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 August 5 – August 11

- Masks, Mandates, Boosters, Children, Race, Military are trending this week;
- Popular anti-vax tweets: I’ve seen more serious vax injuries in my medical practice in the past 6 months than in my previous 30 years combined; Man tracks down the doctor that gave one of his family members the covid vaccine and they died after taking it... https://t.co/ceeUVHTgyc

Popular anti-vax stories sorted by shares

- kanekoa.substack.com/p/twitter-censors-pfizer-injured-israeli Twitter Censors Pfizer-Injured Israeli COVID Vaccine Director
- tme/vaxxpasssolutions Vaxx Deaths, Injuries Pass Solutions – Telegram channel
- twitter.com/_RL_W/status/1443715102755201027 Vaccine adverse events due to inadvertent intravascular administration. The needle should be aspirated in order to determine whether a blood vessel has been struck. Aspiration, more information
Anti-vax stories sorted by the projected impact

- t.me/vaxxpasssolutions Vaxx Deaths, Injuries Pass Solutions - Telegram channel;
- kaneko.substack.com/p/twitter-censors-pfizer-injured-israeli Twitter Censors Pfizer-Injured Israeli COVID Vaccine Director;
- twitter.com/_RL_W/status/1443715102755201027 Vaccine adverse events due to inadvertent intravascular administration. The needle should be aspirated in order to determine whether a blood vessel has been struck. Aspiration, more information

Countering disinformation August 5 – August 11

- Articles and fact-checking stories debunking disinformation for the last week:
  - Fact Check: Was animal testing skipped for Covid vaccines? https://www.thip.media/health-news-fact-check/fact-check-was-animal-testing-skipped-for-covid-vaccines/33769/
  - Monkeypox is not a government conspiracy to cover up ‘vaccine-induced’ diseases https://fullfact.org/health/expose-monkeypox-covid-vaccine-aids-false/
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.
Trends (tweets per week in PA) August 5 – August 11

**Conversation topic trending this week over last:**
- Racism
High Level View by County August 5 – August 11

<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>
</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 August 5 – August 11

Word count in COVID-19 related tweets
### Top Hashtags by County August 5 – August 11

- 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>Allegheny</th>
<th>Beaver + Butler</th>
<th>Fayette</th>
<th>Somerset</th>
<th>Indiana</th>
</tr>
</thead>
<tbody>
<tr>
<td>pfizer (121)</td>
<td>healthcareawarenessmonth (2)</td>
<td>covid (1)</td>
<td>darkbrand (1)</td>
<td>novaccinemandates (2)</td>
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<td>covid19 (60)</td>
<td>healthcareawarenessmonth (25)</td>
<td>deletethegop (1)</td>
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<td>novaccinepassports (2)</td>
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<td>monkeypox (24)</td>
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</tr>
<tr>
<td>vaccine (22)</td>
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### Top Hashtags by City August 5 – August 11

- 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>Philadelphia</th>
<th>Chester</th>
<th>Norristown</th>
<th>Pittsburgh</th>
<th>Erie</th>
<th>Allentown/Bethlehem</th>
<th>Other</th>
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<tbody>
<tr>
<td>pfizer (240)</td>
<td>pfizer (14)</td>
<td>healthcareawarenessmonth (71)</td>
<td>pfizer (121)</td>
<td>healthcareawarenessmonth (3)</td>
<td>pfizer (54)</td>
<td>monkeypox (17)</td>
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<td>covid19 (93)</td>
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<td>pfizer (16)</td>
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<td>healthcareawarenessmonth (29)</td>
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<td>vaccine (90)</td>
<td>moderna (4)</td>
<td>monkeypox (9)</td>
<td>healthcareawarenessmonth (25)</td>
<td>pfizer (2)</td>
<td>covid19 (24)</td>
<td>healthcareawarenessmonth (11)</td>
</tr>
<tr>
<td>monkeypox (74)</td>
<td>monkeypox (4)</td>
<td>novavax (9)</td>
<td>monkeypox (24)</td>
<td>mrna (1)</td>
<td>vaccinesideeffects (18)</td>
<td>covid (6)</td>
</tr>
<tr>
<td>healthcareawarenessmonth (40)</td>
<td>vaccine (4)</td>
<td>vaccineinjuries (7)</td>
<td>vaccine (22)</td>
<td>vaccinated (1)</td>
<td>vaccine (17)</td>
<td>pfizer (6)</td>
</tr>
</tbody>
</table>
Allegheny

Allegheny County Need to Know 2022

Monkeypox in Pittsburgh? Here's what you need to know (18)

Biden tests positive for COVID-19 again, will continue isolation (20)

Worth the News

There was an unexpected 40% increase in 'all cause deaths' in 2021 (20)

New York Health Department says hundreds of people may be infected with polio virus (17)

Butler + Beaver

Butler County Plan-Up to Stretch Out Monkeypox Vaccine Supply (155)

Polio virus (12)

Gut Health: In the Gut (5)

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Cambia

Cambia County health (5)

Vaccines for Children and Teens

Stretcher Out Monkeypox Vaccine

people? The Health Department confirms or denies the rumor (36)

