PA Vaccine Conversations on Twitter

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Vaccine Hesitancy Project Update based on October 7, 2022 – October 13, 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 October 7– October 13

- Masks, Mandates, Race are trending this week, also Vaccine passports, "Experimental" vaccines, Boosters, Children trending this week over the last;


- Popular anti-vax tweets: BREAKING: In COVID hearing, #Pfizer director admits: #vaccine was never tested on preventing transmission. "Get vaccinated for others" was always a lie. The only purpose of the #COVID passport: forcing people to get vaccinated. The world needs to know. Share this video! https://t.co/su1WqgB4dO; So it turns out "get vaccinated to save other people" was a farce. I think I owe a lot of people an apology. I genuinely thought I could trust the 'experts'. I'm very disappointed to have been hoodwinked by the propaganda of 2020; There are still people being forced to take an experimental shot to keep their jobs or pursue new careers. Pfizer admitted that it wasn’t tested to see if it stopped transmission. This has to stop; BREAKING: Florida Surgeon General: Covid mRNA vaccine found to cause 84% increase in DEATH for men ages 18-39 https://t.co/VbNOBEHJZq

Popular anti-vax stories October 7– October 13

Anti-vax, disinformation, and vaccine hesitancy stories sorted by the number of shares:

- drezit/SZ2w3N4 Pfizer executive admits COVID-19 vaccine was never tested to prevent transmission: 'This is scandalous,'
- outkick.com/pfizer-admits-it-had-no-idea-if-mrna-vaccine-would-prevent-transmission PFIZER ADMITS IT HAD NO IDEA IF MRNA VACCINE WOULD PREVENT TRANSMISSION;
- alexberenson.substack.com/p/my-promise-to-pfizer-and-biontech/comments My promise to Pfizer and BioNTech and Moderna;
- nytimes.com/2022/10/05/health/cdc-338x-increase-aids-cancer-2021 CDC confirms USA suffered 338x increase in reports of AIDS-associated Diseases & Cancers in 2021 following COVID Vaccine roll-out;
- dailymail.com/2022/10/05/geo-biden-covid-omicron-bivalent-booster-coronavirus-pfizer-moderna Nobody Wants Biden's Boosters — But He Forked Over Billions To Pfizer And Moderna For Them Anyway;
- twitter.com/BSpeed03515999/status/1578963368865460224 US Doctor testifies under oath that mRNA injections are killing children. He declares that all mRNA injections should stop immediately and be pulled from the market before more children die.
Countering disinformation October 7 – October 13

Articles and fact-checking stories debunking disinformation for the last week:

- FACT CHECK: Did Pfizer lie about testing COVID-19 vaccine’s ability to prevent transmission before roll out? [link]
- Pfizer Never Claimed to Have Tested the Impact of Its COVID-19 Vaccine on Transmission … - Latest Tweet by AP Fact Check [link]
- Fact Check: Preventing transmission never required for COVID vaccines’ initial approval; Pfizer vax did reduce transmission of early variants [link]
- Analysis by Florida Department of Health about COVID-19 mRNA vaccines contains multiple methodological problems [link]
- Florida’s COVID-19 Vaccination Analysis Is Flawed, Experts Say [link]
- Florida government vaccine analysis misrepresented online [link]

Trends (tweets per week in PA) October 7 – October 13
# High Level View by City October 7 – October 13

## Conversation topics trending this week over last:
- Vaccine passports
- “Experimental” vaccines
- Boosters
- Children

### High Level View by County October 7 – October 13

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Vaccine</td>
<td>10706</td>
<td>76</td>
<td>35</td>
<td>9</td>
<td>16</td>
<td>9</td>
<td>5</td>
<td>69</td>
</tr>
</tbody>
</table>

- 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 October 7– October 13

*Word count in COVID-19 related tweets*

Top Hashtags by County October 7– October 13

- 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>vaccine (906), COVID (893), Pfizer (892), vaccineinjuries (31)</td>
</tr>
<tr>
<td>Beaver + Butler</td>
<td>COVIDisAirborne (1), CovidIsNotOver (1), vaccine (2)</td>
</tr>
<tr>
<td>Indiana + Somerset</td>
<td>COVID (2), Pfizer (2), vaccine (2)</td>
</tr>
<tr>
<td>CrimesAgainstHumanity (23)</td>
<td></td>
</tr>
</tbody>
</table>

