

Facebook Community Reaction to a COVID-19 Vaccine Trial on the Navajo Nation

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BACKGROUND: COVID-19 has disproportionately impacted American Indians and Alaska Natives in the United States. On September 21, the Navajo Nation, home to the country's largest American Indian reservation, hosted a public Facebook townhall with NIAID Director Dr. Anthony Fauci, Navajo Nation President Jonathan Nez and Vice President Myron Lizer, and Johns Hopkins Center for American Indian Health Director of Infection Disease Programs Dr. Laura Hammitt. The townhall was designed to respond to community concerns and educate community members about the Navajo Nation Pfizer-BioNTech SARS-CoV-2 vaccine trial.

METHODS

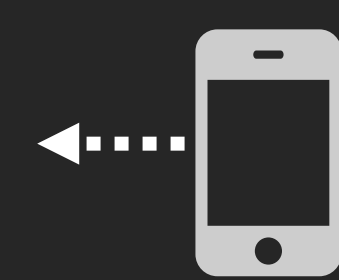
1. Collected **1577 comments** and **744 emoji reactions** from **515 unique Facebook users** posting to the vaccine trial townhall event.
2. Manually coded all user-generated reactions and comments using a **deductive coding scheme** based on the World Health Organization Strategic Advisory Group of Experts Working Group on Vaccine Hesitancy.
3. Identified prevalent **contextual, individual/group, and vaccine-specific themes** focused on (a) **negative vaccine/trial sentiment**; (b) **vaccine hesitancy and concerns**; (c) **vaccine confidence**; and (d) **misinformation**.
4. User metadata (e.g. current city, public posts) was analyzed to determine a connection to the Navajo Nation.

RESULTS

- **837 study-relevant comments:** 240 supportive (28.7%), 240 neutral (28.7%), 276 negative (33%)
- **744 emoji reactions:** 81.7% positive (like or heart emoji)

Social media events insufficiently address historical and contemporary concerns that American Indians have toward biomedical research.

Sentiment	Comments (%)	Themes	Example Comments
		Risk/Benefit	Most of my DNA is Native American. I feel like it's important to know how the vaccine will affect us Natives.
Confidence	240 (28.7%)	Historical influences	The Navajo Code Talkers stepped up and put their lives in danger to save many American lives. Are they not a good example to us? Are we not worthy to save many lives around the world?
		Politics/Policies	I've volunteered for several vaccine trials. No response yet. I'm a strong believer in public health and vaccinations. Effing Trump is making science and vaccines too political and untrustworthy.
Hesitancy and Concerns	240 (28.7%)	Health System and Providers-Trust and Personal Experience	Thank you for the detailed information regarding the vaccine testing. However, it is concerning to volunteer as a minority group. The Navajo Nation was hit hard and have lost loved ones, and historians. It is up to each individual person to volunteer. It's just very shocking that leaders would invite IHS to vaccinate people. Especially when IHS healthcare does not provide adequate and great care. It really makes me not want to go to IHS for any care especially immunizations of any kind. There's a historical distrust, that has not gone away.
Negative Sentiment	276 (33.1%)	Perception of the Pharmaceutical Industry	#WeAreStillHere because of our history of then leadership. HISTORY is not your story to tell or compare to now. #BigPharma don't care about us but about the \$\$\$
		Historical Influences	So, they want a vaccine for all Americans, but they want to sacrifice the First Nations people??
			Dr. Stella Emmanuel has been trying to put the word out that people there is a cure for Covid-19 and that's hydroxychloroquine and zinc, but it seems no one wants to listen.
Misinformation	81 (9.7%)		Watch the video Plandemic I & II, and then decide what the truth is! It's been heavily censored because they don't want the real truth out there!



