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# A Plague On All Our Houses: The Necessity of Childhood Vaccines

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### Introduction

When bacteria and viruses enter the body, they attack and multiply; therefore, we get sick. However, our bodies are equipped with immune systems, which not only destroys the germs, but help us gain immunity from future attacks.<sup>1</sup> Vaccines were developed to enable our bodies to become immune to many diseases; without having to become ill. A vaccine injects weakened or dead pathogens into the body, which naturally triggers the immune response that builds immunity.<sup>2</sup> Vaccines are nothing short of a medical miracle, as they prevent the spread of many dangerous diseases associated with childhood, such as the measles, chickenpox, and polio. Despite the proven effectiveness, an alarming number of parents are choosing not to vaccinate their children. As a matter of fact, in 2012, 49 states were below a safe threshold for pertussis (whooping cough), which lead to the most severe outbreak since 1955.<sup>3</sup>

Why, exactly, are parents choosing to defy the overwhelming recommendation to vaccinate able and healthy children? As a parent myself, I find it extremely alarming that so many of my peers choose to not vaccinate their children. When I try to see it from their perspective, I can understand the skepticism: A load of irresponsible media, false claims linking vaccines to autism, and the accessibility of bad information on the internet have perpetuated the anti-vaccine movement, and turned vaccinations from a medical marvel into a poison apple.

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<sup>1</sup> Center For Disease Control, "How Vaccines Prevent Diseases." Last modified 03 August, 2012. Accessed December 2, 2013.

<sup>2</sup> Center For Disease Control, "Immunization: The Basics." Last modified 06 July, 2012. Accessed December 2, 2013.

<sup>3</sup> Ficshetti, Mark. *Scientific American*, "Too Many Children Go Unvaccinated." Last modified June 05, 2013. Accessed December 1, 2013.

This project addresses the growing vaccine controversy, by utilizing advertisements, a fictional interview, and a frequently-asked-questions article to build and reinforce the argument against the anti-vaccine movement. The articles and advertisements are laid out in an accessible magazine format, specifically aimed at parents.

The opening piece kicks off my ad campaign, and is the first in a series of three pro-vaccine advertisements. In the spirit of the holiday season, I juxtaposed positive sentences such as “spread joy” and “spread love” against “don’t spread whooping cough.” Together, the shape of the sentences form a holiday tree. This advertisement is specifically designed to be the first point of reference for the audience; since it does not rely on medical terms the audience may be unfamiliar with, it does not intimidate or discourage them. On the contrary, it draws them into the next article.

The next article, an interview with the fictional Josie DiMarco, details her son’s near-fatal brush with the measles. This piece illustrates the consequences of not vaccinating children, while employing pathos to enhance the impact on the target audience. This interview is rooted in a true story: Earlier this year, an anti-vaccinating Texas megachurch was the epicenter of a measles outbreak. In addition, 2013 has had the most measles outbreaks in more than ten years; therefore, I felt an account about this particular disease would be highly relevant and beneficial.<sup>4</sup> Since many parents of my generation have not witnessed firsthand many of the (now-preventable) diseases, we are not able to fully grasp the effect that they have. By illustrating a realistic struggle, I hope parents realize that choosing to not vaccinate does not give their child immunity to the detrimental repercussions of diseases.

The following advertisement discusses herd immunity, which reinforces the key points introduced in the previous article. Herd immunity, which means that if the majority of the population

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<sup>4</sup> Cohen, Elizabeth. CNN "U.S. Measles Cases in 2013 May Be Most in 17 Years." Last Modified August 2013. Accessed 30 Sept. 2013

is vaccinated the disease will not be able to spread, is a key point in the argument for vaccinations; therefore, I aim to maximize its visibility.<sup>5</sup> It also sets the stage for the next article, which will discuss concepts such as herd immunity in greater detail.

The frequently-asked-question piece is the heart of my project. It stages the most common arguments from the anti-vaccine movement, and refutes them with scientific facts. Most of the concerns in the anti-vaccine movement have very little basis in science; often, they are loosely based on truth, but twisted and contorted until little fact (and lots of fear mongering) remain. Since the article is presented as a question-and-answer session, it is easy to read, follow, and understand, which demystifies vaccines in a non-intimidating manner.

