

A person is holding a large white protest sign with bold black text that reads "VACCINE LIES & CORRUPTION". The person is wearing a dark hoodie with a white number "8" on the sleeve. The background is dark and out of focus, showing other protest signs, including one that partially reads "MY CHILD SHOULD NOT GET THE VACCINE".

VACCINE
LIES &
CORRUPTION

ANTI-VAX

ONLINE

Analysis of vaccine-related
disinformation in Washington State

March 2019

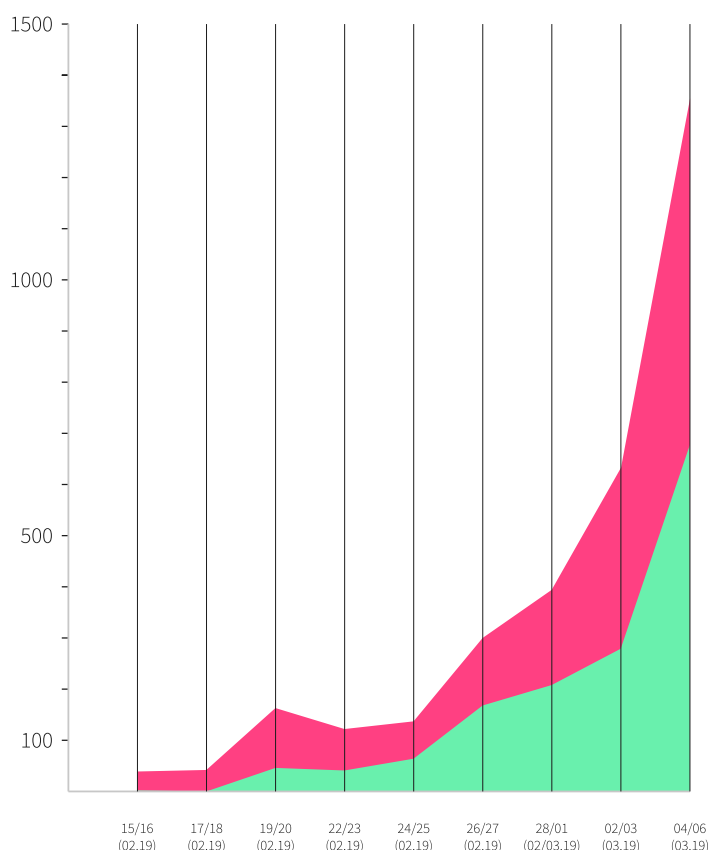
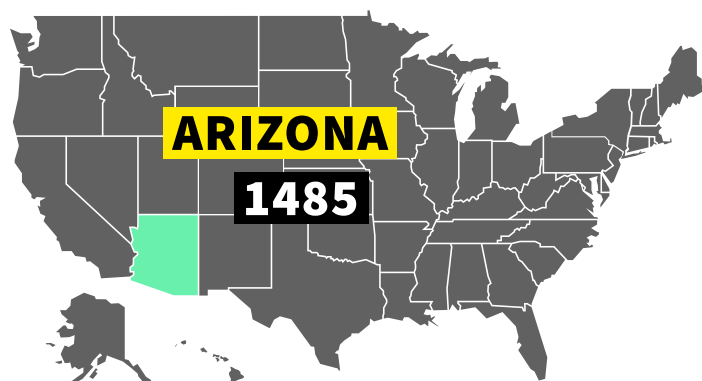
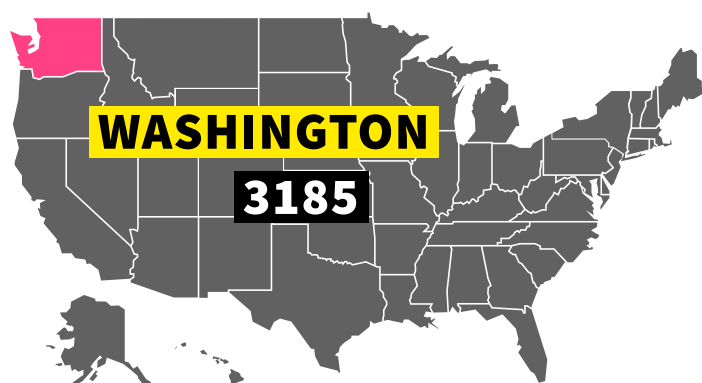
Introduction

The World Health Organisation has identified the anti-vaccination movement as one of the biggest global health threats of 2019. In January, a state of emergency was declared in Washington State following an outbreak of measles.

