

Educating Anti-Vaccination Communities at Risk

The Reluctance to Vaccinate Could be Mitigated by Eliminating Philosophical Exemptions and Identifying Causal Factors for Autism

Tag words: Vaccination; Anti-vaccination; Autism; Autism Spectrum Disorders; California; Health; Safety Concerns; CDC; Immunizations; MMR vaccine; Vaccine Precaution; Vaccine Exemptions; Vaccine Safety; Medical Exemptions; Philosophical Exemptions; Religious Exemptions; High-Risk Communities; Autism Vaccine Link; Pertussis; Traffic Related Air Pollution; Agricultural Pesticides; BPA; Autism Concerns; Measles; DTap vaccine; Vaccine Insert; Vaccines cause autism; Thalidomide; Misoprostol; Valproic Acid; Maternal Exposure; Environmental Concerns; Anti-Vaxx; Causes of Autism

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Summary: The recent measles outbreak in California has created uproar in the community as parents who vaccinate their children face the dangerous effects caused by those who have opted out of this responsibility. One of the major causes leading parents to join the anti-vaccine movement is the fear of an imagined link between vaccines and autism spectrum disorders. Although research has failed to find any supporting evidence for this causal relationship, states continue to provide parents with various methods of exemptions from the Centers for Disease Control and Prevention's (CDC) current required vaccinations. Legislators and government officials are urged to reconsider their individual state legislature concerning vaccine exemptions in an effort to prevent the spread of communicable diseases among the population.

Video Link: <https://youtu.be/3k4jgJrW3t8>

The Issue: The Rise of the Anti-Vaccination Movement and its Consequences (KNTS)

Recent studies have shown an increase in anti-vaccination advocates in the United States over the past few decades (1). Although the ethical conundrums associated with the choice of vaccination have been debated since the birth of said movements, the medical consequences have begun to show the devastating effects of opting out of these very beneficial technological advances. In the United States, anti-vaccination advocates have aggregated in specific communities increasing the risk associated with their choice to each other, as well as the pro-vaccinating communities surrounding them. California is a major example of this phenomenon where concentrated regions of "anti-vaccinators" reside and interact with each other while pro-vaccinating communities surround them. Studies show that many parents abide by a philosophical exemption to prevent their kids from receiving mandatory vaccination. One of the major deterrents for parents to vaccinate their children is suggested to be the belief that vaccines will cause autism (2). Although this link has yet to be proven by scientific data, there are other environmental factors that could benefit to the increase in autism in recent years. This paper explores these factors and provides parents with preventative measures against environmental factors that may cause autism while promoting the use of vaccines to protect against infectious diseases that could be easily eradicated with their simple choice.

History of Vaccinations (RP)

Vaccinations are one of the greatest medical advances in the past 200 years. The history of vaccinations is a very interesting one and starts in England with the doctor Edward Jenner. This country doctor noticed that milkmaids never caught smallpox, but inevitably were infected with cowpox being in proximity with cows. Dr. Jenner considered the possibility that getting infected with cowpox created immunity against smallpox. He went out to experiment with his theory and inserted pus taken from a cowpox-infected milkmaid into a young boy. When exposing this boy to small pox a few days later he was discovered to be immune. Jenner titled his method “vaccination” since the Latin word for cow is ‘vacca’. The present day definition of vaccines though can also be attributed to the work of the French chemist Louis Pasteur. Pasteur was the first scientist to synthetically weaken viruses for vaccine usage; this playing a great role in the vaccine definition used today: “A suspension of live (usually attenuated) or inactivated microorganisms (e.g., bacteria, viruses, or rickettsiae) or fractions thereof administered to induce immunity and prevent infectious disease or its sequelae” (3).

Initiation of the Anti-Vaccination Movement (RP)

Once the first generation had been vaccinated, there was a decrease in the occurrence of smallpox in the United States. Towards the 1830s though, an anti-vaccination movement had already began to form. This movement was in response to privacy issues possibly stemming from the rise of alternative and irregular medicine. In turn, the US replied to this movement stating that they had the right to immunize since it was for the ‘common good’. For instance in the *Jacobson v. Massachusetts* Supreme Court case in 1905, it was ruled that requiring mandatory vaccinations for the overall health of everyone overrode a person’s rights for privacy. “This tenet has been consistently reiterated and is lent scientific muster by the concept of “herd immunity,” whereby a certain target of the population—approximately 85–95 percent, depending on the disease—must be immunized for protection to be conferred upon the entire group” (4).

