

VIRULENT

THE VACCINE WAR

Discussion Guide



For Students & Community Groups
Working Professionals, Medical & Public Health Students



***Virulent: The Vaccine War* shows us what the modern anti-vaccine movement looks like and pushes back with stories of its own... People need to see it.**

**Jonathan Jarry,
McGill Office for Science and Society**



This is a well-done portrait of the American anti-vaxx movement as it's developed over time ... The personal stories offer food for compassion.

**Wendy M. Grossman,
The Skeptic**

Table of Contents

Background Information	05
Documentary Summary	06
Guidance for Facilitators	06
Check-In	07
Discussion Questions:	08
• Students & Community Groups	08
• Working Professionals, Medical & Public Health Students	09
Quotes for Reflection	12
Activities	16
AIMS-Specific Activities	18
Final Words	20
Supplemental Reading + Resources	20
Bibliography	21
Credits	22
Contact Us	22



It is critical that we understand vaccine hesitancy, if we want to protect our children's future. Virulent helps us do that.

Cailin O'Connor, Co-author,
The Misinformation Age



Courtesy RIBI Image Gallery



Andrew Wakefield after losing his medical license
Courtesy Shaun Curry / Getty Images

Background Information

Vaccines are one of public health's most important achievements: they have led to the elimination or eradication of many of the world's most dangerous infectious diseases, such as measles and polio. However, this eradication has been dependent on the public's willingness to accept and take each vaccine, resulting in herd immunity¹. Today, vaccine hesitancy is a growing problem, which poses a severe threat to public health.

The World Health Organization (WHO) defines vaccine hesitancy as “the delay in acceptance or refusal of vaccination despite availability of vaccination services.”

Anti-vaccine sentiment is not new, but the modern-day anti-vaccine movement is often traced back to 1998 when a now-debunked and retracted research study by Andrew Wakefield was published in *The Lancet*,² citing links between the measles, mumps, and rubella (MMR) vaccine and the development of autism in twelve children. This study received a lot of media attention despite the smallness of the study, lack of scientific evidence, and the inability of other researchers to replicate its findings, a necessary feature of scientific research. In 2010, *The Lancet* retracted the paper and Wakefield lost his medical license, but the anti-vaccine movement had already gained popularity

and vaccine hesitancy was on the rise. In fact, this retraction only appeared to strengthen the vaccine hesitancy of those who believed in the study and its author. By 2019, shortly before the onset of the COVID-19 pandemic, WHO declared vaccine hesitancy one of the top ten threats to global health. The COVID-19 pandemic, the introduction of the COVID-19 vaccine, and the proliferation of online vaccine misinformation further exacerbated anti-vaccine sentiments and vaccine hesitancy.

Misinformation is defined as “information that is false, inaccurate, or misleading according to the best available evidence at the time,” while disinformation is defined as “misinformation that is spread intentionally to serve a malicious purpose, such as to trick people into believing something for financial gain or political advantage.”³

Although vaccine rumors and vaccine hesitancy have long existed, modern digital technology, including artificial intelligence (AI), has helped accelerate the amount and spread of misinformation. Misinformation exploits mistrust, uncertainty, fear, and anxiety around vaccines and further fuels vaccine hesitancy.

Summary of Documentary

Virulent: The Vaccine War is a documentary that examines vaccine hesitancy and the spread of vaccine misinformation, especially since the COVID-19 pandemic. The documentary highlights scientific and health experts in immunization who discuss the history of anti-vaccine messages and movements, how the anti-vaccine movement weaponizes history to target minority groups, especially Black Americans, and why the deceptive tactics used in anti-vaccine messaging can be more convincing and compelling than accurate scientific data.

The documentary tries to understand the fears and feelings of people who are hesitant about vaccines, help viewers learn to recognize reliable sources of information, and aid future healthcare providers in improving their communication skills with patients.



Courtesy Dr. Brittney M. Richardson

Guidance for Facilitators

This study guide is designed to be a catalyst for discussion, conversation, and reflection among viewers. It includes activities and guidance for before, during, and after watching the documentary to help bring its educational content to life. Viewers and facilitators are encouraged to engage in active listening, critical thinking, thoughtful analysis, and open, judgment-free conversation throughout the process.

During Viewing

Encourage your group to take notes or jot down questions as they watch the documentary. They can also express their thoughts by drawing or writing words and emotions that come to mind. This approach promotes active listening and keeps viewers fully engaged with the content.