Moonshot Solutions tracked searches related to vaccine disinformation and the key figures involved in the anti-vaccination movement in Washington State for three weeks from February 15th, 2019. We also tracked searches in Arizona to create a comparison group. Arizona was chosen because of its similar-sized population and the absence of a comparable outbreak. (To date, Arizona has one confirmed case of measles to Washington's 71 confirmed cases.¹)

We recorded a total of **4,670 searches**, 68% of which came from Washington.

Timeline of searches



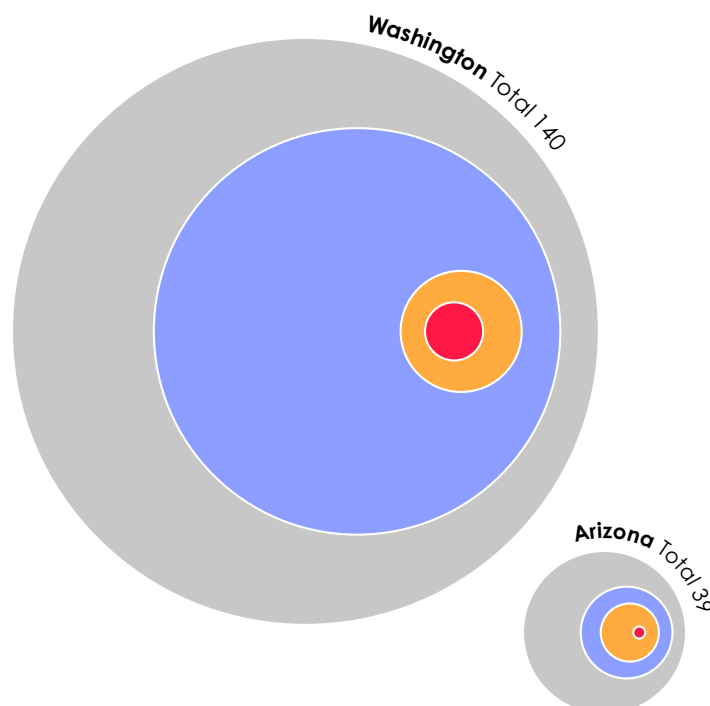
¹'228 Measles Cases Already in 2019: CDC,' WebMD, 12.03.19

Vaccine exemption

Vaccine exemption refers to voluntary refusal to receive a vaccine on the basis of religious, personal, philosophical or other grounds. In response to the widely reported measles outbreak in Washington, lawmakers have sought to advance a bill to ban vaccine exemptions for 'personal reasons'.² News outlets reported that hundreds of people in Washington held rallies in opposition to this proposed bill³ - actions that are indicative of wider concerns surrounding knowledge about vaccinations in the State.

People in Washington conducted more than three times as many searches related to vaccine exemption as people in Arizona.

