Anti-Vax: 19th Century Insights into a Modern Healthcare Issue

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January 31st, 2019
Word Count: 2429
On January 18th, 2019, governor Jay Inslee declared a public health emergency in Clark County, Washington.\textsuperscript{1} This was not in response to a novel virus, multi-drug resistant microbe, or foodborne illness. In fact, it was issued in reaction to a disease that has been controlled and essentially eliminated in the United States since 2000.\textsuperscript{2} The disease was measles; an illness many of us associate with the beginning of the 20\textsuperscript{th} century rather than the 21\textsuperscript{st}. Also known as “Morbilli” or “Rubeola”, measles is a virus that inflicts its victims with high fever, runny nose, cough, and eye inflammation followed by a characteristic rash that usually starts on the face and spreads to the rest of the body. It is highly contagious; 9 out of 10 unvaccinated individuals will contract the disease when sharing a living space with an infected individual.\textsuperscript{3} Worst of all, the disease has the potential to become devastatingly fatal with panencephalitis developing in 1 out of 1,000 cases.\textsuperscript{4}

Fortunately, John Franklin Enders and colleagues developed an effective vaccine for measles in 1963. Immunization for measles would later be incorporated into the MMR vaccine created by Maurice Hilleman at Merck & Co. in 1971. Today, receiving the MMR vaccine is one of the most important preventative healthcare measures for young children. Adverse reactions of this vaccine are rare, with fever and pain at the injection site being most common. Life-threatening adverse events are especially unlikely with a less than 0.0001\% chance of occurring.\textsuperscript{5} Why then, with an effective and low-risk vaccine available are we witnessing a measles outbreak in Washington? Washington, along with many other US states, allows parents with a personal or

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\item \textsuperscript{1} State of Emergency, Proclamation by the Governor. 19-01. https://www.governor.wa.gov/office-governor/official-actions/proclamations
\item \textsuperscript{2} Measles History. Center for Disease Control. https://www.cdc.gov/measles/about/history.html
\item \textsuperscript{4} Complications of Measles. Center for Disease Control. https://www.cdc.gov/measles/about/complications.html
\item \textsuperscript{5} Galindo BM, Concepción D, Galindo MA, Pérez A, Saiz J. "Vaccine-related adverse events in Cuban children, 1999–2008". MEDICC Review. 14 (1) (2012): 38–43.
\end{itemize}
philosophical objection to decline vaccinating their children. In Clark County, 7.9% of children received vaccination exemptions for entry to kindergarten in the 2017-2018 school year.  

Thus, the question arises: Why are parents opting their children out of vaccination? Commonly dubbed “anti-vaxxers”, these individuals are opposed to vaccination for a variety of reasons. The term “anti-vaxxer” tends to have a negative connotation amongst healthcare workers, and there is a potential to mischaracterize or generalize the diverse reasons individuals may be opposed to vaccination. In fact, being opposed to vaccination is nothing new. Opposition and fear have surrounded vaccinations since their implementation in Britain during the early 19th century. Many of the initial arguments 19th century British citizens made against vaccination practices reflect the same concerns individuals have regarding vaccinations in the United States today. Therefore, investigating the nature of this historical 19th century anti-vaccination movement may lead to valuable insights for healthcare professionals into the underlying reasons of the current anti-vaccination movement in the US.

It is important to note that the anti-vaccination movement in 19th century Britain was not a spontaneous event, but rather the result of a culmination of multiple grievances that British citizens had against government intrusion into healthcare. It began with the Anatomy Act of 1832, which allowed medical researchers to purchase the dead bodies of working class paupers from workhouses if they were not claimed a few days after death. This law was especially unpopular with the lower classes that felt they could be deprived of their choice of what happened to their bodies after death.