Health & Safety Concerns of Vaccines (RP)

In the mid-1970s another anti-vaccination movement was starting to form this focusing more on the health and safety concerns in regards to vaccines. Many people had filed lawsuits in regards to health concerns that they thought might have stemmed from the DPT (diphtheria, pertussis, tetanus) vaccine. This led to the passage of the National Childhood Vaccine Injury Act (NCVIA) by Congress in 1986. This Act changed many things first and foremost putting into the system a process of compensating those who felt they were injured by vaccines under the premise that it is not their fault. It also created new regulations for healthcare providers. For example they now have to report any negative effects occurring in patients after vaccinations according to the Vaccine Adverse Event Reporting System (VAERS). The NCVIA also requires healthcare providers to provide to patients a vaccine information statement (VIS), which lists information about the vaccine, as well as all the benefits and any possible side effects.

FDA Guidance on Vaccine Labeling Requirements (RP)

After a vaccine has passed many stringent tests and is approved by the FDA the next step is labeling it and providing information necessary for the public. According to the National Childhood Vaccine Injury Act (NCVIA), the FDA is required to determine if a label is adequate in regards to the warnings, instructions, precautionary information as well as adverse reaction

information. Not only this but the FDA is required to determine if the information listed is sufficient. Under the Code of Federal Regulations (CFR) manufacturers are obligated to send in their proposed vaccine label/insert to the FDA. Amongst many requirements one is that the CFR requires contraindications must be described and listed. Contraindications are unique cases in which the drug, medicine, or procedure should not be used, as it may be harmful to the patient. Other than the contraindications the warning portion of the insert should include potential safety hazards, descriptions of possible severe adverse reactions, what the next step should be in the case of any of these events occurring as well as the limitations of the vaccine.

The FDA looks at many sources of information when reviewing the inserts such as information from the Vaccine Adverse Event Reporting System (VAERS), current labeling requirements by the CFR, FDCA, and PHS amongst a few (5). Summaries of Important Information (SII) for vaccines are then created and are submitted to the manufacturers as a draft. The SII functions as a guide for manufacturers for their package inserts.

Exemptions From Vaccine Requirements (RP)

The anti-vaccination movements led to the controversy of whether the government can impose mandatory vaccinations on the public and whether that violates privacy. Slowly this controversy led to the formation of three exemptions. Currently in the United States, all 50 states have vaccination requirements for certain diseases in order for children to be allowed entrance into school. The required vaccinations differ by state, as do the exemptions from this requirement. There are three types of exemptions available: medical exemptions, religious exemptions and philosophical/personal belief/view exemptions. Medical exemptions are the only type out of the three that is allowed in all 50 states. The other two exemptions depend on the individual states' regulations (6).

Medical Exemptions (RP)

Medical exemptions from vaccine requirements are usually for one of the following reasons. If the child has previously experienced a serious unfavorable side effect due to a vaccination, or has a serious allergy to some component of the actual vaccine. If the child's immune system is compromised by a condition (temporary or permanent) they can also be exempt. In order for your medical exemption to be approved it must be with a medical note from a physician. As mentioned previously, medical exemptions are allowed in all 50 states.

Religious Exemptions (RP)

The second type of exemption is a religious exemption, which is currently allowed by 48 states. Depending on the state the strictness with religious exemptions varies. For example in New Jersey if a parent sends in a religious exemption form, the administration can not question whether the professed statement is reasonable, or acceptable. Just the word "religion" or "religious" being written in the statement leads to it being accepted. Other states are stricter in regards to this and require that the family be associated with a religious group with sincere objections to vaccinations (7).

Personal Exemptions (RP)

The last type of exemption is a philosophical view or personal belief exemption which is currently only accepted by 20 states. Here the parents can be exempt from vaccinating their kids due to their own personal beliefs. This usually requires a one time annual form to be filled out. Some states allowing this type of exemption require the parents to consider the risks and benefits of vaccinations with their healthcare provider.

This philosophical, conscientious, or personal belief exemption against mandatory vaccines for children can be abided by for a variety of reasons including the believed risk of autism associated with vaccines. One such state is California where anti vaccinating communities have increased in numbers and “some schools report that 50 to 60 percent of their kindergartners are not fully vaccinated and that 20 to 40 percent of parents have sought a personal beliefs exemption to vaccination requirements”(8).