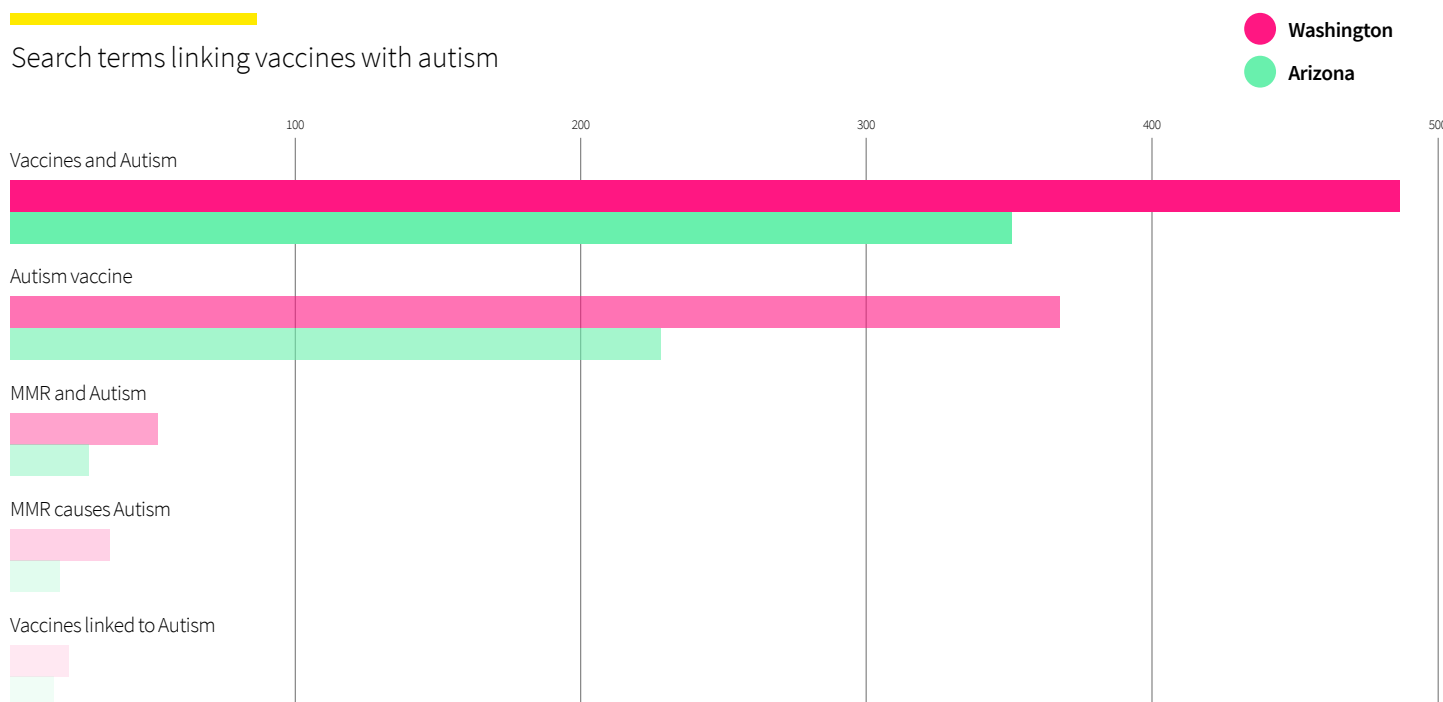
Searches related to exemption in Washington and Arizona



The MMR vaccine & autism

The anti-vaccination movement promotes the myth that the measles, mumps and rubella combined vaccine causes autism. We recorded hundreds of search terms that explicitly linked vaccines and autism. People in Washington conducted 988 searches related to the MMR vaccine and autism; 61% of our overall total.

Search terms linking vaccines with autism



²Washington Lawmakers Advance Bill to Ban Vaccine Exemptions for Personal Reasons Amid Measles Outbreak, Gizmodo, 16.02.19

³Hundreds rally to support vaccine exemptions in Washington state despite measles outbreak, The Oregonian, 10.02.19

Andrew Wakefield

Andrew Wakefield is the author of a research paper published in 1998 which claimed to have identified a link between the MMR vaccine and the emergence of autism in children. According to a British Medical Journal article published in 2011, an ‘ensuing vaccine scare took off’, but ‘Over the following decade, epidemiological studies consistency found no evidence of a link between the MMR vaccine and autism. By the time the paper was finally retracted 12 years later, after forensic dissection at the General Medical Council’s longest ever fitness to practise hearing, few people could deny that it was fatally flawed both scientifically and ethically.’⁴

