

PA Vaccine Conversations and Misinformation on Twitter

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Vaccine Hesitancy Project Update based on June 4, 2021

The CMU centers for:
Informed DEMocracy And Social cyber-security
Computational Analysis of Social and Organizational Systems



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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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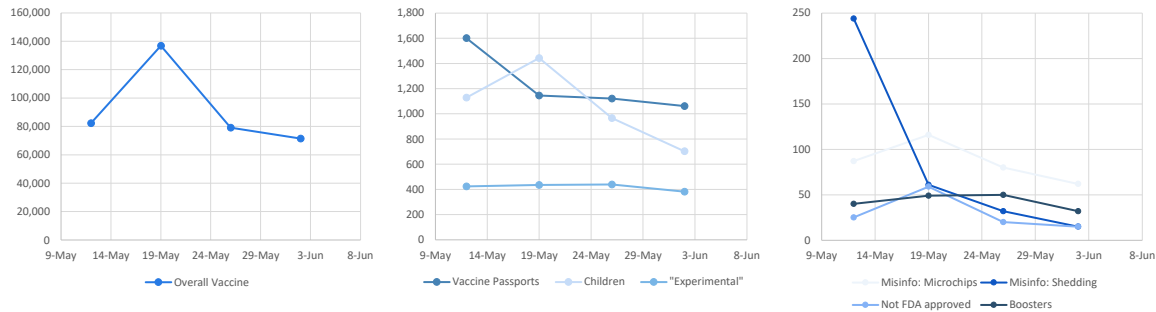
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Trends (tweets per week)



- Steady or decreasing trends for many conversations

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High Level View May 27 – June 2, 2021

Conversation	Total PA	Philadelphia		Pittsburgh		Erie		Allentown/Bethlehem		Other	
	Tweets	Tweets	%	Tweets	%	Tweets	%	Tweets	%	Tweets	%
Overall Vaccine	71,462	39,691	56%	16,403	23%	518	1%	14,078	20%	772	1%
Vaccine Passports	1,062	714	67%	153	14%	5	0%	184	17%	6	1%
Not FDA approved	15	9	60%	4	27%	0	0%	1	7%	1	7%
Boosters	32	20	63%	7	22%	0	0%	5	16%	0	0%
Misinfo: Microchips	62	28	45%	25	40%	3	5%	6	10%	0	0%
Misinfo: Magnets	40	22	55%	12	30%	2	5%	2	5%	2	5%
Misinfo: Shedding	15	10	67%	4	27%	0	0%	1	7%	0	0%
"Experimental"	382	174	46%	133	35%	5	1%	68	18%	2	1%
Children	703	401	57%	158	22%	16	2%	113	16%	15	2%
Myocarditis	111	41	37%	57	51%	0	0%	13	12%	0	0%
Masks	1,072	635	59%	252	24%	12	1%	160	15%	13	1%
Infertility	46	36	78%	3	7%	0	0%	7	15%	0	0%
Mandates	266	147	55%	60	23%	1	0%	50	19%	8	3%
Ingredients	14	10	71%	3	21%	0	0%	1	7%	0	0%
"ExposeFacebook"	765	564	74%	126	16%	4	1%	70	9%	1	0%
Natural Immunity	840	687	82%	94	11%	2	0%	56	7%	1	0%
Efficacy	68	39	57%	17	25%	0	0%	11	16%	1	1%
Spike Proteins	187	118	63%	41	22%	4	2%	21	11%	3	2%

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- Returning discussions: natural immunity
- New discussions: efficacy, spike proteins

Vaccine Narrative Descriptions (Newer)

- Natural Immunity: return of discussion of vaccines not having benefits if you have already had the virus
- Efficacy: discussions around misinformation reports claiming the efficacy of the vaccines are lower than promoted/that true efficacy is being hidden
- Spike Proteins: conversations around claims that the spike proteins related to vaccines are toxic/dangerous

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Misinfo-Sharing Users Networks