Spanish Influenza Ward, Camp Funston, Kansas, 1918

Check-In

This documentary tackles serious and sometimes controversial issues, which may be uncomfortable for some viewers. Everyone brings their own personal experiences to the viewing. After the film, we recommend holding a debrief session to check in with your group, allowing

them to share how they're feeling and processing the content. This exercise helps build trust between the facilitator and participants, creating a safe and supportive environment for open discussion.



Courtesy Rich Pedroncelli / AP

Some questions could include:

1. How are you feeling today as we begin this conversation?
2. How has your mood or perspective changed after watching the documentary?
3. Has any part of the documentary brought up memories or feelings related to vaccination, the COVID-19 pandemic or, more generally, health or healthcare?
4. What have been your personal experiences with vaccination so far in your life? Please share as much or as little as you feel comfortable.
5. Share a note, word, or question you wrote down during the film that stood out to you.

Discussion Questions

After the check-in, move on to the following reflective questions designed to spark group conversation. Encourage open discussion, allowing participants to engage with one another rather than everyone responding individually to the same question. To foster a collaborative environment, consider arranging the group in a circle, making it easier for everyone to participate and interact.

Please note: The questions are arranged in increasing order of complexity. Choose the ones that best suit your group's level of understanding.



Vaccine advocate Ethan Lindenberg
With Dr. Peter Salk (left) & Dr. Todd Wolynn (right)

Students & Community Groups:

Public Health:

1. In what ways do you think vaccination is similar to and different from other types of health decisions?
2. Some parents interviewed in the documentary decided not to vaccinate their children. How did this have a ripple effect on the communities they live in?
3. How is one's individual health tied to public health? How do we balance personal choice with public health?

Vaccine Hesitancy & Anti-Vaccine Rhetoric:

1. What factors influence whether someone trusts a childhood vaccine? A flu vaccine? What about a new vaccine, like the COVID-19 vaccine?
2. What do you think are the differences between someone who is vaccine hesitant and someone who is anti-vaccine?
3. Why do you think the retracted Lancet article by Andrew Wakefield, falsely linking the MMR vaccine with autism, was so quickly and powerfully used to back the idea that vaccines cause autism, and why does this belief still endure decades later? Do you think something like this could happen again?

Vaccine Communication:

1. What do you think about the growing lack of trust in scientific research and health experts?
2. Why do people trust celebrities and influencers more than health experts when it comes to health decisions?

Vaccine Misinformation:

1. Have you ever believed incorrect information? Think back and discuss any false or misleading information you may have encountered. How did you realize this information was false?
2. Moving forward, how will you know if scientific information found online or elsewhere is accurate?
3. What creative solutions can you think of to stop the spread of vaccine misinformation in your school or community?

Professionals and Students in Medical and Public Health Fields, Including Those in Training or Educational Programs:

Vaccine Hesitancy & Anti-Vaccine Rhetoric:

1. Why do cherry-picked data, scare tactics, and emotion-packed verbiage often appear as valid and perhaps even more compelling than pro-vaccination rhetoric?
2. Why does individual decision-making and risk assessment, as well as the ability to do your own research online, outweigh scientific data and testimony from scientists for many people?
3. There is evidence that overloading people with facts does not help improve vaccine hesitancy and may even strengthen it. What are better strategies to engage patients other than listing facts?
4. How can we make scientific information more accessible and easier to understand?

Vaccine Communication:

1. Is there anything health experts could model from celebrities and influencers when trying to increase vaccine acceptance?
2. The film discusses people who are vaccine hesitant due to fears that vaccines are “unnatural.” These people prefer “natural immunity” to using vaccines, and tend to generally prefer alternative medicines, organic, non-GMO, chemical-free food, water free of fluoride, and home births. Further, the decision to not vaccinate is associated with not taking a risk, whereas choosing to vaccinate is a risk. This leads some people to believe that letting nature run its course is less risky than choosing to get vaccinated. What do you think about this phenomenon?
3. The best counterargument against the idea of natural immunity is that something that is natural is not inherently safer and that choosing to not take an action can be riskier than taking an action—specifically in the case of vaccination. Additionally, individuals who believe in natural immunity and remedies should be approached with empathy and an awareness of the institutional distrust that often drives them to seek natural alternatives. What do you think of this counterargument? Can you think of a more compelling counterargument?
4. What do you think of the ways anti-vaccine groups use the word “freedom” to support their beliefs? Is there a way for public health experts to also use the idea of freedom to support their views?
5. What role does empathy play when communicating with someone about vaccines?
6. If you were in charge of a campaign to encourage vaccination in your community, what strategies would you use?