Despite this, Wakefield is now an anti-vaccine campaigner with significant support, particularly in the United States. Wakefield’s popularity is to some extent reflected in the broad

‘Vaxxed’

‘Vaxxed’ is a pseudoscientific documentary written and directed by Andrew Wakefield. The film promotes the same theories as in his 1998 Lancet paper. The Lancet is among the world’s oldest and most prestigious medical journals. It fully retracted the 1998 publication after the British General Medical Council found three dozen charges proven against Wakefield, including four counts of dishonesty and 12 counts involving the abuse of developmentally delayed children. The Lancet’s editor-in-chief Richard Horton said Wakefield’s paper was “utterly false” and that the journal had been “deceived”.

Nonetheless, Wakefield’s documentary claims that the MMR vaccine is linked to the emergence of autism in children under the age of two, and is in fact contributing to an “epidemic” of autism.

The documentary and its associated YouTube channel Vaxxed TV features a number of celebrities who have become outspoken opponents of vaccinations, including Jenny McCarthy and Robert F Kennedy Jr. Meanwhile, celebrities including Rob Schneider, Jim Carrey, and Robert De Niro have openly sympathised with the views of Wakefield’s documentary.

In Washington State, we recorded 1,162 searches related to ‘Vaxxed’ - more than double the number recorded in Arizona.


range of search terms related to him that were recorded during the data gathering phase. Moonshot Solutions **recorded more than twice as many searches related to Andrew Wakefield in Washington State (432) than in Arizona (207).**



The majority of these searches indicate that the user is trying to watch the film, as evidenced by the inclusion of the names of video streaming platforms in their searches.

Vaxxed: From Cover-Up to Catastrophe shared a live video.
2 October 2017 · 🌐

Jenny McCarthy and Donnie Wahlberg visit the Vaxxed bus!



388 27 comments

Rob Schneider Speaks Out Against Vaccines.
TruthTube1111 • 111K views • 6 years ago
Actor, Rob Schneider talks out against vaccines, parental rights, corporate greed and AB2109. EDUCATE BEFORE YOU ...

RFK Jr. Visits the VaxXed Bus
VAXXED TV • 7.7K views • 1 year ago
While the Vaxxed bus was in New York Robert F. Kennedy Jr. drops by and pays a visit. Camera by Joshua Coleman.

⁴Wakefield's article linking MMR vaccine and autism was fraudulent', British Medical Journal, 06.01.11

Anti-vax on YouTube

Moonshot Solutions conducted primary research into the anti-vax movement on YouTube in February 2019. The aim of this work was to better understand the audience for these videos and use any insights gathered to inform further programming - specifically, programmes designed to redirect people away from anti-vax content by offering them compelling, credible and ultimately factual alternatives.



The anti-vax audience*

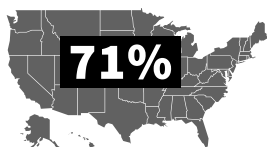
The anti-vax videos we identified have to date received a total of **170 million views** and **4.1 million engagements** (likes, comments, shares and playlist subscriptions)



The most popular and prolific publisher of anti-vax content is alternative medicine channel *iHealthTube.com*



Their most popular videos include **'Every cancer can be cured in weeks'**, **'Chemotherapy is a waste of money'** and **'This is the Best Explanation of the Vaccine/Autism Connection I've Ever Heard!'**



of our anti-vax audience come from the United States

65% of the overall audience is male, but the two largest age groups from each gender are:



Men
45-54



Women
55+

*Based on all available YouTube data up to 4th February 2019

**Based on YouTube data from 1st January 2018 to 31st January 2019

⁵Excluding the channels that comprised our original anti-vax sample



Engagement with other conspiracy theories**

Our anti-vax audience also engaged with a range of other conspiracy theories. Of the top 20 YouTube channels they engage with most⁵, 11 are devoted to conspiracy theories concerned with:

the Earth being flat

red pilling

the New World Order

the Illuminati

the presence of aliens on Earth

chemtrails

and others which publish a variety of fake news stories

More than half of our anti-vax audience have engaged with videos from *aplanetruth.info*, a channel devoted to the conspiracy theory that the Earth is flat.