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In 1848, Parliament passed the Public Health Act that was implemented in response to the prevalent number of cholera epidemics that plagued many urbanizing areas and allowed for the creation of government-controlled local boards of health.\(^8\) These “local boards” were given powers to control sewage systems, street cleaning, water supply, and regulate whatever else they deemed an environmental health risk. Finally, the Medical Act of 1858, which created the General Medical Council, was enacted to regulate medical practice in Britain.\(^9\) Prior to this act, there was no government system in place from which to determine who was a “qualified” physician. This act, although further legitimizing the practice of medicine, gave the government the power to regulate the practice of physicians. Despite this, many lower and middle class individuals opted for home remedies or unorthodox medicine as their preferred form of medical care. These alternative medical practices often emphasized the healing properties of water, mesmerism, or herbs and were often a more comfortable and less frightening alternative to current medical practices.\(^10\) In fact, orthodox medicine, which was based in Latin and learned in schools, was viewed by many as a mystifying entity reserved only for the elite.

With the passage of the legislation mentioned above, the British government witnessed a vast increase in the power they possessed to regulate the healthcare of its citizens. It is important to note the similarities between this and the situation in modern-day United States. In recent decades, for better or worse, government power has increasingly expanded in the US healthcare sector with the implementation of legislation such as the Patient Protection and Affordable Care Act. Many patients may believe that the government has overstepped its bounds in regulating the

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health of its citizens. This belief would certainly contribute to convictions opposing government-endorsed vaccines and should be taken seriously by healthcare providers.

Expanded British government influence in healthcare set the stage for a series of vaccination policies implemented throughout the 19th century, beginning with the Vaccination Act of 1840. Although it did not make vaccination mandatory, the Vaccination Act of 1840 sought to encourage the working class to receive small pox vaccinations for no charge. Essentially, this act sought to replace the practice of variolation with vaccination. Variolation was the primitive immunization method which operated on the same immunological principles (although not completely understood at the time) as vaccination. However, in this method, bodily material taken from an individual with smallpox (Variola) was then subsequently inoculated in a patient wishing to be immunized against the disease. Although this practice had its occasional successes, it was much more dangerous than conventional vaccination methods of the time. Furthermore, variolation was a practice many of the lower classes could perform in their homes without the supervision of government-certified physicians.

The Vaccination Act of 1840 found little support amongst the lower classes who were seldom interested in the practice of orthodox medicine. As a response, the Vaccination Act of 1853 was passed. In contrast to the previous act, this new piece of legislation was the first instance in which vaccination was made mandatory in Britain. This act stipulated that all children needed to be vaccinated for small pox by three months of age from government-certified physicians.

physicians. Once the vaccination was complete, extensive documentation would then be kept on government record to verify the procedure for each citizen. This new act was substantially unpopular with the working class and was not strictly adhered to. In retaliation, British Parliament passed the Vaccination Act of 1867 which sought to tighten the enforcement of mandatory vaccinations. This act utilized individuals known as “Poor-Law Guardians” whose duty it was to oversee vaccination districts and pay physicians a few shillings for every child they vaccinated. This was done in hopes of incentivizing qualified doctors to convince their patients to become vaccinated. This law also tightened control on the practice of variolation, which was outlawed, and trespassers could be imprisoned for a month if found practicing the procedure. Most significantly though, parents found not vaccinating their child by three months of age would be subjected to a fine of 20 shillings or imprisonment if they could not pay.

In the time between the implementation of the Act of 1840 and the Act of 1867 the roots of the British anti-vaccination movement began to take hold, especially in the working classes. The issue of government-mandated vaccinations was intimately linked with trade unions because many employers often threatened to fire workers who refused to get vaccinated (the spread of smallpox within the factory was apparently bad for business). In response to these employer demands, trade unions allowed workers to overcome these vaccination mandates. In fact, some unions such as the one at the Midland Railway Company used the threat of strike to ward off the vaccination mandate for their workforce. Furthermore, emerging socialist organizations that

formed from the ideologies of the Labor Movement participated in the anti-vaccination
discussion such as the Marxist International Working Men’s Association, which published anti-
vaccination propaganda in their journal The International Herald.\textsuperscript{17}