The final advertisement utilizes concepts in the previous articles, and applies them to real-life situations. Pox parties, where parents willingly expose their children to the chickenpox to “get it over with” (or naturally gain immunity), were common in the 80s and early 90s. Because many modern-day parents were exposed to pox parties— and successfully lived through the chickenpox —the danger of this activity is extremely downplayed. The ad, which is very nostalgic, reminds the reader that pox parties are antiquated and simply a bad idea.

My mini-magazine is intended to raise awareness: The anti-vaccine movement is not a safe or logical bandwagon to jump on. By demonstrating real consequences and dispelling common misconceptions about vaccinations, skeptical parents should be compelled enough to at least consult their child’s pediatrician about what decision is best for their family. Vaccines prevent our children from contracting many potentially fatal diseases; and when a parent chooses not to vaccinate their child, they are not only putting their family at risk, but the family of those they are exposed to.

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<sup>5</sup> The National Institute of Allergy and Infectious Diseases. Community Immunity ("Herd Immunity"). Last modified 9 Sept. 2013. Accessed 30 Sept. 2013.

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# ModernParent

SPECIAL  
EDITION  
FALL  
HIGHLIGHTS  
ISSUE

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# Vaccine Edition



## 2013

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This holiday  
Spread joy.

Spread laughter.

Spread cheer.

Spread love.

Spread good tidings.

Spread happiness.

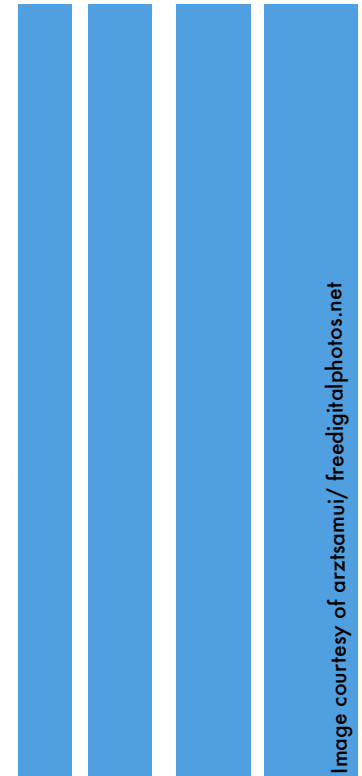
Don't spread  
whooping cough.

**Get the  
facts.**



# The Anti-Vaccine Movement: An Epidemic

By Nicole Schlesinger



WHEN JOSIE DIMARCO AND HER newborn son, George, joined the Rocky Mountain Community Church four years ago, she knew her life was destined to change. What she didn't know was that her son's life would be hanging by a thread before his fifth birthday. Caught in the center of the worst measles outbreak in recent history, DiMarco gives an exclusive look into the anti-vaccination ideology

advocated by northern Colorado's largest church, and how it nearly took her son's life.

Josie DiMarco and I meet at a small playground, George walking happily by her side. George flashes me a tentative smile as he leans into his mother; a slight grin plays across her face as she pats his head. "That's the lady who is going to write a story about us," DiMarco tells him.

Immediately, George's eyes light up. He reaches out his chubby hand for me to shake, and introduces himself with the patented gusto of a preschooler. He then turns to the playground and sprints toward the playground before his mother and I can bore him with any more formalities. DiMarco gently sighs as her eyes follow her son as he scales the equipment, with the same loving grin playing on her lips.



**ModernParent:** Are you sure this is the same kid who was hospitalized less than a month ago?

**DiMarco:** I'm pretty sure! Aside from getting tired a little more quickly, he is completely back to normal. Thankfully.

**ModernParent:** What, exactly, happened to George?

**DiMarco:** George was one of the thirty people in Weld County to get the measles. He got the basic symptoms: rash on his body and inside of his mouth, cough, fever, the works. But then he suffered complications. One day, his lips were sort of bluish and he was breathing very quickly. His fever was also around 103°. Needless to say, we rushed to the emergency room. He had a pneumonia, which isn't uncommon in small children with the measles. He was hospitalized and given some pretty strong antibiotics. It definitely is not an event either of us cares to repeat.

**ModernParent:** I can't imagine it would be. Is he vaccinated now?

**DiMarco:** His doctor and I are working to get him on track. Honestly, we are lucky. George has never been vaccinated, not even as a baby. He's always been a tough little guy, but I'm not sure he would've survived this in his first couple years of life.

