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Savannah Santos College of DuPage

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#### Fighting the Rise of the Anti-Vaccination Movement

by Savannah Santos

(English 1101)

are starting to hear about it more than ever before. Those who oppose vaccinating their children, who many call "anti-vaxxers," believe that vaccines ultimately cause more harm than good. Shockingly, skepticism around vaccines is not a new phenomena; it has existed since "the smallpox vaccine introduction," and continued "unabated ever since" (Whelan 463). Though in recent years, media has accelerated the anti-vaccination movement as more people turn the the internet for information. This movement and their beliefs have piqued the interest, and concern, of people around the globe who wonder why someone would rally against life-saving vaccines.

Anti-vaxxers' reason for not vaccinating is a combination of concern for the safety of their children and distrust of the pharmaceutical industry; paving the way for the many conspiracy theories that fuel the movement. The conspiracies rest upon the idea that "data is faked and harmful side-effects of vaccines are hidden from the public to ensure that pharmaceutical industries and governments are able to make money" (Jolley and Douglas 459). At its very core, anti-vaxx conspiracy theories involve a denial of scientific evidence. As a result, anti-vaxxers believe in a variety of unfounded 'vaccine-injuries,' such as autism.

Andrew Wakefield, a British doctor, was a massive catalyst in the vaccine conspiracy movement. Wakefield published a scientific study in 1998 declaring that the MMR vaccine was causing autism in children. He concluded that the symptoms of autism "had been linked, either by the parents or by the child's physician, with the MMR vaccine" (Ziv 12). Predictably, he gained worldwide attention and support from anti-vaxx parents who didn't want to risk their children 'getting autism.' The impact of their support was enormous - "between 1991 and 2004, the number of unvaccinated children in states with philosophical exemptions more than doubled" (Offit 143). Clearly, the influence of his study yielded real life consequences beyond just skepticism. Eventually, Wakefield's research was found to be a "fraudulent study that… was retracted by the journal that published it" (Ziv 17). Even though Wakefield was banned from practicing medicine in Britain as a result, to this day there is still a widely held belief that vaccines cause autism due to his 'research' (Ziv 17).

The science of vaccines is straightforward and far from a government conspiracy to disable our children. They "work by stimulating our immune systems to recognise a pathogen without exposing us to the disease-causing bacterium or virus itself" (Barrett 17). In response to this, our bodies create antibodies that are pre-programmed to effectively fight the illness if we ever become exposed. Through vaccines, we create a natural immunity without having to deal with the dangers of the actual disease.

In fact, studies have shown a clear danger in *not* vaccinating your children; among those born in 2009, vaccines "prevent[ed] approximately 42,000 early deaths and 20 million cases of disease" (Whelan 464). With thousands of lives being saved from death and suffering, doctors have continually argued that the benefits of vaccinating outweigh any possible risks (Offit 11). Making the decision not to vaccinate is ultimately playing a dangerous game of life or death.

Science denial and opting to remain unvaccinated is already starting to show detrimental effects on our society. In 2019 alone, "there have been 387 confirmed US measles cases, more than 2018's full year total," (Abbott A.3) which at one point was viewed as eradicated in developed

countries. A memorable measles outbreak in the United States involved an unvaccinated seven-year-old who contracted the disease while on vacation in Switzerland. When he arrived back in the US, his symptoms began to worsen and his parents took him to the hospital. He was not quarantined upon arrival, and as a result, the disease spread to children in the waiting room and throughout the rest of the hospital. By the end of the outbreak "140 children were infected and 20 had been hospitalized" (Whelan 468). One simple decision not to vaccinate left dozens of children facing hospitalization and potentially life-ending consequences.

Outbreaks happen when there is no longer herd immunity protecting those who aren't vaccinated. Herd immunity "refers to the indirect protection of unvaccinated individuals when a significant portion of the community is vaccinated against a contagious disease" (Whelan 467). It exists to protects those who are immunocompromised, pregnant, or otherwise cannot medically receive any vaccinations. In order to maintain herd immunity "for highly contagious infections such as measles or pertussis, vaccine rates must be 95%" (Whelan 467). When we allow parents to freely opt their children out of vaccinating, we decrease this required vaccination rate for herd immunity; allowing outbreaks to become larger and more deadly. Because the most vulnerable individuals in our society rely on herd immunity, a parents' decision not to vaccinate doesn't just put their own child's life in danger - it can kill defenseless groups of people as well.