Wyoming County

University of Wyoming: vaccine mandates help stop virus deaths in their local counties, study says (1)

Westmoreland

Westmoreland County Health Division

Sen. Johnson suggests ending Medicare, Social Security as mandatory spending programs (22)

Healthcare workers in the last year, Ford's solution to closures is to speed up the accreditation of international nurses. Zero mention of hiring back 'already qualified' nurses. Top-up (5)

Public Source

One big reason for Biden's COVID-19 vaccine changes is the change in his political environment: Recommendations for the public have been scaled back (27)

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Polio virus (17)
Analysis of Tweeters - Super Spreaders

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>morethanmySLE</td>
<td>900</td>
</tr>
<tr>
<td>TheOtherMandela</td>
<td>587</td>
</tr>
<tr>
<td>SteelerNation</td>
<td>375</td>
</tr>
<tr>
<td>TimboFionna</td>
<td>373</td>
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<tr>
<td>_SNPodcast</td>
<td>299</td>
</tr>
<tr>
<td>TotalSportsEnt</td>
<td>298</td>
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<tr>
<td>CommonSenseMD1</td>
<td>296</td>
</tr>
<tr>
<td>TerribleTailgat</td>
<td>296</td>
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<tr>
<td>ByKimberleyA</td>
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<td>steeler</td>
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<td>587</td>
</tr>
<tr>
<td>SteelerNation</td>
<td>375</td>
</tr>
</tbody>
</table>
Trending Tweets August 5 – August 11

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

- I've seen more serious vax injuries in my medical practice in the past 6 months than in my previous 30 years combined.
- NEVER FORGET: Senator Ron Johnson wants to END Social Security and Medicare. TELL EVERYONE!
- Sen. Ron Johnson (R-Wis.) has suggested that Social Security and Medicare be eliminated as federal entitlement programs, and that they should instead become programs approved by Congress on an annual basis as discretionary spending. [https://t.co/AvfSSnCWBc](https://t.co/AvfSSnCWBc)
- The US finally declared monkeypox to be a public health emergency. VAX ME UP! STIMMY ME UP! NEOW!
- "No one can force me to quarantine, get a vaccine, wear a mask or register my gun but I can force you to have a child" is peak Republican
- Man tracks down the doctor that gave one of his family members the covid vaccine and they died after taking it... [https://t.co/ceelVHTgw](https://t.co/ceelVHTgw)
- Breaking News: U.S. health officials plan to stretch out the monkeypox vaccine supply by allowing an injection method that uses one-fifth as much per shot. [https://t.co/WhcMicydVyy](https://t.co/WhcMicydVyy)
- One person in New York has contracted Polio and health officials are warning that there may be an outbreak. @Maggie_Vespa is following the story. [https://t.co/LASKcD3gu4](https://t.co/LASKcD3gu4)
- Tune in as I sign two bipartisan bills that will hold those who commit fraud under COVID-19 small business relief programs accountable. [https://t.co/nWDHd1czzc](https://t.co/nWDHd1czzc)
- Ron Johnson just blocked a bill to cap insulin costs at $35 a month. No one should have to choose between a medication their life depends on and putting food on the table. But Ron Johnson doesn’t care—he’s bought and paid for by the pharma lobby.
PA Hashtag Cloud August 5 – August 11

Negative Attitudes August 5 – August 11
Negative Hashtag Cloud August 5 – August 11

Trending Posts on August 5 – August 11

Source: VCTR Project Dashboard

Source: CrowdTangle Dashboard
Trending Posts on Instagram August 5 – August 11

With COVID-19 surging again, is Pa. headed for another deadly fall wave?

SEX WORKERS STRUGGLE TO GET VACCINATED AGAINST MONKEYPOX

Here’s what you need to know about monkeypox in Pittsburgh

In just a few months, the virus went from a handful of reported cases to a public health crisis.

Trending Posts on Reddit August 5 – August 11

Posted 12 days ago to r/LongCovid
Hyberbaric Oxygen Therapy (HBOT) for Long Covid Symptoms

Posted 9 days ago to r/Pittsburgh
CDC Raises Allegheny County Community Covid Level to High After Increase in Hospitalization...

Posted 7 days ago to r/COVID19
COVID in Pa. weekly update, Aug. 10: 9 Midstate counties have above-average positivity rate

Posted 10 days ago to r/CoronavirusUpdate
Calling those with... covid-19 recovery, bebtelovimab (monoclonal antibodies), serious fatigue/cofog
For More Information

- Director Kathleen M. Carley - kathleen.carley@cs.cmu.edu
  - [http://www.casos.cs.cmu.edu/bios/carley/carley.html](http://www.casos.cs.cmu.edu/bios/carley/carley.html)
- IDeaS website - [https://www.cmu.edu/ideas-social-cybersecurity/](https://www.cmu.edu/ideas-social-cybersecurity/)
- CASOS website - [http://www.casos.cs.cmu.edu/](http://www.casos.cs.cmu.edu/)
- Facebook: @IDeasCMU
- Twitter: @IDeaSCMU
- YouTube: IDeaS Center
- Ask to be on our Email-Distro Lists