

Vaccination - why should safe and effective community healthcare initiatives be put in danger by an uninformed minority? there is no controversy - vaccinations save lives

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Alan H Cohen

Department of Pediatric Pulmonology, Stanford University School of Medicine, USA

Correspondence: Alan H Cohen, Department of Pediatric Pulmonology, Stanford University School of Medicine, 291 Campus Dr, Stanford, CA 94305, USA,
Email alanhcohen@comcast.net

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Abbreviations: CHOP, children's hospital of pennsylvania; CDC, centers for disease control and prevention; MMWR, morbidity and mortality weekly report; DPT, diphtheria, pertussis and tetanus

Editorial

Since when did vaccination with MMWR and DPT become a "personal choice" or even more perplexing, a "dangerous and harmful" intervention? I live and practice medicine in Northern California and we are one of the states in America that made the politically driven decision to allow individuals to have their children "opt out" of the recommended, safe and effective vaccine series' most children are required to take to attend public schools, nationwide. At the present time, California is among 20 states that allow exemptions to vaccination based on "personal belief" and among 48 states that allow for religious exemptions. Fortunately California lawmakers are now advancing a bill that would require all school children in the state to vaccinate. Under this new proposal, parents would no longer be able to opt out of vaccinating their children and sending them to school with waivers citing religious or personal beliefs. Exceptions would be available only for children with documented and well defined health problems, such as chronic immunosuppression.

Why do we find ourselves in such a turnabout and "change of heart"? It is unclear to me what government officials and legislators were thinking about when these exemption laws were first put into motion, but they clearly didn't have much in the way of sound science to support true "medical concern" by the overwhelming majority of "mainstream" healthcare providers. Then who advised them of the possibility that sound options existed? Not too long ago there was heavily promoted misinformation about developmental issues and conditions, such as autism, being somehow linked to the vaccine schedule being promulgated. Vaccine preservatives, manufacturing processes and "pharmaceutical industry intentions" were all raised as problematic - irrespective of the scientific foundation for such claims or the rigor of the pronouncements. Fortunately, more rigorous science has now prevailed and lion's share of those few poorly designed and executed anti-vaccine studies have now all been refuted and retracted from the medical literature, with the few "rogue" scientists and researchers no longer allowed to publish in peer-reviewed scientific journals due to their ill-conceived, inflammatory and unsound research practices.

Unfortunately, the damage had a more long-lasting effect and there remains pockets of often-times well-meaning parents and guardians who still seek out "medical information" from the internet, or more often than not, the lay press and entertainment personalities - who

clearly are not well informed about the topics they speak on, and they have unknowingly served to put many hundreds and thousands of otherwise healthy infants, children and adults in harm's way. A recent example of this is the measles outbreak in California where at last count, according to the CDC Website there were no less than 159 reported cases of measles including 4 outbreaks from January 1st - April 3rd, 2015 which already represents 91% of the cases reported in this year alone. Worth noting, the majority of people who contracted the measles in California were unvaccinated. So this wasn't a failure of vaccine potency, but rather a byproduct of ignorance and in my view, a form of child abuse and neglect. Unfortunately, this isn't just an isolated problem in California, in fact 18 states and the District of Columbia were involved in this recent epidemic, and in 2014 the US experienced a record number of measles cases, with 668 cases reported from 27 states.

How can this happen in this day in age? We live in one of the most advanced countries in the world, with some of the greatest medical innovations happening all around us. Vaccines are relatively inexpensive given the benefit to society that they provide, and for those without health insurance or sufficient income, the individual states and federal government subsidize the cost of the entire recommended vaccine schedule for children and adults, and everyone who wishes to can and will be vaccinated and protected from these preventable and oftentimes life altering illnesses. So it isn't a question of availability or access, but rather one of misinformation, ignorance and neglect on the part of parents and health care professionals.

