PA Vaccine Conversations on Twitter

Dr. Iuliia Alieva, Dawn Robertson, Dr. Kathleen M. Carley
Vaccine Hesitancy Project Update based on June 3, 2022 – June 9, 2022

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

PA Vaccine Conversations Project

- This report is an effort to summarize social media conversations around COVID-19 issues in Pennsylvania, with a focus on vaccination. It contains an analysis of the general topics related to COVID-19 vaccination. This includes discussions related to COVID-19 regulations, mandates, masks, pro-and anti-vaccination campaigns, science messages, misinformation, disinformation, conspiracy theories, and vaccine hesitancy messages.
- Anti-Vax messaging includes vaccine hesitancy messages, opinions, questions, policy health and science related information, misinformation, disinformation, and conspiracy theories.
Report Overview June 3 – June 9

- Mandates, masks, racism, FDA approval, heart issue, and vaccine side effects are trending this week;
- Trending stories: trib.al/NISMW9E Special Olympics reverses vaccine mandate after DeSantis threatens $27m fine; pbmpt.org/pfizers-documents Pfizer’s Documents;
- Anti-vax, disinformation, and vaccine hesitancy stories: rumble.com/v174zbr-new-pfizer-releases-more-documents.html NEW: Pfizer Releases More Documents; dossiersubstack.com/p/ghost-shot/pfizer-quietly-admits-Ghost-Shot Pfizer quietly admits it will never manufacture original FDA approved COVID vaccines; israelnationalnews.com/news/328529 New study links COVID vaccines to 25% increase in cardiac arrest for both males & females; amgreatness.com/2022/05/30/whistleblowers-lawyer-pfizer-got-away-with-vaccine-fraud-because-government-was-co-conspirator Whistleblower’s Lawyer: Pfizer Got Away With Vaccine Fraud Because Government Was Co-Conspirator
- Popular anti-vax tweets: "A Pfizer document reveals between 82-97% of pregnant women lost their babies. 45% of the 270 pregnant mothers reported adverse clinical events, and more than 60% of these were serious." Great work @JesseKellyDC https://t.co/Oj0OTA3vce; Let’s repeal Pfizer's immunity before we discuss repealing gun manufacturers immunity. The released Pfizer documents are devastating to the COVID cult; The CEO of Pfizer, the head of the CIA, the Director of the NSC, the VP of Facebook, the King of Holland and the Secretary General of NATO are all secretly meeting right now behind closed doors in DC. It’s called Bilderberg, & not a single major media outlet has reported on it; The Pfizer documents show they knew that 35 teenagers had heart damage a week after being injected with mRNA vaccines and did not tell the public

Countering disinformation June 3 – June 9

- The most popular stories and tweets this week spread disinformation about Pfizer documents: rumble.com/v174zbr-new-pfizer-releases-more-documents.html NEW: Pfizer Releases More Documents; "A Pfizer document reveals between 82-97% of pregnant women lost their babies. 45% of the 270 pregnant mothers reported adverse clinical events, and more than 60% of these were serious." Great work @JesseKellyDC https://t.co/Oj0OTA3vce
- Several fact-checking stories provide details about allegations made three days after more than 80,000 pages of Pfizer COVID-19 data was made public and explain why those claims are false. Experts told USA TODAY the claim is based off a misinterpretation of data from a post-surveillance data report Pfizer published in 2021. The data in the report, which includes deaths and adverse events, does not specify whether the vaccine caused any of these health outcomes https://www.usatoday.com/story/news/factcheck/2022/05/30/fact-check-claim-misinterprets-data-2021-pfizer-report/9898129002/
- USA Today also debunks a claim about vaccine 12% efficacy rate and fetus harm https://www.usatoday.com/story/news/factcheck/2022/06/09/fact-check-false-claims-stem-80-000-page-pfizer-release/9664481002/
- Similar fact-checking stories were published by Reuters: https://www.reuters.com/article/factcheck-covid19-vaccine-idUSL2N2X1F12/ Fact Check-Pfizer documents do not show that COVID-19 vaccine has 12% efficacy; https://www.reuters.com/article/factcheck-screenshot-pfizer-idUSL1N2X015E Fact Check-Canadian outlet Global News did not report that Pfizer’s COVID-19 vaccine recorded a 12% efficacy rate
- It is necessary to ensure that fact-checking links are widely shared. The suggestion is to promote them via social media platforms, also, through partnerships with local organizations and communities who would share this information or similar fact-checking details from journalists and researchers in the media.
Trends (tweets per week) June 3 – June 9

High Level View by City June 3 – June 9

- Conversation topics trending this week over last
  - Racism
  - Masking
  - FDA Approval
  - Heart Issues
High Level View by County June 3 – June 9