- We selected a subset of Twitter users who:
 - Tweeted or retweeted a set of misinformation urls (see slide 10)
 - Tweeted at least once every week about vaccine-related content throughout April and May
- Total of 406 users
 - 12 of which suspended from Twitter in the last week
- We collected the Twitter timelines (last 3,200 tweets) for each of these users (goes back through 2020)
- Created networks of their communications amongst themselves
 - Just between agents we estimate are in the PA region
 - All Communication and Reciprocal (users must have targeted each other at some point)
 - One set of networks up until April 1, 2021 and one set through until June 3, 2021

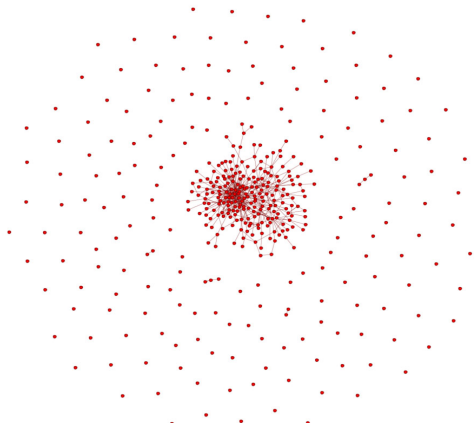
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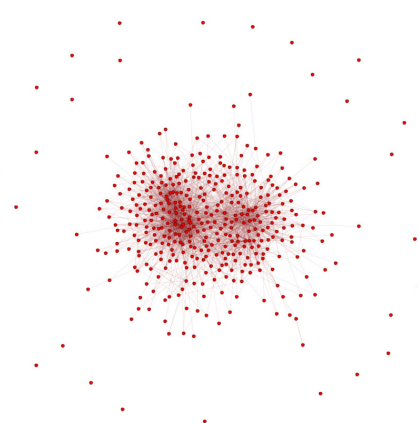
All Communication (Retweeting, Quoting, and/or Mentioning each other)



As of April 1, 2021

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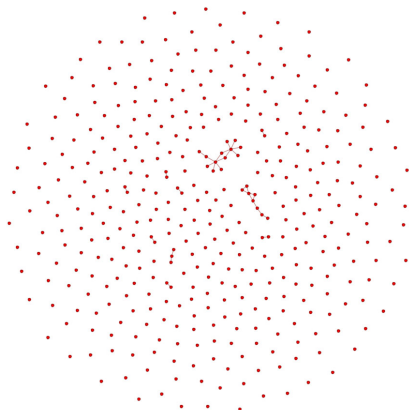


As of June 3, 2021



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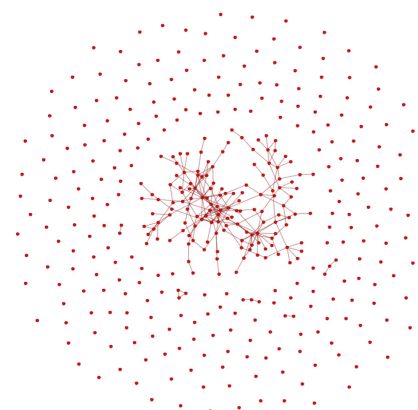
Reciprocal Communication (link only exists if each node has targeted the other)



As of April 1, 2021

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As of June 3, 2021



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Misinfo-Sharing Users Networks - Observations

- ❑ A core of the users had been communicating with each other (with very little reciprocal discussion) prior to our vaccine-related conversation collection started in April.
- ❑ Over the past 2 months, the interactions between users led to a denser communication network involving more of our suspect users. The amount of reciprocal communication between these users also increased.
 - ❑ They are building an online support community to foster misinformation
- ❑ This increases the possibility that when one of these users shares a misinformation url, that others in the network will also see it (and may share it)

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Misinfo-Sharing Users Networks - Observations

