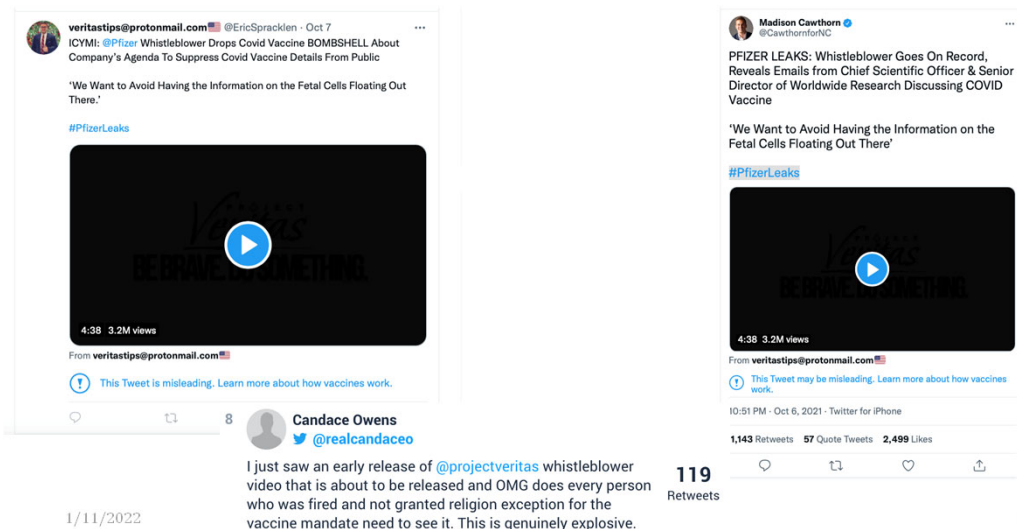


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## Massive Pfizer Disinformation Campaign by @projectveritas #pfizerleaks #exposepfizer



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## General Trends October 1 – October 7

- ❑ This week's stories covered vaccination mandates, school mask mandates, athletes' decisions on getting vaccinated and other sport issues related to COVID-19 (such as <http://tmz.me/yNaBU5a> NBA STAR MICHAEL PORTER JR. REFUSES TO GET COVID VACCINE 'I Don't Feel Comfortable' )
- ❑ There was a massive disinformation campaign about Pfizer vaccine with the hashtags #exposepfizer and #pfizerleaks.
- ❑ Story <https://obits.oregonlive.com/us/obituaries/oregon/name/jessica-wilson-obituary?pid=200278331> "Jessica Berg Wilson, 37, of Seattle, Wash., passed away unexpectedly Sept. 7, 2021 from COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia" went viral and was trending in multiple locations of Pennsylvania
- ❑ Natural immunity is still in trends ([medrxiv.org](https://medrxiv.org) - Comparing SARS-CoV-2 natural immunity to vaccine-induced immunity: reinfections versus breakthrough infections)
- ❑ Disinformation stories this week: <https://www.tmz.com/2021/10/01/joe-rogan-joe-biden-covid-vaccine-booster-shot-fake-podcast/?adid=social-twa> JOE ROGAN I THINK JOE BIDEN'S A FAKER... Doesn't Believe POTUS Got Live Booster Shot; <https://teamtuckercarlson.com/news/pfizer-and-astrazeneca-paid-lobbyists-to-direct-australias-leaders-to-push-vaccine-mandates-former-australian-member-of-parliament-says/> Pfizer And AstraZeneca Paid Lobbyists To Direct Australia's Leaders To Push Vaccine Mandates, Former Australian Member Of Parliament Says; <https://childrenshealthdefense.org/defender/covid-outbreak-vaccinated-patient-herd-immunity-theory/> COVID Outbreak Sparked by Fully Vaccinated Patient Challenges Vaccine-Induced Herd Immunity Theory; <https://www.bitchute.com/video/nPI4HtcDUym9/> DR. ZEV ZELENKO EXCLUSIVE: STEW PETERS 1-ON-1 EXPLOSIVE INTERVIEW EXPOSES COVID LIES! | STEW PETERS; <https://childrenshealthdefense.eu/eu-issues/pfizer-does-illegal-experiments-on-orphan-babies-in-poland-spain-finland-and-the-us/> Is Pfizer Doing Illegal Experiments on Orphan Babies in Poland, Spain, Finland and the US? Questions to the Polish senate, the world needs answers; <https://www.micdropopolitics.com/articles/whistleblower-shows-nearly-50k-medicare-patients-dead-after-vaccine-fact-check-this-raw-data/> WHISTLEBLOWER SHOWS NEARLY 50K MEDICARE PATIENTS DEAD AFTER VACCINE "FACT CHECK THIS" RAW DATA; [foxnews.com](https://foxnews.com) - Sen. Ron Johnson: There is not an FDA approved COVID vaccine in the US; [childrenshealthdefense.org](https://childrenshealthdefense.org) - Exclusive: Woman Injured by COVID Vaccine Pleads With Health Agencies for Help, as Local News Agency Kills Story After Pressure From Pfizer)
- ❑ Many stories about mandates are extensively shared: <https://bit.ly/3AXtLrH> Hundreds Of United Airlines Staff Hand In Covid Vaccination Proof After Company Threatens To Fire Them; <https://m.theepochtimes.com/nyc-restauranters-business-down-40-to-60-percent-due-to-vaccine-mandate-4025794.html> NYC Restauranters: Business Down 40 to 60 Percent Due to Vaccine Mandate)

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## 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](https://www.facebook.com/IDEasCMU)
- ❑ Twitter: [@IDeaSCMU](https://twitter.com/IDeaSCMU)
- ❑ YouTube: [IDeaS Center](https://www.youtube.com/IDeaS_Center)
- ❑ Ask to be on our Email-Distro Lists

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