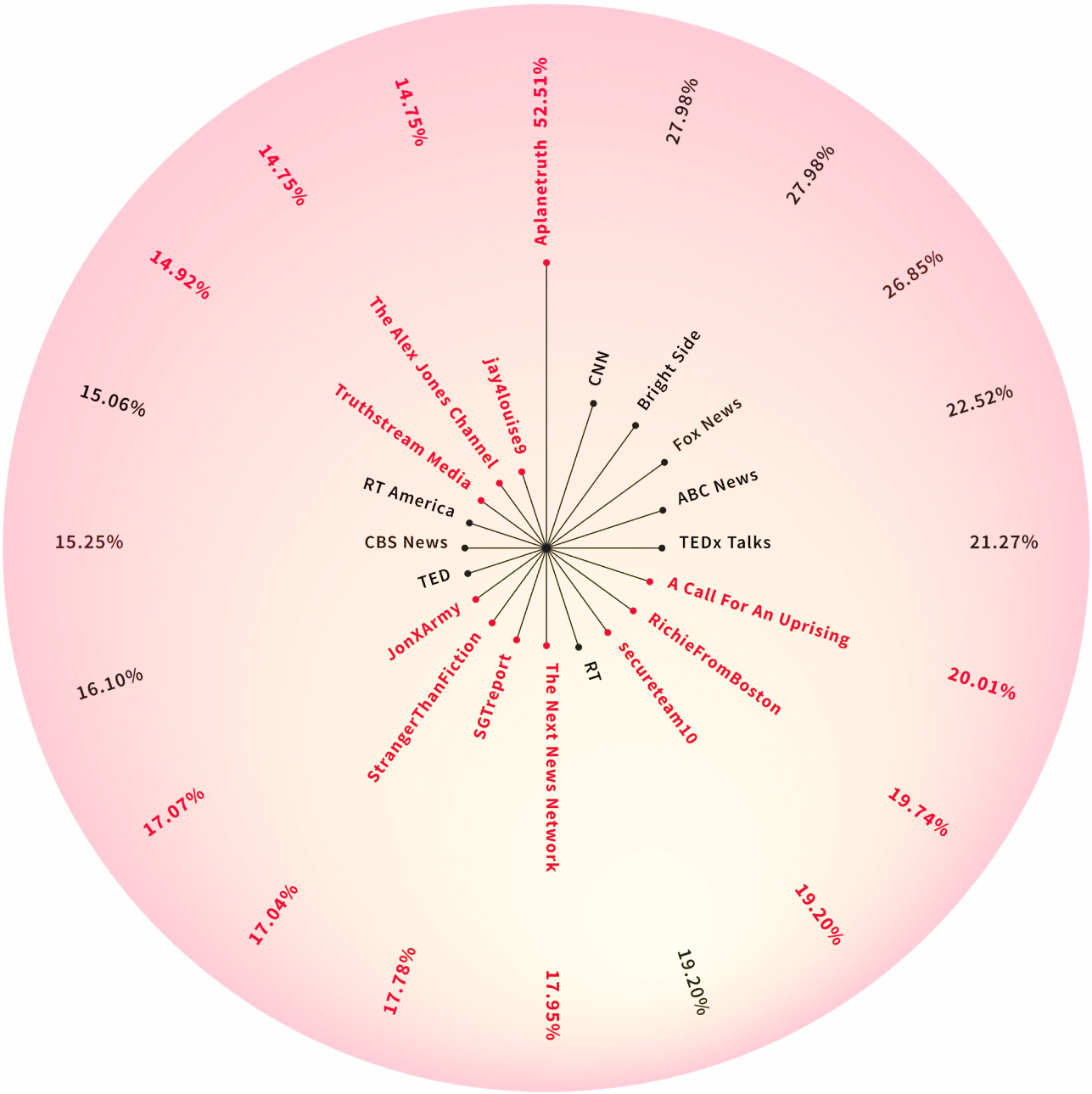
Methodology

We identified 17 channels either solely or primarily concerned with publishing anti-vax content on YouTube. Between them they uploaded 8,135 videos to YouTube between August 2007 and February 2019. We used specialist software to derive aggregate metrics of these videos, such as total views and engagements. The same software is able to estimate the location and gender of each unique YouTube user, but this is restricted only to those users who have engaged with a video; the location and gender of a viewer who has not engaged is therefore not counted.

To identify the other channels our anti-vax audience had most engaged with, we reduced the timeframe down to 12 months (February 2018-2019) and used the same software to draw out the other videos the same YouTube users had also engaged with during that time. This generated a dataset of thousands of other videos, arranged according to how much our anti-vax audience had engaged with them. The results are a clear picture of the other interests of the anti-vax audience.