High Risk Communities (KNTS)

If these parents were not aggregated in specific communities, the risk of disease wouldn't be as great as it currently is in high risk areas. These high risk areas represent vaccination deserts where a high majority of individuals have opted out of mandatory vaccinations due most abundantly to philosophical exemptions. The decisions of this growing movement are beginning to affect not only the children within their community, but young children in surrounding pro-vaccination neighborhoods who are simply too young to receive any vaccinations. Recent studies of current California demographics have shown aggregations of anti-vaccinators in communities like Alameda, San Francisco, Sonoma County, Roseville, and Sacramento where the mean percent of refusal for vaccinations was approximately ten percent (9).

Many medical professionals point to the emergence of these clusters as the beginning of what could result in an epidemic for diseases previously considered vanquished. In 2014, the highest number of philosophical exemptions were applied for by California parents and were accompanied by the highest number of pertussis since 1947 and the highest measles cases since 1995. Since measles was considered a vanquished disease in the United States fifteen years ago many have forgotten the actual danger the disease prevents to young children. It's often forgotten or not known that about 400 individuals die of measles daily (according to the World Health Organization) globally and that the measles vaccination caused a 75% drop in measles deaths between the period of 2000 and 2013 (10). The pertussis epidemic California experienced in 2010 is an example of the alarming consequences of not vaccinating children. In this epidemic ten newborn babies died of pertussis infection and recent studies have shown the biggest reason to be the lack of vaccinations in older children (11).

Anti-Vaccination and the New *3rd World* Communities? (KNTS)

This example is one of the few delineating the precarious effects of anti-vaccination movements. Communities at high risk for communicable diseases due to their lack of vaccinations can be considered third-world countries when comparing their technological

advantage against the rest of the continental United States. It's important to note that the term "Third World" is defined here as the minority groups within a nation or predominant culture. A strong belief in concepts not rooted on scientific grounds fuels the continuation of these hot spots and aggravates the spreading of communicable diseases. In the absence of any scientific data establishing grounds for vaccines causing autism, it could be useful to inform all parents regardless of their vaccine issue position to other potential causes.

Women who are over the age of 40 have a 50% higher risk of having a child with autism than women who are 20-29 (12). Women who live within 1000 feet of a freeway have double the chance of their children having autism. Women who reported not taking prenatal vitamins immediately before and during a pregnancy were twice as likely to have a child with autism, one study found. These are just a few of the scientific studies that identify factors that appear to increase the risk of a child being born with or developing autism (13). The false belief that vaccines are related to autism causes many anti-vaccinators to not vaccinate their children. The real causes and factors that are actually linked to autism should be the focus of people trying to prevent autism instead of not vaccinating their children, which can affect not only themselves but people around them.

Traffic Related Air Pollution and Particulate Matter (KNTS)

A recent study found probable cause linking air pollution to children with autism. Using the Environmental Protection Agency's Air Quality System data, the team examined a pool of 279 children with autism and a total of 245 control children to find correlations between particulate matter exposure and the risk of autism in certain California communities (14). Their results concluded that children living in residences that had the highest quartile of exposure were at higher risk for autism. The research accounted for maternal exposure during gestation as well as the infant's first year of life. These findings correlate with their previous epidemiological research mentioned above delineating an association between nearness of residency to a freeway and an increased risk for children to the autism spectrum.

Agricultural Pesticides Increase Risk of Autism (RP)

In a California-based study, it was found that pregnant women who lived near farms and fields, which were sprayed with chemical pesticides, experienced a two-thirds increased risk of giving birth to a child with autism spectrum disorders (15). Autism Spectrum Disorders (ASD) contains a range of developmental disorders with different levels of cognitive impairment. Commonly used pesticides can be neurotoxic, and although they might not affect most of us that much, they can greatly affect the brain as well as the structural development of children especially if exposed during the second or third trimester. Exposure to these pesticides and insecticides can be very harmful especially if exposed during gestation. What is particularly interesting about this study in relation to anti-vaccinators is that one of the areas in which the study was conducted was in the San Francisco area. This happens to be one of the areas in which anti-vaccinator communities tend to cluster. It is interesting to see this connection to an area where many people do not vaccinate due to their concern that vaccines might be linked to autism. No scientific evidence backs this claim but in that area this pesticide study has been conducted, giving a possible explanation as to what exposures could lead to autism.