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

<table>
<thead>
<tr>
<th>County</th>
<th>Allegheny</th>
<th>Beaver</th>
<th>Butler</th>
<th>Cambria</th>
<th>Fayette</th>
<th>Indiana</th>
<th>Somerset</th>
<th>Westmoreland</th>
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<tr>
<td>Overall Vaccine</td>
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<td>22</td>
<td>10</td>
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<td>4</td>
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</tbody>
</table>

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Top Words Used per Week June 3 – June 9

- Word count in COVID-19 related tweets

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Top Hashtags by County June 3 – June 9

- 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:

<table>
<thead>
<tr>
<th>County</th>
<th>Hashtags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegheny</td>
<td>pfizer (88) covidvaccine (3) Covid (1) h2p (1)</td>
</tr>
<tr>
<td>Beaver + Butler</td>
<td>ussliberty (61) covid_19 (2) myocarditis (1)</td>
</tr>
<tr>
<td>Butler</td>
<td>covid19 (55) coronavirus (1) pfizer (1)</td>
</tr>
<tr>
<td>Somerset</td>
<td>partygate (39) covidvaccination (1)</td>
</tr>
<tr>
<td>West Moreland</td>
<td>pfizerdocuments (28) maskmandate (1)</td>
</tr>
</tbody>
</table>

Top Hashtags by City June 3 – June 9

- After removing hashtags that were part of our search criteria, the top 5 hashtags for each region related to COVID19/vaccines are as follows:

<table>
<thead>
<tr>
<th>Region</th>
<th>Hashtags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philadelphia</td>
<td>pfizer (120) covidvaccine (12) pfizer (40) pfizer (88) borijohnsonmustgo (3) pfizer (55) covid19 (10)</td>
</tr>
<tr>
<td>Chester</td>
<td>covid19 (108) pfizer (12) vaccinatedeaths (28) ussliberty (61) desantisdereosyflorida (3) covid19 (38) pfizer (6)</td>
</tr>
<tr>
<td>Norristown</td>
<td>cdnpoli (73) covid19 (9) trump (24) covid19 (54) wtpblue (3) covidvaccine (27) pitt (6)</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>vaccine (48) health (8) billgates (23) partygate (39) covid19 (2) pfizerdocs (19) pfizerdocs (5)</td>
</tr>
<tr>
<td>Erie</td>
<td>pfizerdocuments (30) coronavirustips (6) monkeypox (23) pfizerdocuments (28) denwoice1 (2) pfizerdocuments (18) h2p (4)</td>
</tr>
<tr>
<td>Allentown/Bethlehem</td>
<td>pfizerdocuments (30) coronavirustips (6) monkeypox (23) pfizerdocuments (28) denwoice1 (2) pfizerdocuments (18) h2p (4)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

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## Top URLs by County June 3 – June 9

### Allegheny
- Allegheny County
  - Allegheny County Special Olympics Vaccine Mandate After DeSantis Bully (110)
  - Peanut Butter & Jelly Sandwiches on the Table (36)
- Butler County
  - Butler Township Vaccine Mandate (4)
  - Butler Township Vaccine Mandate (1)
- Beaver County
  - New Study Links COVID-19 Vaccines to 25% Increase in Cardiac Arrest for Both Males & Females (33)
  - Ghost Shot Pfizer Quietly Admits It Will Never Manufacture Original FDA Approved COVID Vaccines (27)
  - The Who’s Who to Bid New Global Digital Passport and ID System (5)
  - New study links COVID vaccines to 25% increase in cardiac arrest for both males & females (33)
  - The Who’s Who to Bid New Global Digital Passport and ID System (3)
  - New Study Links COVID-19 Vaccines to 25% Increase in Cardiac Arrest for Both Males & Females (2)
- Fayette County
  - New Study Links COVID-19 Vaccines to 25% Increase in Cardiac Arrest for Both Males & Females (33)
  - The Who’s Who to Bid New Global Digital Passport and ID System (5)
- Indiana County
  - Indiana County Special Olympics Vaccine Mandate After DeSantis Bully (130)
- West Moreland County
  - West Moreland County Special Olympics Vaccine Mandate After DeSantis Bully (130)

### Philadelphia
- Philadelphia
  - Philadelphia Special Olympics Vaccine Mandate After DeSantis Bully (110)
  - Peanut Butter & Jelly Sandwiches on the Table (36)
  - The Who’s Who to Bid New Global Digital Passport and ID System (5)
  - New study links COVID vaccines to 25% increase in cardiac arrest for both males & females (33)
  - The Who’s Who to Bid New Global Digital Passport and ID System (3)