*Figures reflect the top 5 hashtags for each county.*
Top Hashtags by City October 7–October 13

- 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>Philadelphia</th>
<th>Chester</th>
<th>Norristown</th>
<th>Pittsburgh</th>
<th>Erie</th>
<th>Allentown/Bethlehem</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hashtags</td>
<td>COVID (644)</td>
<td>Pfizer (65)</td>
<td>Pfizer (131)</td>
<td>vaccine (906)</td>
<td>vaccine (15)</td>
<td>vaccine (438)</td>
<td>COVID (51)</td>
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<tr>
<td></td>
<td>vaccine (630)</td>
<td>COVID (57)</td>
<td>COVID (130)</td>
<td>COVID (893)</td>
<td>Pfizer (14)</td>
<td>COVID (435)</td>
<td>vaccine (50)</td>
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<tr>
<td></td>
<td>Pfizer (613)</td>
<td>vaccine (54)</td>
<td>vaccine (96)</td>
<td>Pfizer (892)</td>
<td>COVID (13)</td>
<td>Pfizer (419)</td>
<td>Pfizer (47)</td>
</tr>
<tr>
<td></td>
<td>TruthAboutMRNAVaccines (16)</td>
<td>PfizerLiedPeopleLied (5)</td>
<td>vaccineinjuries (7)</td>
<td>vaccineinjuries (31)</td>
<td>CovidNotOver (1)</td>
<td>vaccineinjuries (33)</td>
<td>PfizerLiedPeopleLied (4)</td>
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<tr>
<td></td>
<td>vaccineinjuries (16)</td>
<td>vaccineinjuries (3)</td>
<td>VaccineSideEffects (7)</td>
<td>CrimesAgainstHumanity (23)</td>
<td>CovidVaccineFraud (1)</td>
<td>TruthAboutMRNAVaccines (15)</td>
<td>COVIDisAirborne (2)</td>
</tr>
</tbody>
</table>

Top URLs by County October 7–October 13

<table>
<thead>
<tr>
<th>County</th>
<th>Allegheny</th>
<th>Beaver + Butler</th>
<th>Cambria</th>
<th>Fayette</th>
<th>Indiana</th>
<th>Somerset</th>
<th>West Moreland</th>
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<td>URL</td>
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</tbody>
</table>

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Outline:

1. Top Hashtags by City
   - Philadelphia
   - Chester
   - Norristown
   - Pittsburgh
   - Erie
   - Allentown/Bethlehem
   - Other

2. Top URLs by County
   - Allegheny
   - Beaver + Butler
   - Cambria
   - Fayette
   - Indiana
   - Somerset
   - West Moreland
Coronavirus (COVID-19) Update:

Transmission: 'This is scandalous'

Covid mRNA vaccine found to cause 84% increase in DEATH for men ages 18-39

Top announcements/committees:

Republicans than Democrats, Super Spreaders are users which generate content that is shared often, and hence spread information effectively.
Analysis of Tweeters - Super Friends

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

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>
</tr>
</thead>
<tbody>
<tr>
<td>TheOtherMandela</td>
<td>468</td>
</tr>
<tr>
<td>MeidasTouch</td>
<td>439</td>
</tr>
<tr>
<td>mrmarkdolan</td>
<td>321</td>
</tr>
<tr>
<td>RonJohnsonWI</td>
<td>312</td>
</tr>
<tr>
<td>FLSurgeonGen</td>
<td>297</td>
</tr>
<tr>
<td>pfizer</td>
<td>273</td>
</tr>
<tr>
<td>937heFan</td>
<td>270</td>
</tr>
<tr>
<td>DrAseemMalhotra</td>
<td>264</td>
</tr>
<tr>
<td>RepThomasMassie</td>
<td>214</td>
</tr>
<tr>
<td>catturd2</td>
<td>191</td>
</tr>
<tr>
<td>TheOtherMandela</td>
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<td>321</td>
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</tbody>
</table>