Our government and scientists have recognized that the anti-vaxx movement is becoming a massive problem, but legislation to combat has been difficult and are littered with loopholes. For example, the US mandates that your child be fully vaccinated before enrolling in school, but this doesn't require vaccinations to be administered at the recommended ages beforehand. Babies can still catch and spread disease, so leaving your baby unvaccinated up until school still poses a risk. Even when it comes time to enroll in school, most states allow exemption for religious reasons, and "20 states allow parents to refuse vaccines for "personal" or "philosophical" reasons" (Whelan 464). Religious and philosophical reasoning is so broad that it's hardly a barrier that parents need to pass and is mostly ineffective at making sure kids are vaccinated.

To address parents taking advantage of school mandates, some states have taken the liberty of enacting 'loophole' laws of their own. For example, Missouri passed a law allowing minors to receive vaccines without their parents' consent. According to "Missouri Statute 431.061 'any minor' can consent to 'any surgical, medical, or other treatment or procedures, including immunizations" (Whelan 469). This allows children to seek out a vaccination at any time, without question or consequence. Such laws serve as a major way to fight vaccine resistance and allow children to protect themselves when their parents won't.

Additionally, other states have approached vaccination-avoidance by tackling loopholes headon, such as California, who's governor "signed into law one of the strictest school vaccination policies in the country" (Whelan 467). His bill required "all children enrolled in public or private schools or daycare to receive certain vaccinations, regardless of a parent's religious, moral, or other personal beliefs" (Whelan 467). This aggressive action is a very solid start, but can quickly slide into moral outrage from parents who feel like their rights are being violated (Offit 139). In a more passive approach, Oregon passed their own law "that requires all parents and guardians who wish to claim an exemption from vaccination (that is not based on medical grounds) to receive education about the benefits and risks of vaccines" (Jolley and Douglas 460). Oregon legislators are hoping that when facing the evidence about vaccination, some parents will change their mind, though unfortunately it is not a guarantee. Neither Oregon or California's laws yield a long-term, comprehensive solution to the issue; therefore, we may need to expand our efforts into unconventional methods.

Psychologists Jolley and Douglas agree that legislation like California or Oregon won't be enough to fully combat the anti-vaxx movement. A *more* effective way is to address the problem at its root cause, which are the conspiracy theories (Jolley and Douglas 460). If anti-vaxxers believe

that studies are faked by the government, presenting these 'fake' studies won't be very persuasive. When Jolley and Douglas conducted a study to see the rigidness of belief in conspiracy theories, they found that "once a person is exposed to anti-vaccine conspiracy theories, counter-arguments alone are less effective in improving vaccine intentions" (Jolley and Douglas 466). This means that as soon as someone gets it in their head that vaccines are dangerous, the process of re-educating them becomes much more difficult, and in some cases, entirely ineffective. Presenting evidence based studies, as Oregon did, in order to disprove their pre-existing theories is likely not to be effective when they believe the studies are fake. These types of legislative efforts ultimately won't stop the spread of misinformation or the thinking that got us to this problem to begin with.

Educating adults and children *before* they're exposed would most likely be the most effective method given the psychological grip of vaccine conspiracy theories. At a very basic level, requiring a portion of health class to cover the science behind vaccines as well as addressing the conspiracies around them may impact children's view when they inevitably come across the theories later in life. This could also influence the effectiveness of the laws allowing children to seek vaccines on their own, since they will have access to unbiased, fact-driven education on vaccination. From a damage control perspective, social media applications could also work on limiting the spread of anti-vaxx content and promote scientific studies instead. Some social platforms have already started this, such as "Facebook Inc., Pinterest, Inc. and ... Youtube" who "recently cracked down on vaccine misinformation by blocking certain searches, banning ads or tweaking algorithms" (Abbott A.3) Overall, there is no individual law or regulation that will be able to stop the dangerous anti-vaxx movement. It requires comprehensive efforts on multiple fronts to re-educate the public and prevent the future spread of misinformation.

We may not be able to change the views of every anti-vaxxer who has made up their mind, but it is our societal responsibility to change as many possible. It is vital that we ensure future generations do not fall victim to vaccination hoaxes. If the anti-vaxx issue is not addressed effectively and aggressively soon, herd immunity will continue to erode and put the lives of thousands at risk. In an anti-science era, among citizens and sadly our own political leaders, this change will not come easy; but we have no option when it's life or death.

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