

The Vaccination Problem: A Tragic Study in Ignorance

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There is a small, but significant, group of people who are choosing not to vaccinate their children. As result, we now have measles to worry about again. The disease surfaced in 2015 at Disneyland in California, affecting 131 victims, and spread to other U.S. states as well as to Mexico and Canada. In the Canadian province of Quebec, 159 people became infected; most victims belonged to a tight-knit religious community that shunned vaccinations.

Measles is a highly contagious infection affecting millions of children every year, but fortunately outbreaks in the United States have become rare with the development of the measles vaccine in the 1960s. In fact, although in the year 2000 measles was formally eradicated in the United States (meaning it no longer occurred naturally within US national borders), in recent years the anti-vaccination movement changed all that [1-3].

Sadly, the new measles outbreaks in the U.S. were the results of unfortunate, ill-informed choices by parents that put their children at risk. Furthermore, nearly all of those children who remain unvaccinated were unvaccinated because of parental personal, philosophical or religious preferences, and not for a medical condition that requires them to avoid vaccinations. And the situation goes beyond mumps - it is also true too for recent outbreaks of mumps and whooping cough.

Nearly all of this madness is the result of misunderstandings, rumors and outright lies that continue to circulate about various alleged medical conditions vaccines are said to produce, such as autism or ADHD (Attention Deficit Hyperactivity Disorder). Much of the misinformation was the result of a discredited and fraudulent study produced by Andrew Wakefield, a disgraced physician and researcher. Wakefield's "research" alleging a link between the measles-mumps-rubella (MMR) vaccine and autism was retracted by the journal publishing his study (*The Lancet*) once the enormous methodological and ethical flaws in this work became apparent.

Another prominent "anti-vaxxer" with considerable influence is Jenny McCarthy, who rose to fame as a Playboy model, actress, and host on the ABC television show *The View*, where she provided viewers with dangerous half-truths about vaccines obtained from the "University of Google"[4, 5].

It is people such as Wakefield and McCarthy, supported by scores of disciples untrained in critical thinking, that misinform that public and put the nation's children at risk. They and their followers are the primary obstacle to solving the vaccination problem. An additional obstacle lies with those individuals who, as a matter of principle, do not want to be told what to do by any government,

It is critically important that the US Department of Health and Human Services immunization guidelines [6] be fully implemented throughout the USA. It is also important to increase public awareness of the benefits of vaccines, especially among populations at risk. I suggest that these goals might best be addressed via two complimentary strategies.

First, the malicious misinformation spread by “anti-vaxxers” needs to be confronted with a national information campaign aimed at print, radio and television media (Figure 1). In addition to this, cartoons can be a particularly effective means to communicate this message (see Figures 2 and 3), as well as can images that serve as a grim reminder of the scourge of polio in the first half of the twentieth century (see Figures 4 and 5).

Second, government action is needed on other fronts. In addition to combatting misinformation, there should be penalties for parents who do not vaccinate their children. These penalties could be financial or of a different nature, such as not allowing unvaccinated children to attend day care or school. Yet another means of encouraging vaccinations is to provide participating families with modest payments to encourage participation. Exemptions would be for valid medical reasons only.

There is also much to be learned from the successes of other nations. For example, in January 2016 the Australian government launched its 'No jab no pay' campaign. [7] Parents who refused to immunize their children faced family payment cuts of up to \$15,000 a year. Conscientious and religious objections were not allowed; only those with a doctor's note were exempted. Not surprisingly, this action achieved its desired effect.

Noted Australian Health Minister Jill Hennessy: "Vaccinations save lives. We are getting tough on this issue because it's important that we start addressing things like a significant increase in whooping cough," adding “we know the spread of things like measles is becoming more virulent.” [8]

In Finland, several interventions were evaluated to improve vaccination rates: a mass media campaign and notification of nonvaccinated children to local health professionals and parents. The result of the campaigns increasing vaccination rates significantly. Notification of parents about their nonvaccinated child was found to be especially effective [9].

There are even important lessons to be learned from the Cubans, who offer their populace astounding healthcare outcomes on a financial shoestring [10].

However, in America, whatever approach (or combination of approaches) is chosen must both be compatible with American culture and be constitutionally sound. Thus, draconian approaches such as removing unvaccinated children from the care of their parents or even jailing parents would not be acceptable to the majority of the American populace. Similarly, the Australian solution of withholding family payments (which is given to most Australian families, not just those in dire need) would not work in the US because no comparable program exists in America. Additionally, encouraging

vaccinations by provide participating families with payments to encourage participation would likely be seen by a great many Americans as an unnecessary tax expenditure.

In the end, the best solutions are likely be those of not allowing unvaccinated children to attend day care or school, in conjunction with a media campaign emphasizing the value of childhood vaccination programs.

Finally, judging the impact of any initiative to improve the vaccination rate for children should be straightforward, as vaccination rates are routinely collected (or should be) by county and state health authorities. In addition, random sampling methods may be used to select households with unvaccinated children and apply selected interventions (e.g., correction of possible misinformation) to obtain empirical information concerning the efficacy of various proposed interventions.

In conclusion, we cannot allow the “anti-vaxxers” to harm our children. We simply must prevent the dissemination of their half-truths and lies.

Information Sources

[1] <http://www.medicaldaily.com/measles-outbreak-anti-vaxxers-391545>.