Vaccine Misinformation:

1. The documentary talks about legitimate grievances related to historical injustices, such as the Tuskegee Syphilis Study, that are exploited by the anti-vaccine movement to build vaccine hesitancy among specific groups. Beyond this, racism still exists in our healthcare system, along with other institutions. How might trust be rebuilt with these groups? How can public health campaigns be more inclusive and culturally sensitive in order to gain the trust of these communities? How can we ensure that vaccine messaging acknowledges past wrongs without fueling further hesitancy?
2. How do we manage the balance between free speech and censorship when it comes to public health? There are various debates surrounding online misinformation and how to deal with it. What role should the government, tech and social media companies, and public health professionals play in dealing with misinformation?
3. If you could create a public health campaign to combat vaccine misinformation, what key messages would you include?
4. How do you think vaccine misinformation contributed to the COVID-19 pandemic?

Vaccine Ethics:

1. Do you agree with a mandate to vaccinate every child other than those with legitimate medical exemptions? Why or why not? If not, what do you recommend and why?
2. Should vaccines be mandatory for certain activities, such as attending school or traveling? Why or why not?
3. How do we balance people's right to self-autonomy and the population's right to public health?
4. What responsibility do social media companies have to stop the spread of misinformation? Do you think removing posts that spread misinformation is the right approach, or does that risk silencing free speech? Why or why not? What do you think about suing social media companies for their role in amplifying misinformation?



Courtesy Heather Hazzan / SELF Magazine

Quotes for Reflection

Below are quotes from the documentary that can serve as conversation starters for your group. Encourage open debate and discussion around each quote, allowing participants to share their perspectives and engage in meaningful dialogue.

Discuss the argument that vaccine-hesitant individuals are often motivated by values of either liberty or purity. Do you agree with this perspective? Why might anti-vaccine messages resonate with people who hold these beliefs?



The anti-vaccine camp can come from two schools of thought—liberty or purity. Liberty—you can't tell me what to do with my body or my child's body. Purity—I don't want toxins and chemicals injected into my body.

Dr. Todd Wolynn,
Pediatrician, CEO of Kids + Pediatrics

Consider how the following quotes could help guide a conversation with someone who believes that vaccination is not natural. Reflect on how you might use these insights to address their concerns.



Disease absolutely is natural. In fact, during the pre-antibiotic era, it was natural that people would die as a consequence of those natural processes.

Dr. Terence Dermody,
Chair of Pediatrics, University of Pittsburgh School of Medicine



Mother nature has been trying to kill us since we crawled out of the ocean onto land. The only reason we live 30 years longer now than we did 100 years ago is that we have fought back actively and hard.

Dr. Paul Offit,
Director, Vaccine Education Center, Children's Hospital of Philadelphia

How do the following quotes illustrate the concept that “in the era of vaccines, we are victims of our own success”? Share your thoughts on this topic.



I was born in the year of the Salk vaccine, 1955. During that decade, we saw epidemics of polio that killed thousands and crippled tens of thousands. Nobody can share with you the experience of a child of a family from the neighborhood who was a star athlete and now cannot walk. Nobody can share that story because it's a story that does not occur in our country any longer.

Dr. Terence Dermody,
Chair of Pediatrics, University
of Pittsburgh School of Medicine



We eliminated smallpox, a disease that's probably killed 500 million people in the world's history. Whooping cough would kill 8,000 children a year. Rubella would cause 20 to 25,000 cases of birth defects every year. Pneumococcus would cause tens of thousands of cases of pneumonia, meningitis, and bloodstream infection. So vaccines have saved our lives and allowed us to live longer. The only reason that we now question them is because at some level, vaccines have been a victim of their own success.

Dr. Paul Offit,
Director, Vaccine Education Center,
Children's Hospital of Philadelphia

Read this quote and reflect on how our media consumption habits can influence public health. Why do you think some people choose to conduct their own research and gather their own information instead of relying on experts in the field?



There was a time where there were established gatekeepers that most people turned to for information. And now we're sort of all in this era where we are trying to assemble our own truth rather than having it handed to us.