Organochlorine Insecticides (RP)

In a study done in 2007, it was shown that mothers who were exposed to organochlorine insecticides that were applied within 500 meters of the residence between gestational days 26 and 81 were 7.6 times likely to have their children diagnosed with Autism Spectrum Disorder (ASD) as compared to those with the lowest exposures (16). In a study done in rats, two organochlorine pesticides were looked at: dieldrin, and lindane. It was shown that prenatal exposure to these insecticides lead to reduced gamma-aminobutyric acid (GABA) receptor binding abilities in the brainstem. The brainstem coordinates motor control signals between the brain and the body. In humans the effects of reduced GABA receptor binding abilities can lead to low muscle tone something observed in about 50% of those affected with autism.

Organophosphate Insecticides (RP)

A study done on the effects of exposing newborn rats to organophosphate pesticide diazinon, found suggestions of neuronal loss. The study indicated that even exposures to nontoxic dosages of diazinon could lead to negative changes in neural cell development. It was also found that the acetylcholine synaptic function in youths and adults was changed (17). In another study done in 2000, it was found that neonatal exposure of rats to the organophosphate insecticide, chlorpyrifos, even at non-systemic-toxicity levels can change the development of coordination skills as well as locomotion (18).

Link found between BPA exposure and Autism Spectrum Disorders (ASD) (RP)

A recently published study conducted by researchers at Rowan University School of Osteopathic Medicine (RowanSOM) and Rutgers New Jersey Medical School (NJMS) shows that children with ASD do not metabolize bisphenol-A (BPA) well. BPA is a synthetic compound found in many plastics and epoxy resins. This compound is one of the reasons it is advisable not to microwave plastic containers. Studies show that BPA is released when plastic containers that contain BPA are heated or exposed to heat (19). For many years there has been the question of whether BPA is linked and involved in autism, and this study, although small, is the first indicating that connection. The urine samples of children with ASD and healthy children (control group) were taken and tested for total BPA concentrations as well as free BPA. Total BPA is found to be three times higher in the ASD group compared to the group of healthy children. This study illustrates that pregnant women as well as children might benefit from lower exposures to BPA, a clearly detrimental chemical.

Other Chemical Exposures (KNTS)

The risk of developing autism is strongly influenced by genetics, but it is not the sole element. There are also environmental factors that can influence the development of autism and this is currently a crucial area of study. For example, prenatal exposure to thalidomide and valproic acid has been linked to increased risk of autism. Thalidomide is a drug that was originally used for morning sickness in the 1950's but after it was found to cause birth defects it was no longer prescribed to pregnant women. Now it is used as a treatment for multiple types of

cancer as well as leprosy. Valproic acid is used to treat seizures and people with bipolar disorder. Exposure to chemicals in pesticide has also been thought to increase risk to those who are genetically predisposed to autism to develop the full-blown disorder.

1. *Thalidomide* - Mentioned briefly above was a drug prescribed in the 1950's to alleviate morning sickness associated with the second trimester of pregnancy. Although the drug was proven to cause severe birth defects in children exposed to the chemical while still in the womb, the drug is still used today to treat various diseases such as leprosy and multiple myeloma, cancer in white blood cells. Research on this drug as it correlates to autism is scarce for experiments in the US. However, research conducted in Sweden found a 4% correlation between mothers who had been exposed to thalidomide and their children being diagnosed with autism after following multiple symptoms delineated in the DSMV- III (20).
2. *Misoprostol* - Used today as a preventative measure for stomach ulcers, this drug has also been linked to autism in multiple studies of children in Northeastern Brazil. Researchers found that exposure to misoprostol during the first two months of pregnancy cause ischemic events, or a lack of oxygen, in the fetus. Out of the 23 children in the study, five met DSMV-IV criteria for ADS and two showed autistic-like behavior (21).
3. *Valproic Acid* - Used to treat seizures and prevent migraines- this drug is an anticonvulsant used in the US today. Treatment of rats with valproic acid on the 12.5th day of gestation produces a rodent model of autism. Similarly to the above mentioned teratogens, exposure of the fetus to this chemical before the neural tube closes can cause severe anoxia and have many implications in the infant's childhood health (22).