**ModernParent:** Why hadn't George been vaccinated?

**DiMarco:** We joined the church when George was a literally a newborn. Pastor Tom Young and I had extensive discussion about divine healing. God would look after my son and his health. Plus, we discussed the rumored risks associated with vaccinating your child. I was told that they were linked to autism, mercury poisoning, and basically just used as an cash cow for the pharmaceutical industry. I was a new mom, and the idea of injecting poison into my child was repulsive.



**ModernParent:** Obviously, your views have changed.

**DiMarco:** Absolutely. Though I still love and respect my church and Pastor Tom, I have chosen to vaccinate my child. I've done a lot of research and learned that vaccines aren't linked to autism. They're not loaded with poison either. I've also learned about herd immunity, which would've prevented George, and the thirty other people, from getting so sick.

**ModernParent:** Were all thirty people members of Rocky Mountain Community Church?

**DiMarco:** From what I understand, several were members of the congregation since most of us weren't vaccinated. A couple cases, however, weren't from our church. The news called it an epidemic, which is a scary, scary word. They covered a piece about a middle schooler who got it. I guess she couldn't medically be vaccinated because of an autoimmune disorder, so she caught the measles. People in her position rely on herd immunity, which basically means that if a lot of people are vaccinated, contagious diseases aren't rapidly spread and can be contained.

**ModernParent:** What would you say to parents who are struggling with the decision to vaccinate their child?

**DiMarco:** George's illness was the scariest time of my life. The entire ordeal was terrifying for both of us, and it ultimately could have been prevented. Do your research. There's a lot of talk and most of it isn't backed by fact. All parents have the right to choose what is best for their children; but it's their responsibility to ensure their decisions don't endanger their child or others.



To learn more about Josie and George DiMarco, visit our website at [www.modernparent.com](http://www.modernparent.com)

It's better to be part of the herd:  
Herd immunity saves lives.



**Get the facts.**  
**[www.whyvaccinate.org](http://www.whyvaccinate.org)**



## Vaccination Corner: Frequently Asked Questions

Last issue, we published “The Anti-Vaccination Movement: An Epidemic” by staff writer Nicole Schlesinger. In the article, Schlesinger interviews Josie DiMarco, a member of the Rocky Mountain Community Church, which has recently suffered one of the worst measles outbreaks in modern time. The church, DiMarco explains, takes an anti-vaccine stance, as they believe in divine intervention. Hoaxes that vaccinations

may contribute to autism in children reinforce this ideal.

The interview with Josie DiMarco, who now works to raise awareness within the anti-vaccination community, generated a heated stir among our community readers. *ModernParent* internet forums and inboxes have been buzzing with dialogue from both sides of the issue. As a result, we are revisiting the article, specifically to answer

common questions that you, our readers, have been asking.

Though we take pride in our journalistic integrity, sources, and medical correspondents, the esteemed writers of *ModernParent Magazine* are not medical professionals. Ultimately, we strongly encourage you speak with your child’s pediatrician about any questions or concerns you have.



Dear *ModernParent*:

Although your article on vaccines was interesting to read, it left me with more questions. Why, exactly, should I vaccinate my child? Aren't the improved living conditions (clean water and food especially) enough to eliminate vaccines?

Kelly, CA

Kelly,

Vaccinations are intended to prevent your child from getting sick. The Center for Disease Control (CDC), American Academy of Pediatrics (AAP), National Institutes for Health (NIH), Food and Drug Administration (FDA), and World Health Organization (WHO) all advocate children to be routinely vaccinated to prevent the spread of diseases, such as pertussis (whooping cough). The early 20th century was a wonderful time for medical science, as they perfected ways to develop vaccines on a large scale: By the 70's and 80's, the recommended comprehensive vaccine schedule has significantly reduced instances of these diseases (which means that our generation hasn't seen the ravaging effects of these diseases first hand).

Improved living conditions certainly contribute to the healthfulness of society; however, these advancements do not eliminate all diseases. Doctors are aware of how improved living has eradicated some diseases. For instance, I was never vaccinated against smallpox, whereas my mother was. On the flip side, I was never vaccinated against chicken pox, but my daughter is.