Kevin Roose,
NYTimes Tech Columnist

The following quote illustrates how anti-vaccine groups use emotional appeals and storytelling to spread misinformation about vaccines. How could science and medical experts similarly use emotions and storytelling to promote vaccine acceptance?



I think we're compelled by anecdotes. It's hard to argue against anecdotes with statistics. So, for example, there are people who have reported that a child got a vaccine and turned into the Incredible Hulk. Anybody can report anything. So that's what you're always arguing against. It's hard to make statistics compelling and compassionate and fun and convincing.

Dr. Paul Offit,
Director, Vaccine Education Center,
Children's Hospital of Philadelphia

In the film, some experts mentioned that while vaccines do generate profit, it's much less than other pharmaceutical products. Do you believe that the fact money is made from vaccines affects the trustworthiness of the process? How does this compare to other products and professions where profit is also a factor?



If you were looking to make a lot of profit, vaccines would be the last place you would look. You would look at Viagra, or drugs for chronic conditions, like high blood pressure and diabetes.

Dr. John V. Williams,
Chief, Pediatric Infectious Diseases, University of Pittsburgh



1802 cartoon by James Gillray depicting anti-vaxxers' predictions of the cowpox vaccine's effects

Activities

Now that the group has reflected on important themes in the film and connected them to their own experiences, you can move on to some of the following activities. These activities aim to transform education into action through real world scenarios.

Evaluate Health Information:

Have each student work individually or divide the class into small groups of 2-3 people. Each person or group will locate a piece of health-related information from a social media platform such as Facebook, X, Instagram, LinkedIn, or TikTok. This could be a post, article link, video, infographic, or any content discussing a health topic. Determine whether the information is factual (supported by credible sources and aligns with established scientific knowledge), misleading (contains some truth but is presented in a way that could misinform or confuse the reader, possibly omitting important context), or false (the information is incorrect, not supported by evidence, and contradicts reliable scientific consensus). To do this:

- Identify who created the content.
- Research the author's credentials and the reputation of any organizations involved.
- Check for references to scientific studies, official statistics, or expert opinions that support the claims made.
- Look for signs of bias, emotional language, or logical fallacies that might indicate an attempt to manipulate the audience.
- Ensure the content is up-to-date, as outdated information can be misleading.

Each person or group will present their selected piece of content to the class:

- Describe the content and its main message.
- Walk through the steps taken to evaluate its accuracy.
- Reveal whether the content was factual, misleading, or false.
- Discuss any difficulties encountered during the evaluation.
- Reflect on what this exercise taught you about assessing health information online.

After all presentations, engage in a group discussion about common patterns in misinformation, the challenges of identifying credible information, and strategies to improve media literacy.

Role Playing Activity:

Divide the group into pairs. In each pair, one person will take on the role of a vaccine-hesitant patient, while the other will act as a healthcare provider trying to address their concerns and build trust. After the first round, switch roles so that both participants experience the perspectives of the patient and the healthcare provider. Encourage participants to focus on understanding the thoughts, emotions, and concerns of the vaccine-hesitant individual, while the healthcare provider should practice building trust through empathetic communication. After the role-playing exercise, come together as a group and invite everyone to share their experiences. Discuss challenges, lessons learned, and any insights related to effective communication strategies for addressing vaccine hesitancy. Identify who created the content.

Group Debate:

Debate the ethics of vaccine mandates and personal autonomy. Divide the group into two teams—one side will argue in favor of vaccine mandates and the other in favor of personal choice. Each team will research the benefits and drawbacks of their assigned position, preparing evidence-based arguments that address public health, individual freedoms, and the role of misinformation. The debate will follow a structured format (opening statements, rebuttals, closing statements), and the rest of the class will act as the audience and vote on the most persuasive argument.

Panel Discussion:

Discuss vaccine hesitancy with local health experts. Invite local healthcare professionals (such as doctors, public health officials, and communication specialists) for a panel discussion about vaccine misinformation and hesitancy. Prior to the panel, have students prepare questions around how misinformation impacts vaccine uptake, how health professionals handle vaccine-hesitant patients, and strategies used to rebuild public trust in vaccines. Students will then attend the panel, ask their questions, and reflect on the discussion in a follow-up class activity.

AIMS-Specific Activities⁴ (for those enrolled in training programs for healthcare providers)

Students will learn how empathy and active listening can build trust with vaccine-hesitant individuals.