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Video Event Runtime: 1:09:16

COMMENTERS WHO PROVIDED REACTIONS						
Reactions	Comments	Support n (%)	Neutral n (%)	Negative n (%)	Misinformation n (%)	Not Coded n (%)
Like	367	224 (24.5%)	55 (24.5%)	42 (18.8%)	30 (13.2%)	4 (1.8%)
Heart	241	284 (35.2%)	100 (35.2%)	26 (8.2%)	14 (4.9%)	10 (3.5%)
Angry	82	136 (22.1%)	4 (2.9%)	30 (22.1%)	59 (43.4%)	7 (5.1%)
Concern	32	27 (18.5%)	5 (18.5%)	2 (7.4%)	0 (0.0%)	20 (74.1%)
Haha	9	6 (0.0%)	2 (33.3%)	0 (0.0%)	1 (16.7%)	3 (50.0%)
Sad	7	4 (50.0%)	2 (25.0%)	0 (0.0%)	0 (0.0%)	1 (25.0%)
Wow	6	7 (0.0%)	1 (14.3%)	2 (28.6%)	0 (0.0%)	4 (57.1%)
SUM	744	688 (24.1%)	104 (15.1%)	105 (15.3%)	22 (3.2%)	291 (42.3%)

COMMENTERS WHO DID NOT PROVIDE REACTIONS					
Comments	Support n (%)	Neutral n (%)	Negative n (%)	Misinformation n (%)	Not Coded n (%)
889	74 (8.3%)	136 (15.3%)	171 (19.2%)	59 (6.6%)	449 (50.5%)

ALL COMMENTERS					
Comments	Support n (%)	Neutral n (%)	Negative n (%)	Misinformation n (%)	Not Coded n (%)
1577	240 (15.2%)	240 (15.2%)	276 (17.5%)	81 (5.1%)	740 (46.9%)

Supplementary Table 1. User Sentiment Across Comments and Reactions

CONTEXTUAL INFLUENCES	INDIVIDUAL AND GROUP INFLUENCES	VACCINE/VACCINATION-SPECIFIC ISSUES
Influences arising due to historic, socio-cultural, environmental, health system/institutional, economic or political factors	Influences arising from personal perception of the vaccine or influences of the social/peer environment	Directly related to vaccine or vaccination
a. Communication and media environment b. Influential leaders, immunization program gatekeepers and anti- or pro-vaccination lobbies. c. Historical influences d. Religion/culture/ gender/socio-economic e. Politics/policies f. Geographic barriers g. Perception of the pharmaceutical industry	a. Personal, family and/or community members' experience with vaccination, including pain b. Beliefs, attitudes about health and prevention c. Knowledge/awareness d. Health system and providers-trust and personal experience. e. Risk/benefit (perceived, heuristic) f. Immunisation as a social norm vs. not needed/harmful	a. Risk/ Benefit (epidemiological and scientific evidence) b. Introduction of a new vaccine or new formulation or a new recommendation for an existing vaccine c. Mode of administration d. Design of vaccination program/Mode of delivery (e.g., routine program or mass vaccination campaign) e. Reliability and/or source of supply of vaccine and/or vaccination equipment f. Vaccination schedule g. Costs h. The strength of the recommendation and/or knowledge base and/or attitude of healthcare professionals

Supplementary Figure 1. Working Group Determinants of Vaccine Hesitancy Matrix

References

- Navajo Nation President Jonathan Nez and Vice President Myron Lizer Facebook Page. Live Town Hall with Dr. Anthony Fauci 09.21.20. Available at <<https://www.facebook.com/watch/?v=705392043348302>> [Accessed October 7, 2020].
- World Health Organization. 2014. *Report of the SAGE Working Group on Vaccine Hesitancy*. [online] Available at: <http://www.who.int/immunization/sage/meetings/2014/october/SAGE_working_group_revised_report_vaccine_hesitancy.pdf> [Accessed 16 October 2020].
- Navajo Nation Department of Health. 2020. *COVID-19*. [online] Available at: <<https://www.ndoh.navajo-nnsn.gov/COVID-19>> [Accessed 18 October 2020].
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