Trending Tweets October 7– October 13

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

- BREAKING: In COVID hearing, #Pfizer director admits: #vaccine was never tested on preventing transmission. "Get vaccinated for others" was always a lie. The only purpose of the #COVID passport: forcing people to get vaccinated. The world needs to know. Share this video! *https://t.co/su1Wg6EyDQ*
- So it turns out "get vaccinated to save other people" was a farce. I think I owe a lot of people an apology. I genuinely thought I could trust the experts. I'm very disappointed to have been hoodwinked by the propaganda of 2020. Dr Fauci was eligible for his COVID booster shot so Stephen took him next door to the pharmacy to get vaccinated — and they had quite the journey. #Colbert https://t.co/1GZo2u89RC
- Pfizer executive admits that their COVID vaccine was never tested to see if it would stop transmission. https://t.co/Q80ok2HVva
- Fully vaccinated. https://t.co/YY6sba5EW
- Tonight Republican Ron Johnson lost his debate to Democrat Mandela Barnes in a devastating way for Republicans; 153% more Republicans died of Covid in Ohio than Democrats, because of their refusal to get vaccinated;
- There are still people being forced to take an experimental shot to keep their jobs or pursue new careers. Pfizer admitted that it wasn't tested to see if it stopped transmission. This has to stop;
- BREAKING: Florida Surgeon General: Covid mRNA vaccine found to cause 84% increase in DEATH for men ages 18-39 https://t.co/VbNQBEHJZq
- NEW: Twitter has REMOVED @FLSurgeonGen Joseph Ladapo's tweet announcing how a study into the covid mRNA vaccine found an 84% increase in cardiac-related deaths for men ages 18-39 https://t.co/unXXXo2HZL
- If Biden reinstates the draft... would they pull people into the military even if they weren't vaccinated?; SERIOUS QUESTION: Do you know anyone who is fully vaccinated, boosted, and never got COVID?
- NEW: Our new research shows that one dose of #COVID19 vaccine can cut household transmission by up to half. Read more here: https://t.co/2F57CUuaP
- All the people who defended the vaccine are awfully quiet these days
General PA Conversation October 7– October 13

Source: VCTR Project Dashboard

PA Hashtag Cloud October 7– October 13

Source: VCTR Project Dashboard
Negative Attitudes October 7–October 13

Source: VCTR Project Dashboard

Negative Hashtag Cloud October 7–October 13

Source: VCTR Project Dashboard
Trending Posts on Facebook October 7– October 13

Trending Posts on Instagram October 7– October 13
Measures for countering health disinformation

- Anti-vaccine narratives are still pervasive on social media, while there are not that many counter-narratives about the positive effects of vaccines;
- There is a need for a reframing of social media as a medically and socially valuable resource and platform because of its high impact on society;
- Healthcare organizations need to implement social media strategies to create and expand conversations countering disinformation on social media;
- It would be helpful for health communicators to cooperate with local influencers who could spread pro-vaccination messages. Another strategy could be to motivate health practitioners to use social media as a channel for communication with the public;
- "Strategies focused on meaningfully and safely engaging HCPs on social media, promoting interconnectivity across the medical and public health communities on COVID-19 vaccine truths, and sustaining these messaging efforts across vaccine implementation stages will be our best hope of preventing any more missed doses and promoting "misinformation immunity" for all." (Hernandez et al. 2021. "The COVID-19 vaccine social media infodemic: healthcare providers’ missed dose in addressing misinformation and vaccine hesitancy.")
Measures for countering health disinformation

- As a trusted source of information on vaccines, family physicians play a crucial role in driving vaccine acceptance;
- Sharing stories, building trust with patients, addressing pain associated with vaccination, presenting vaccination as the default approach early on, focusing on the benefits of protection, and being honest about side effects could also help to promote pro-vaccination attitudes (Shen & Dubey 2019. “Addressing vaccine hesitancy: Clinical guidance for primary care physicians working with parents”);
- It is helpful to provide more information for the patients about the possible disinformation strategies they may deal with, such as manipulating emotions to promote misinformation and conspiracy theories to sow confusion and create division. Inoculation strategy may help to prepare the community by presenting counterarguments to misinformation and raising awareness of negative emotional appeals spread by anti-vaccine campaigns;
- Framing vaccination as a concrete, actionable strategy to reduce COVID-19 risk may help to address negative emotions, increase self-efficacy and ensure the feelings of control over reducing COVID-19 risk.

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