The British anti-vaccination movement of the 19th century was spearheaded by a fair
share of influential individuals such as John Gibbs. Gibbs, an enthusiastic social justice advocate,
became one of the first individuals to publicly protest the Vaccination Acts by writing his views
towards mandatory vaccination in a pamphlet entitled Our Medical Liberties.\textsuperscript{18} Gibbs’ repulsion
towards mandatory vaccination was most likely influenced by his training as a hyropath.\textsuperscript{19}
Hydropaths were individuals who supported the notion that water-based therapies could be cures
for all ailments of the body. Since alternative medicine greatly clashed with orthodox medical
practices (in which vaccinations were a symbol of) it is to no surprise that Gibbs attacked the
practice of vaccination since it discredited his own alternative medical beliefs. One of Gibbs’
chief arguments was that mandatory vaccinations were a direct attack on the bodies of British
citizens. Gibbs went on to express that these vaccination policies, due to their high fees
associated with opting out of the procedure, targeted the lower classes who could not afford to do
so. Furthermore, he claimed that vaccinations themselves were shrouded in mystery and the
secrets of the technique were kept within the professions that carried them out but not shared
with the masses. Overall, Gibbs concluded that the vaccination laws were part of a grander issue
regarding the increasing centralization and power of the government.\textsuperscript{20}

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\textsuperscript{17} Durbach, Nadja. \textit{Bodily Matters: The Anti-Vaccination Movement in England, 1853–1907}. Raleigh, NC: Duke
\textsuperscript{18} Creighton Michael. \textit{Jenner and Vaccination: A Strange Chapter of Medical History}. Snow & Farnham (1892): 349
\textsuperscript{20} Saint-Victor, Diane S and Saad B Omer. “Vaccine refusal and the endgame: walking the last mile
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The sway that charismatic public figures like Gibbs had over influencing public healthcare opinion cannot be overstated. Many notable US celebrities such as Jenny McCarthy, Jim Carey, and Rob Schneider seem to echo many of the anti-vaccination arguments laid out by Gibbs. These influential individuals can give massive credibility to modern anti-vaccination movements. Therefore, it is essential that healthcare providers understand the impact these charismatic individuals have over a patient’s stance towards vaccination.

Additionally, the British anti-vaccination movement utilized various forms of new media for their messages to reach a large audience. 19th century society in Britain was increasingly becoming a “print” and literate culture with newspapers being used as an effective vehicle for propaganda dissemination. A countless amount of newspaper articles and pamphlets were dispersed which contained numerous rhetorical strategies to argue against mandatory vaccination. These forms of propaganda often involved the utilization of statistics, dramatic stories, and captivating events that would appeal to both the emotion and rationality of the populace. Graphical representations were also used to depict the horrendous reactions (as claimed by the anti-vaccinators) that some individuals experienced when subjected to the mandatory vaccinations.

This may be the most striking similarity to the current anti-vaccination movement in the United States. New forms of media, particularly social media, have become a battleground for 21st century ideas. Anti-vaccination propaganda and rhetoric can be widely disseminated in an unvetted fashion and influence countless individuals. Furthermore, online interest groups can become an echo chamber for individuals with shared beliefs that result in the formation of strong

and extreme convictions. Understanding the dynamics of social media and how to effectively communicate valuable information about vaccination to the public should be a prime concern for modern healthcare providers.

The British anti-vaccination movement of the 19th century continued feverously until in 1907 a new vaccination act was passed which allowed British citizens to omit vaccination of their child if they believed it would be counterproductive to their child’s health. This was a major win for the anti-vaccination movement of the 19th century. However, shifting attitudes towards science and medicine in the 20th century would usher in an age of vaccination unprecedented in the 19th century. Now in the 21st century, we are witnessing a resurgence of anti-vaccination movements worldwide, especially in the US. Healthcare providers should always strive to understand why their patients are opposed to vaccinating themselves or their children. As demonstrated by the British anti-vaccination movement of the 19th century, expanding government influence, charismatic leaders, and new forms of media were major factors that are still relevant today. Investigating historical anti-vaccination movements and the factors that influenced them can offer healthcare providers a fresh perspective on this pressing issue of modern healthcare.