Dear *ModernParent*:

I am leaning toward not vaccinating my baby. Last month's article encouraged me to look into why I am making that decision and evaluate if that's the best choice for my family. Despite the advocacy of vaccinations, I'm nervous about what ingredients are actually in vaccines. I've heard about formaldehyde and mercury, for instance, which is not something I want in my child's body.

Ben, OR



Image courtesy of David Castillo Dominici/freedigitalphotos.net

Ben,

One of the primary arguments in the anti-vaxing community is based on the ingredients. This point is absolutely understandable, since the ingredient lists can be absolutely daunting. However, fear not, concerned parent (and don't stop reading after I list these potentially scary sounding ingredients). According to the CDC, there are six common ingredients found in vaccines: antibiotics, egg protein, formaldehyde, monosodium glutamate (MSG), and thimerosal.

**Aluminum** helps make the vaccine effective, and is mostly filtered from the body. Aluminum naturally occurs in food, including breast milk! As a matter of fact, practically all of the aluminum accumulation found in the body comes from food and would occur regardless of vaccinating your child.

**Antibiotics** prevent bacterial growth in vaccines while they are being stored. The CDC notes that penicillin is never used in vaccines.

**Egg protein** is most commonly found in the flu vaccine. Often, viruses are cultured in egg protein, which can leave scant amounts. If your child has an egg allergy, alternative recommendations can be made.

**Formaldehyde** can serve two purposes. In layman's terms, it helps prevent contamination in the vaccine and helps inactivate bacteria, which allows the body to develop an immunity. Here's the thing about formaldehyde: It's mostly removed

before the vaccine is packaged. Scant amounts may be found in a couple vaccines.

You are likely familiar with the substance **MSG**, because you have consumed American-Chinese food. In short, MSG is used as a flavor enhancer, derived from an amino acid. So why is this in some vaccines? MSG is used in a couple vaccines to prevent them from experiencing chemical changes, which can occur with a change in temperature and light. The amount of MSG found in these vaccines is smaller than the amount you consume in processed foods.

**Thimerosal** is a preservative that contains mercury. Thimerosal has been largely eliminated from vaccines. Some vaccines do have very small trace amounts; less than 1 part per 10,000.

*“We do see an occasional family who chooses not to vaccinate their children. Though I respect this decision, I don't agree with it.”*

-Dr. William Sears

Jessica,

In a previous vaccine FAQ, Dr. William Sears addresses this issue. He states, “The great majority of patients in our pediatric practice are fully immunized, but we do see an occasional family who chooses not to vaccinate their children. Though I respect this decision, I don't agree with it. I encourage parents to get all the immunizations recommended by the American Academy of Pediatrics.” He proceeds to explain how many vaccinations weren't available when he began practicing medicine, and the repercussions of now-preventable diseases were grim. He continues to state, “I don't want to see history repeat itself and that's why I support the current immunization program. Infants and children are much healthier because of it.”

Vaccines are effective on a large scale because of the principle of “herd immunity.” Basically, herd immunity prevents the spread of contagious diseases by protecting people from becoming infected, therefore contagious. Medically, some people, such as pregnant women, infants under a certain age, and those with extremely weak immune systems, cannot be vaccinated. When parents choose not to vaccinate their child, not only can their child get sick, but the aforementioned individuals can, too. Therefore, parents who choose not to vaccinate are actually *endangering* those who are medically unable to be vaccinated.

Dear *ModernParent*:

If your vaccines “work so well,” why is my non-vaccinated child “dangerous”?

Jessica, CO



Image courtesy of David Castillo Dominici/freedigitalphotos.net

For the entire month of September, *ModernParent* will continue to collaborate with doctors to answer questions about vaccines on our website, [www.modernparent.com/vaccinecorner](http://www.modernparent.com/vaccinecorner). The VaccineCorner is a new addition, loaded with information, resources, and forums on the topic of vaccinating.

Again, we encourage all parents to continue the dialogue about vaccines with their child's doctor.

We appreciate and have enjoyed your responses and discussion on this topic.