Because of poor education and awareness to the dangers of these highly communicative and infectious pathogens, and ample opportunity for parents and families to be swayed into thinking

they are actually protecting their infants and children by delaying or forgoing vaccination altogether, hiding behind politically motivated legislation, which was not based on proper epidemiology nor science. These legislators also failed to correctly estimate the impact on the protective “herd effect” that these loopholes created. Once vaccination rates dropped below 85-90% outbreaks like those for measles in the recent years have and will increasingly occur unless the scientific and healthcare community step up and do a better job of education on behalf of public health initiatives and legislators follow up with laws that correct these missteps.

I believe we are also dealing with a generation, or two, of people who have not witnessed firsthand the ravages of highly contagious, easily communicative viral infections, such as measles, smallpox and whooping cough. They certainly do not even recognize and comprehend the annual widespread deaths due to vaccine preventable respiratory infections like influenza, which typically kills an average 5,000 to 50,000 people yearly in the USA alone, including hundreds of children. You don't fear what you don't know and see and since historically the herd effect has previously protected you and your family from direct illness with these vaccine-preventable conditions you have been given a false “sense of security” to help empower your limited understanding and respect for the medical science behind vaccines and what is needed in a community to optimize their benefits. These are the circumstances that have allowed full generations of well-meaning people to fall prey to misinformation and innuendo. Ignorance replaces science and people get hurt.

According the California Dept. of Health website, the California Health and Safety Code Section 120325-75 requires students to provide proof of immunization for school and child care entry. Additionally, California Health and Safety Code Section 120375 and California Code of Regulation Section 6075 require all schools and child care facilities to assess and report annually the immunization status of their enrollees. By accessing the most recent summary reports and data files that measure compliance with the school immunization law, conducted in licensed child care facilities and all schools with kindergartens and/or 7th grades the realities of the problems we face and the potential for an even greater healthcare crisis is clear. Although there is a trend in favor of more children being fully vaccinated across all socioeconomic and child care and school settings, overall more than 10% of children in the state of California attending child care are NOT fully and appropriately vaccinated. More worrisome, when looking at vaccination rates in elementary schools across the state of California, there are school districts that fall well below the optimal 92% vaccination rates, such as in Albany, CA where the average vaccination rate of children there is closer to only 65% ! That is a public health disaster waiting to happen.

“Herd immunity” is an important concept when it comes to vaccinations. Essentially, 100% of a population doesn't need to be vaccinated to ensure that the whole citizenry is protected. The level just has to be over a certain threshold in order to prevent an outbreak, thus protecting the unvaccinated simply by controlling how far the disease can spread. According to the Centers for Disease Control, unvaccinated higher risk individuals, such as those with immunodeficiencies and who cannot be vaccinated due to health reasons are at an extremely high risk of infection if the herd immunity rate drops below 92%.

Clearly there are areas and school districts in the state of California and across America where slack, unhealthy and risky vaccination practices are threatening the rest of the neighboring communities by undermining the necessary benefits of herd immunity. More infants, children and adults - both those that are healthy, and those with chronic medical conditions will remain vulnerable and at risk unless public opinion changes, the level of understanding regarding vaccination risks and benefits improves and the legislators fix their politically driven and medical unsound mistakes as soon as possible. Until then I think we as healthcare providers and advocates for children and families need to do a better job of education and reinforcement of sound public health initiatives and vaccinations. We should all take this on in our daily work. Don't just assume parents and caregivers are clear as to the reasons for vaccines and the risk vs. benefit to their children, themselves and the communities we all live in. Take the time to counsel more clearly, using easy to read and understand fact sheets provided from proper sources such as The American Academy of Pediatrics, The Centers of Disease Control or some University and Hospital websites, such as the excellent handouts offered by the Children's Hospital of Pennsylvania (CHOP) Dept. of Infectious Diseases. This is no longer someone else's problem, it is now all of our problem, worldwide. To do nothing runs counter and are against everything we took a medical oath to support.

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