Physician Conference to Help Combat Anti-Vaxxers Patients with Information (JR)

A recent article from LA Times discusses a Conference at UCLA with Dr. Paul Offit, a University of Pennsylvania pediatrician and the nation's most outspoken vaccine proponent, and several dozen other physicians. The point of the conference was to give doctors ammunition to deal with the increasing number of parents refusing to inoculate their children for contagious diseases. The problem is that while most of these parents are well-intentioned, they are misinformed and convinced that vaccines can cause autism. Offit poses questions to the other physicians that a patient may ask to see how they would respond. "I know you doctors keep telling me that vaccines don't cause autism. If that's true, then why is it on this package insert?" (23). The doctor that he targeted the question at couldn't give a clear answer so he goes on to explain this. Drug companies are required to list any condition known to have occurred within six weeks of a vaccination, whether the medication caused the condition or not. He goes on to say that package inserts are legal documents, not medical documents. These inserts could be the cause of a lot of parents' arguments that vaccinations cause autism and if the physicians can't properly dispel this argument, it will leave the patients misinformed and likely to stand by their choice not to vaccinate. Offit reinforces this by saying "If you look at the original package for chicken pox vaccine, it says 'Broken leg has been associated with this drug.'"

Parents are concerned about bundled vaccines and additives in injections will overwhelm a baby's immune system. In reality, the vaccinations are roughly 16 elements that are being introduced to an infant's immune system in a controlled environment where going through a

normal day they are exposed to thousands of other sources of possible disease causing microbes. Another question is why parents should vaccinate against something like polio that has been eradicated in the US. The answer is that it was eradicated because people were vaccinated for it. Measles was considered eradicated as well until people stopped vaccinating and it started to come back.

Some parents are worried about the Roman Catholic Church's opposition to four vaccines that are made using cells derived from aborted fetuses. Although they are opposed, the Church ruled that the use of these vaccines is acceptable to protect the health of children and pregnant women. The Church's official position calls on researchers to look into an alternative form of immunization. Another concern is the inclusion of formaldehyde in some vaccines which Offit counters by saying that humans have been "making formaldehyde in our cells since we crawled out of the ocean onto land."

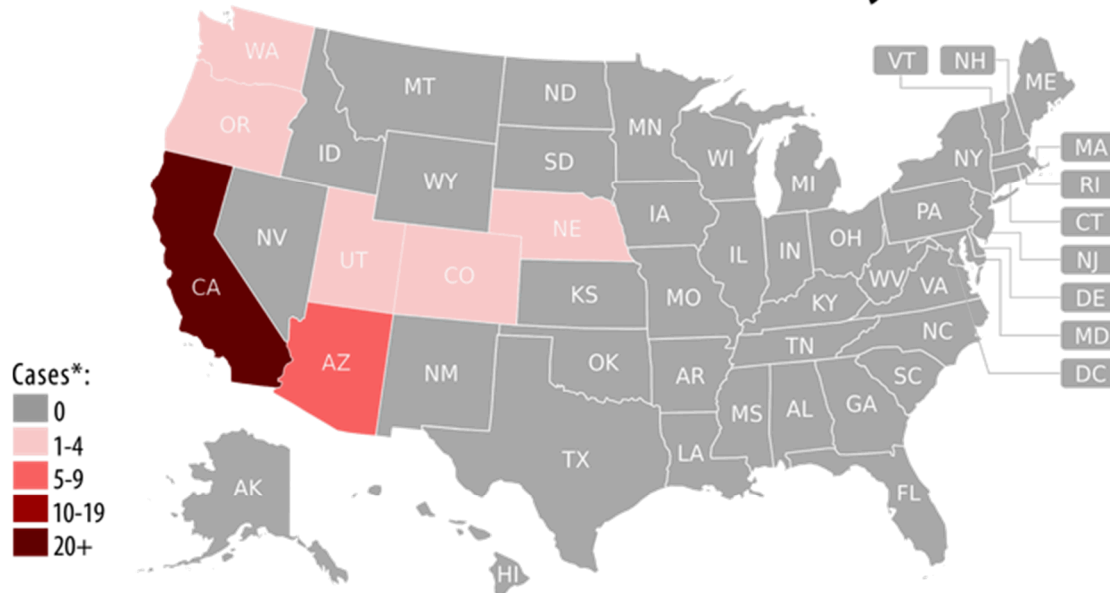
The conference was a good way to battle the misinformation spread by anti vaccinators. By equipping physicians with the knowledge and preparation to answer questions posed to them about vaccinations, it can help to sway the minds of anti vaccinators on the fence and even bring some completely over from the other side. The best way to fight ignorance is with knowledge and educating people is the key to winning the fight against anti vaccinators.