- ❑ Only a total of 2 verified accounts exist in the above networks and not in any central position
- ❑ Not shown in the slides above, but the top targets for retweets from the misinfo-sharing users are:
 - ❑ Almost entirely made up of right-wing/alt-right politicians, pundits, and news sources
 - ❑ And other well known vaccine questioning celebrity advocates such as @Naomirwolf (now suspended) and @RobertKennedyJr

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URLs that have been used to spread misinformation and are spread by users

URL	# times tweeted in		Level of Factual Reporting
	April/May		
https://www.deconstructingconventional.com/post/18-reason-i-won-t-be-getting-a-covid-vaccine	884		?
https://conservativechoicecampaign.com/michael-yeardon-interview-former-pfizer-vp-speaks-out-on-dangers-of-mrna-vaccines-covid-illusion/	383		?
https://www.thelastamericavagabond.com/michael-yeardon-interview-former-pfizer-vp-speaks-out-on-dangers-of-mrna-vaccines-covid-illusion/	351		FAKE NEWS
https://dailyexpose.co.uk/2021/05/01/an-interview-with-dr-mike-yeardon-vaccine-passports-are-a-gateway-to-mass-killing-in-the-billions/	329		VERY LOW
https://odysee.com/@TLAVagabond:5/Michael-Yeardon-Interview-Former-Pfizer-VP-Speaks-Out-On-Dangers-mRNA-Vaccines-COVID-Illusion.8	304		?
https://www.lifesitenews.com/news/exclusive-former-pfizer-vp-your-government-is-lying-to-you-in-a-way-that-could-lead-to-your-death	287		MIXED
https://summit.news/2021/05/26/johns-hopkins-prof-half-of-americans-have-natural-immunity-dismissing-it-is-biggest-failure-of-medical-leadership/	239		LOW
https://rumble.com/vg4inv-michael-yeardon-full-interview-planet-lockdown.html	205		?
https://thempoweror.com/2021/05/22/young-model-stephanie-dubois-in-coma-after-astra-zeneca-vaccine/	184		?
https://worthyopolitics.com/wth-breaking-news-fbi-threatens-to-hunt-down-every-american-who-lies-about-taking-covid-vaccine-and-buys-fake-vaccine-passports/	171		?
https://childrenshealthdefense.org/defender/vaers-data-vaccine-injury-trends-continue/	148		LOW
https://chute.rocks/qS9X8Blr4Ucv	110		VERY LOW
https://www.zerohedge.com/covid-19/caught-red-handed-cdc-changes-test-thresholds-virtually-eliminate-new-covid-cases-among	109		LOW
https://nationalfile.com/report-pfizer-vaccine-confirmed-to-cause-neurodegenerative-diseases/	108		LOW
https://www.americasfrontlinedoctors.org/frontline-news/americas-frontline-doctors-files-motion-for-temporary-restraining-order-against-use-of-covid-vaccine-in-children	92		LOW
https://www.americasfrontlinedoctors.org/frontline-news/former-pfizer-vp-calls-doctors-covid-home-treatment-guide-remarkable-document-would-end-global-fear-based-pandemic-tomorrow	82		LOW
https://rumble.com/vf8fz5-dr-mike-yeardon.html	70		LOW
https://dailyexpose.co.uk/2021/04/11/uk-government-model-states-the-fully-vaccinated-will-dominate-deaths-in-3rd-wave-and-they-will-blame-children-and-unvaccinated-for-it/	62		VERY LOW
https://childrenshealthdefense.org/defender/vaers-significant-jump-reported-injuries-deaths-after-covid-vaccine/	59		LOW
https://airfoundation.com/bombshell-nobel-prize-winner-reveals-covid-vaccine-is-creating-variants/	57		?
https://dcdirtylaundry.com/bombshell-moderna-chief-medical-officer-admits-mrna-alters-dna/	52		VERY LOW

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- IDeaS website - <https://www.cmu.edu/ideas-social-cybersecurity/>
- CASOS website - <http://www.casos.cs.cmu.edu/>

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