Other interests of the anti-vax audience

This infographic visualises the other interests of the anti-vax audience on YouTube. The circle represents 100% of the anti-vax audience and the lines represent the other channels. The length of each line signifies the percentage of the total anti-vax audience that have also engaged with content published by one of those channels.



The response from social media companies

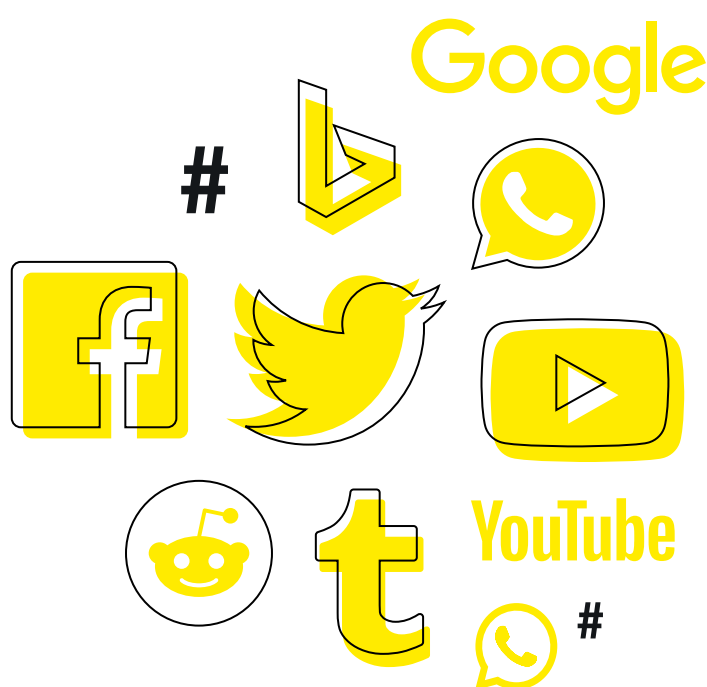
The data we have collected identifies a unique opportunity for social media companies to ‘shape the consumption’⁶ of anti-vax narratives online. Following widespread criticism from lawmakers, journalists and even their own customers, several of these businesses have expressed an intent to tackle vaccine disinformation in a positive, progressive way.