# Pox parties are so 1987.



Get the facts.  
[www.whyvaccinate.org](http://www.whyvaccinate.org)

## Final Writer's Statement

Magazines are an excellent medium to convey important information in a succinct, efficient, and readable fashion. Magazines are not simply limited to one type of artistic statement: Advertisements, text pieces, and pictures can be woven together to maximize impact. Therefore, an incredibly diverse audience can be reached. In addition, magazines are widely distributed. We find them in the grocery stores, waiting rooms, and on many household coffee tables. Despite the rise of the internet, magazines are still fighting to remain relevant in our digital world— and they are holding their ground. For these reasons, I chose to create a parenting magazine to address the issue of the rising anti-vaccine movement.

The magazine is immediately accessible to my target audience: Parents. I employ bright color associated with childhood. Reoccurring bright greens, custard yellows, and bold blues create a nonthreatening atmosphere. Throughout the magazine, the typography is clean, but not harsh. On the cover, “Vaccine Edition” is penned in a unique style; though different, it is not offensive or hard to read. It adds a personal touch, like a signed note from the editor. By labeling the issue “special edition,” I am piquing the interest of those who would perhaps not read the issue otherwise. Therefore, I’m targeting more than just parents: Caregivers, daycare providers, and even health professionals may decide to thumb through.

This issue of *ModernParent* features a pro-vaccine ad campaign, an interview that illustrates the detrimental consequences of not vaccinating, and a frequently-asked-questions article. If a reader were to simply flip through the pages of this issue, ignoring the text, the ads would communicate the same messages, though not in extensive detail. Since the population of unvaccinated children is on

<sup>1</sup> Ficshetti, Mark. *Scientific American*, "Too Many Children Go Unvaccinated." Last modified June 05, 2013. Accessed December 1, 2013.



the rise, the articles communicate that vaccinating is, indeed, very important.<sup>1</sup> The three ads build and reinforce basic principles and facts about vaccines. Their sequencing is much like getting into a pool; rather than jumping in, which may overwhelm many casual magazine readers, each piece sets the stage for the next, so the audience is slowly wading into the water. These advertisements also serve a higher purpose: They are rather like concept reinforcement for the articles.

The advertisements are diverse in appeals. They most effectively utilize logos and pathos with their visual and simple yet sensical statements, but they also help establish ethos. Each ad has a motif: "Get the Facts," followed by an .org web address. Since these ads are featured in a parenting magazine devoted to vaccine education, rather than a tabloid, the reader can infer that this website is reputable. The reader can then begin conclude that all of the articles are well-researched. I designed the ads to not only compliment the articles, but reassure the readers that they are not filled with bad information.

The articles are designed to piggyback each other. If the magazine were a performance, the interview would be the opening act, and the frequently-asked-questions article would be the main attraction. The interview is the most pathos-heavy piece. It tells the tale of a mother, Josie DiMarco, who chose not to vaccinate her son on the recommendation of her church. She was then faced with her son suffering from complications of the measles. This interview is based in fact; recently, a Texas megachurch caused a measles epidemic, as they encouraged their huge congregation not to vaccinate.<sup>2</sup> The interview lightly discusses the scientific basis behind vaccines; concepts such as herd immunity are introduced in this article, which are further discussed in FAQ. I use DiMarco to carefully weave a pro-vaccination argument into her story, which will illicit a strong pathos response from parents.

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<sup>2</sup> Silverman, Lauren. NPR, "Texas Megachurch At Center of Measles Outbreak." Last modified September 1, 2013. Accessed December 2, 2013.

The FAQ article expands DiMarco's story. It address the main arguments in the anti-vaccine movement, gently refuting them with facts and research provided by the Center For Disease Control, The National Institute of Allergy and Infectious Diseases, Children's Hospital of Philadelphia, and the Food and Drug Administration. It also uses direct quotes from renowned pediatrician, Dr. William Sears, who strongly encourages all of his patients to adhere to the recommended vaccination schedule. As I reiterate these facts in a palatable fashion, my audience learns not only the true nature of vaccines, but the underlying nature of the anti-vaccine movement.

This *ModernParent* issue employs a series of advertisements and articles to generate vaccine awareness. They gradually lead the audience to the conclusion that vaccines have medical merit, and they should be utilized to establish and maintain the healthfulness in our communities. To vaccinate or not to vaccinate should not be a question. If a child is healthy enough to receive vaccinations, they should. If the anti-vaccination movement continues to gain momentum, we will continue to see epidemic trends in society; and they will be much worse than what we are currently observing.

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