### Chester
- Chester
  - Chester County Special Olympics Vaccine Mandate After DeSantis Bully (110)
  - Peanut Butter & Jelly Sandwiches on the Table (36)
  - The Who’s Who to Bid New Global Digital Passport and ID System (5)

### Montco
- Montgomery County
  - Montgomery County Special Olympics Vaccine Mandate After DeSantis Bully (110)
  - Peanut Butter & Jelly Sandwiches on the Table (36)

### New Jersey
- New Jersey
  - New Jersey Special Olympics Vaccine Mandate After DeSantis Bully (110)
  - Peanut Butter & Jelly Sandwiches on the Table (36)

### Other
- Other
  - Other
  - Other
  - Other
Analysis of Tweeters - Super Spreaders

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

![Bar chart showing the spreader index of various tweeters.]

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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.

![Bar chart showing the friend index of various tweeters.]

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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.

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.

<table>
<thead>
<tr>
<th>Agent Label</th>
<th>Value</th>
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<tbody>
<tr>
<td>NadineDorries[+]</td>
<td>1517</td>
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<tr>
<td>JesseKellyDC[+]</td>
<td>453</td>
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<tr>
<td>GovRonDeSantis[+]</td>
<td>328</td>
</tr>
<tr>
<td>GovernorTomWolf[+]</td>
<td>274</td>
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<tr>
<td>POTUS[+]</td>
<td>263</td>
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<tr>
<td>pfizer[+]</td>
<td>219</td>
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<td>catturd2</td>
<td>189</td>
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<tr>
<td>PeterStefanov2[+]</td>
<td>144</td>
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<tr>
<td>BorisJohnson[+]</td>
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<tr>
<td>joeywreck</td>
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<td>NadineDorries[+]</td>
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<td>JesseKellyDC[+]</td>
<td>453</td>
</tr>
<tr>
<td>GovRonDeSantis[+]</td>
<td>328</td>
</tr>
</tbody>
</table>
Trending Tweets June 3 – June 9

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

- I'm really developing a soft spot for Dorries... Here she is, happily telling us that Tory donors are blackmailing the party to keep Johnson in power. You do you @NadineDorries https://t.co/Blxvlvdv5;

- SCOOP: The State of Florida threatened the Special Olympics with $27.5 MILLION in fines because the organization had a vaccine requirement at its games in Orlando this weekend. Late yesterday, the Special Olympics pulled the requirement. 1/3;

- Let's start with the COVID-19 pandemic. We were told by experts in infectious diseases that to control the spread of the pandemic, we had to socially distance, mask, and get vaccinated. So, in a general sense, we were being told what to do. Guess who had a big problem with that;

- "A Pfizer document reveals between 82-97% of pregnant women lost their babies. 45% of the 270 pregnant mothers reported adverse clinical events, and more than 60% of these were serious." Great work @JesseKellyDC https://t.co/0j00TA3vcc;

- Let's repeal Pfizer's immunity before we discuss repealing gun manufacturers immunity;

- This evening, I tested positive for COVID. My symptoms are mild. I'm grateful that I recently got my second vaccine booster. I will be isolating at home according to CDC guidance;

- The released Pfizer documents are devastating to the COVID cult;

- This is what standing up for your rights is all about - Isabella will now be able to compete in the Special Olympics because @GovRonDeSantis fought their vaccine mandate (which is illegal in FL) and won. Isabella's smile says everything. https://t.co/P6GUL3BQ0;

- The CEO of Pfizer, the head of the CIA, the Director of the NSC, the VP of Facebook, the King of Holland and the Secretary General of NATO are all secretly meeting right now behind closed doors in DC. It's called Bilderberg, & not a single major media outlet has reported on it;

- "Finally we can say the words 'party' and 'gate' and it's a positive" Comedian Lee Mack made a joke about Downing Street’s partygate scandal in front of Boris Johnson and wife Carrie, who were watching the Jubilee show from the royal box https://t.co/Avx2dibdE;

- The Pfizer documents show they knew that 35 teenagers had heart damage a week after being injected with MRNA vaccines and did not tell the public.
PA Hashtag Cloud June 3 – June 9

Negative Attitudes June 3 – June 9
Negative Hashtag Cloud June 3 – June 9

Trending Posts on Facebook June 3 – June 9
Trending Posts on Instagram June 3 – June 9

Trending Posts on Reddit June 3 – June 9
For More Information

- Director Kathleen M. Carley - 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/
- Facebook: @IDeasCMU
- Twitter: @IDeaSCMU
- YouTube: IDeaS Center
- Ask to be on our Email-Distro Lists