Community Action: Vaccines Do Not Cause Autism. Educating Communities about Identifying Other Potential Causes of Autism

(JR) In an effort to bring awareness to current government officials and request legal action in restricting vaccine exemptions, letters were written to the Senators of California, as well as 16 others states concerning their state legislature on vaccination exemptions. As of now, 17 states allow patients to have a philosophical exemption from CDC mandated vaccinations. Since the strictness and difficulty for receiving approval varies from state to state it becomes an increasingly inefficient system at regulating the safety and well being of the population. It is precisely this tendency towards leniency and lack of required documentation toward approving exemptions from vaccinating that has led to the reappearance of previously eradicated diseases such as the recent measles outbreak in California.

Currently there are only two states, West Virginia and Mississippi, which allow only medical exemptions for vaccinations. Senators are urged to reconsider their states legislature and impose stricter exemption policies for vaccinations.

U.S. Multi-state Measles Outbreak December 28, 2014 - February 6, 2015

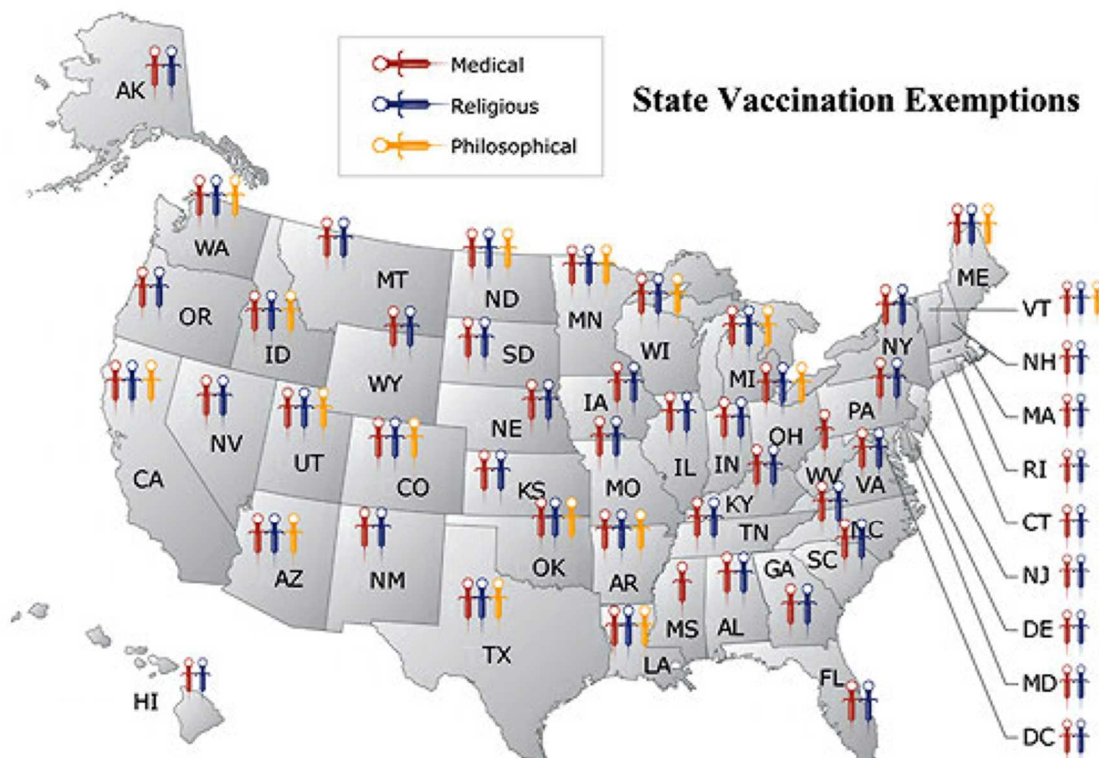


From December 28 to February 6, 2015, 114 people from 7 states [AZ (7), CA (99), CO (1), NE (1), OR (1), UT (3), WA (2)] were reported to have measles and are considered to be part of a large, ongoing outbreak linked to an amusement park in California*.