Role-Playing, Empathy, and Trust:

Practice using the AIMS approach (**A**nnounce, **I**nquire, **M**irror, **S**ecure) in a patient-provider setting to address vaccine hesitancy. Divide students into pairs. One student will role-play as the healthcare provider, and the other as a vaccine-hesitant patient. The provider will practice using the AIMS approach:

- **Announce:** Start with a statement about vaccination (e.g., “Today we’re going to give you your flu shot”).
- **Inquire:** If the patient expresses concerns, ask open-ended questions to explore their hesitancy.
- **Mirror:** Reflect back what the patient says to show understanding.
- **Secure:** Provide facts and attempt to build trust, even if the patient chooses not to vaccinate.

After each round, students will switch roles. Then, the pairs will discuss their experience and share their reflections with the larger group, considering:

- How does mirroring a patient’s concerns build a sense of understanding?
- What role does empathy play in making the patient feel heard and understood, even if they don’t immediately change their mind?
- How can healthcare providers balance their extensive knowledge and expertise with empathy for personal fears or misinformation?

Analyzing Misinformation on Social Media:

Identify, analyze, and debunk vaccine misinformation using scientific evidence and the AIMS approach. Have students find a piece of vaccine misinformation from a social media platform. In groups of 3-4, students will analyze the misinformation by answering:

- What type of misinformation is being presented (conspiracy theory, pseudoscience, etc.)?
- Why might this misinformation be persuasive to a certain audience?
- How could a healthcare provider use the AIMS approach to respond to someone who believes this misinformation?

Each group will then present their findings, explaining how they would address the misinformation using the AIMS framework.



Scarlett Ronbeck with whooping cough
Courtesy Rebecca Stonham / McMasters Hospital

Final Words

Vaccine hesitancy is a complex topic, and there are no easy answers to resolving the growing distrust of vaccines, public health officials, and healthcare systems. This study guide is designed to be a beginning step to address vaccine hesitancy through conversations and an open exchange of ideas among various audiences, informed by the information presented in *Virulent: The Vaccine War* and the supplemental resources provided below.

As misinformation spreads, it is more important than ever to engage in critical thinking and thoughtful discussion on this topic. We encourage you to continue these discussions beyond the classroom, using the prompts to engage in meaningful conversations with other people in your life.

Take Action: Supplemental Reading + Resources

- [History of Vaccines](#)
- [Children's Hospital of Philadelphia Vaccine Education Center](#)
- [Immunize.org](#)
- [The Vaccine Confidence Project](#)
- [The AIMS approach: regulating receptivity in patient-provider vaccine conversations](#)
- *How Vaccines Work* by David Miles, PhD
- *Deadly Choices: How the Anti-Vaccine Movement Threatens Us All* by Dr. Paul Offit
- *Bad Advice: Or Why Celebrities, Politicians and Activists Aren't Your Best Source of Health Information* by Dr. Paul Offit
- *The Doctor Who Fooled the World* by Brian Deer
- *Preventing the Next Pandemic* by Dr. Peter Hotez
- *Stuck* by Heidi J. Larson, PhD
- *The Panic Virus* by Seth Mnookin, Director, Graduate Program, Science Writing, MIT
- *Polio: An American Story* by David Oshinsky, PhD

Bibliography

1. According to the World Health Organization (WHO), ‘herd immunity’, also known as ‘population immunity’, is the indirect protection from an infectious disease that happens when a population is immune either through vaccination or immunity developed through previous infection. WHO supports achieving herd immunity through vaccination, not by allowing a disease to spread through any segment of the population, as this would result in unnecessary cases and deaths.
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4. Parrish-Sprowl, J., Thomson, A., Johnson, R. D., & Parrish-Sprowl, S. (2023). The AIMS approach: Regulating receptivity in patient-provider vaccine conversations. *Frontiers in Public Health*, 11. <https://doi.org/10.3389/fpubh.2023.1120326>

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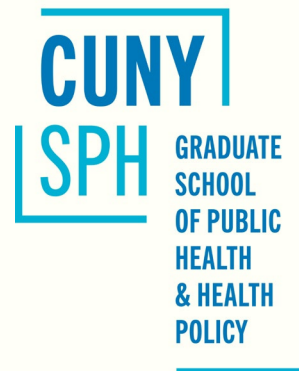
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Contact Us

We'd love to hear from you! Let us know about your group, how you used the discussion guide, and any feedback you'd like to share.

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To learn more, visit: www.virulentmovie.com