In February, the Guardian reported that all top 12 Facebook groups and eight of the top 12 Facebook pages generated by a search for ‘vaccinations’ promoted anti-vaccination narratives.⁷ In March, Facebook announced it would no longer approve adverts containing disinformation about vaccines. Additionally, Monica Bickert, Facebook’s Vice President of Global Policy Management, confirmed it would reduce the search result rankings of pages and groups spreading vaccine disinformation. YouTube also confirmed that it would remove ads from videos and channels espousing anti-vaccination theories. This was in response to an earlier BuzzFeed feature detailing how general vaccine-related searches on YouTube returned content describing vaccines as harmful.⁸

Such moves by big tech companies are encouraging and welcome. However, there is still work to be done to prevent anti-vax proponents from spreading disinformation online and any platform that provides advertising opportunities to its customers should remain vigilant. Searches on Amazon by the Moonshot project team in mid-March for the documentary ‘Vaxxed’ not only returned the result, but promoted it as a recommended purchase. Several days earlier, Amazon announced they would be removing certain anti-vax books from the site.⁹ At the time of writing, YouTube continues to allow overlay advertisements on content that promotes anti-vaccination narratives¹⁰, and Facebook does

not plan to remove anti-vax content entirely. In the absence of a more rounded strategy to address vaccine disinformation, creators with misinformed or malicious intent can continue to generate revenue from these platforms.¹¹

Big tech could do worse than follow the example set by Pinterest. In 2016 it updated its community guidelines to ensure the ‘promotion of false cures for terminal or chronic illnesses and anti-vaccination advice’ was prohibited.^{12,13} Fast-forward to February 2019 and the company announced it had banned all vaccine-related searches to prevent the spread of disinformation on the platform, while at the same time acknowledging this as a temporary measure in lieu of a ‘more tailored, long term approach’.¹⁴



⁶Congressman Adam Schiff in letters to Youtube CEO Sundar Pichai, and Facebook Chairman and CEO Mark Zuckerberg, 14.02.19

⁷How Facebook and YouTube help spread anti-vaxer propaganda; The Guardian, 02.01.19

⁸YouTube Continues To Promote Anti-Vax Videos As Facebook Prepares To Fight Medical Misinformation; Buzzfeed news, 20.02.19

⁹Amazon removes books promoting autism cures and vaccine misinformation; NBC News, 13.03.19

¹⁰Several videos on iHealthTube.com still feature overlay ads, including this one titled: ‘Know This About Natural or Alternative Cancer Treatments!’ at the time of writing, 20.03.2019

¹¹YouTube pulls ads from anti-vaccination videos after questions about enforcement; NBC News, 22.02.19

¹²Community Guidelines, Pinterest, Inc.

¹³Anti-vaxx propaganda has gone viral on Facebook. Pinterest has a cure; The Guardian, 21.02.19

¹⁴Pinterest blocks vaccine-related searches in crackdown on misinformation; The Independent, 24.02.19

Conclusion

Washington's state of emergency has laid bare the social divisions caused by vaccine disinformation. Attempts by lawmakers and activists to control the spread of a very manageable disease (74 confirmed cases in Washington State, according to its Department of Health) have been met with resistance by people advocating for personal freedom and civil liberties. Several rallies have been held by people who oppose mandatory vaccinations, and organisations such as Informed Choice Washington exploit the fears of those who may be hesitant or fearful of vaccinations.¹⁵

The data we have collected demonstrates a desire among the public for clarity about vaccinations. Unfortunately, the voices that spread vaccine disinformation are able to exploit this uncertainty and cultivate it into a broader distrust in the medical profession, big pharma and evidence-based research. The anti-vaccination movement itself is not new, but the

volume and velocity of content that it publishes and which uses disinformation to undermine empirical, scientific fact - is new. Once an audience no longer accepts evidence-based research, we have to seek to change their minds in a different way. It is not enough to assign responsibility for this emergency on those who perpetuate its mythology. Instead, we must work to understand the needs, wants and fears that drive these beliefs and seek to engage them at a human level.

¹⁵What will it take to tighten vaccination laws in Oregon, Washington? A measles outbreak might help,' *The Oregonian*, 22.02.19



About Moonshot Solutions

Moonshot Solutions is a London-based social enterprise dedicated to undermining the proliferation of harmful content online. We design and deploy new data-driven methodologies and technologies to enhance the capacity of our partners to effectively respond to a wide range of social issues in the online space. Our work ranges from software development, training and capacity building to leading global counter-messaging campaigns.