[2] http://www.slate.com/blogs/xx_factor/2016/03/25/unsurprisingly_the_children_of_anti_vaxxers_are_the_biggest_victims_of_measles.html

[3] <http://time.com/136870/measles-antivaxxers-outbreaks/>

[4] <http://www.businessinsider.com/jenny-mccarthy-the-view-autism-vaccines-controversial-quotes-2013-7#ixzz2ZFqFMXSd>

[5] <http://www.skepticalraptor.com/skepticalraptorblog.php/jenny-mccarthy-lies-about-vaccines/>

[6] http://www.hhs.gov/sites/default/files/nvpo/vacc_plan/2010-Plan/nationalvaccineplan.pdf

[7] <http://www.sciencealert.com/australian-vaccination-rates-are-at-an-all-time-high-since-the-govt-threatened-to-stop-family-payments>

[8] <http://www.abc.net.au/news/2015-08-16/no-jab-no-play-laws-to-be-introduced-in-victoria/6700644>

[9] <http://aje.oxfordjournals.org/content/133/11/1152>

[10] <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2095081/>

MEASLES FACTS

Two doses of the MMR vaccine
are close to 100 per cent
effective at preventing measles.



Measles:

Is one the most
contagious diseases.

Causes high fever,
weakness, flu-like
symptoms, and a
telltale red rash.

Spreads through the
air and hangs around
even after a sick per-
son has left the room.

Come within sneezing
distance of measles
unprotected, and
there's a 90 per
cent chance you'll
catch it too.

MACLEAN'S

Figure 1. Educational poster on measles courtesy Maclean's Magazine.

<http://www.macleans.ca/society/health/the-real-vaccine-scandal/>



Figure 2. Sample editorial cartoon promoting vaccination.

http://themoderatevoice.com/wp-content/uploads/2015/02/159483_600-1.jpg

WHY ARE YOU UNVACCINATED?

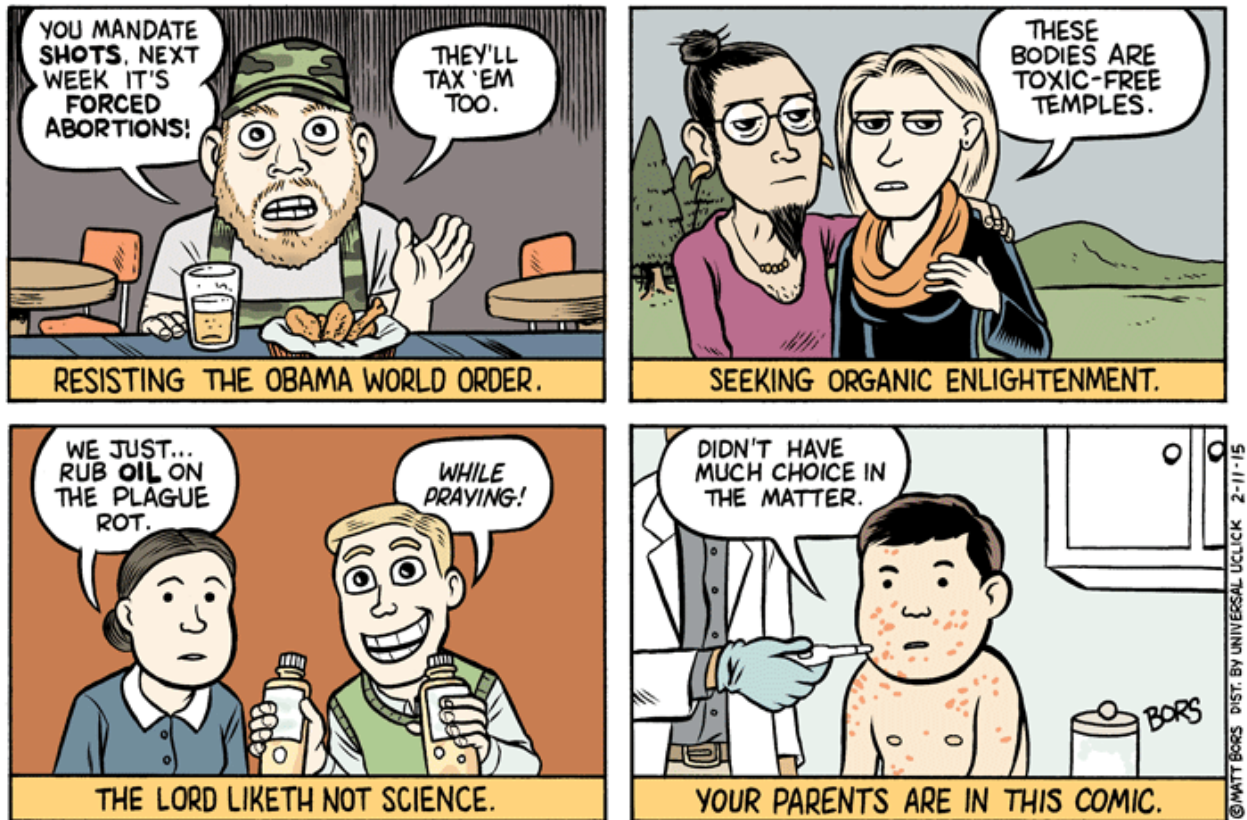


Figure 3. Another editorial cartoon promoting vaccination.

<http://www.dailykos.com/story/2015/2/11/1363702/-Cartoon-Why-are-you-unvaccinated>



Young patients on boards at the Texas Scottish Rite Hospital for Children in Dallas.

photo courtesy Texas Scottish Rite Hospital

Figure 4. Image from the polio era promoting vaccination.

<https://www.texasobserver.org/lessons-unlearned/>



Figure 5. Image from the polio era (patients in iron lungs) promoting vaccination.

<http://www.polioassociation.org/pictures.html>