*Provisional data reported to CDC's National Center for Immunization and Respiratory Diseases



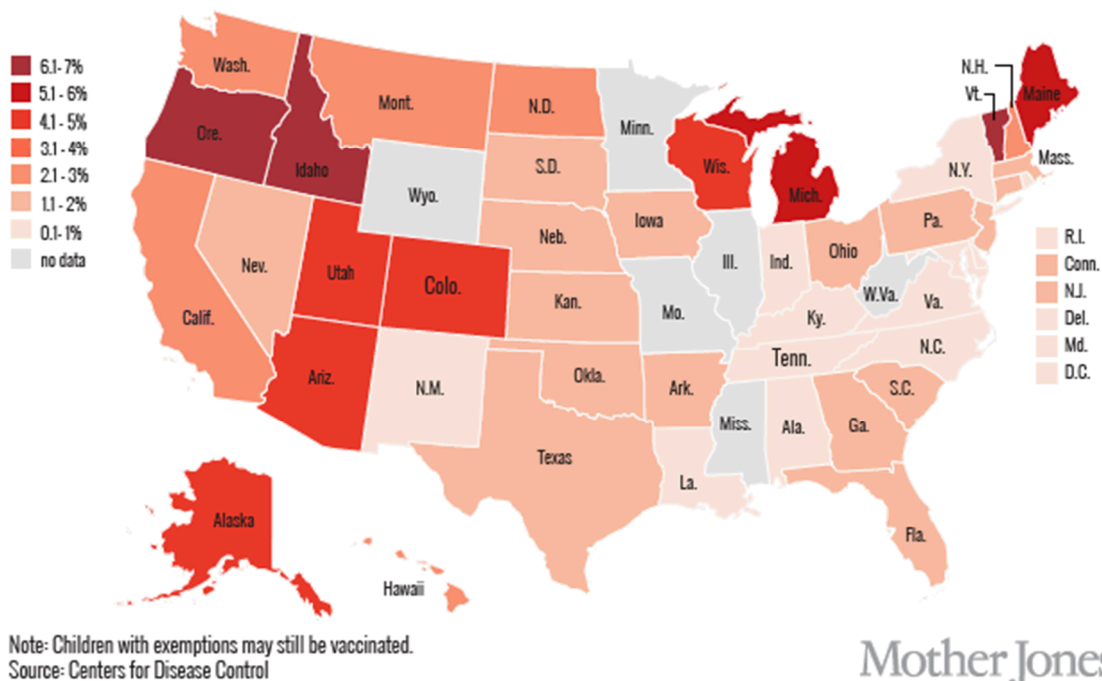
Figure above (24), figure below (25)



Since a complete ban of philosophical and religious exemptions seems radical and may not be entirely realistic, implementing stricter regulations and requesting extensive documentation from parents could be a first step in deterring them from abiding to these specific exemptions. As an example, for a religious exemptions a notarized statement from their clergymen should be obtained by the parent stating the reason for opting out of vaccinations since currently in some states a simple document from the parent claiming religious reasons is sufficient evidence.

Rate of Nonmedical Vaccine Exemptions By State

Percentage of kindergartners with nonmedical exemptions, 2013-14 school year



(26)

Dear Senator Boxer,

My name is James Reyes and I am an undergraduate Biology Major at Rutgers University. In researching current state legislature it has come to my attention that current legislation supports religious, philosophical, and medical exemptions from vaccinations. I write now to advocate a new state legislature allowing for only medical exemptions in California. Current legislation has proven unable to prevent the outbreak of previously eradicated diseases such as pertussis (whooping cough) and measles throughout the state of California.

West Virginia and Mississippi have already taken the initiative to accept solely medical exemptions from vaccinations in an effort to ensure proper vaccination of children. Since

changing legislation from an all-inclusive perspective to such a narrow view can be problematic, even beginning by requiring a notarized document from a clergyman to exempt an individual for religious reasons would be a strong step in the right direction.

As anti-vaccine individuals aggregate in communities they begin to affect not only the children lacking the vaccines, but overlapping pro-vaccination communities who's immunity has dissipated or who are too young to receive the vaccine.

While a medical exception is necessary for the few individuals who have truly confounding medical necessities, it is for the greater good of society to require everyone to vaccinate to prevent outbreaks like what we have seen in California. Thank you for your time.

Sincerely,
James Reyes

After we sent the above letter, we learned that the state of California has advanced a vaccination bill that mandates most parents to have their children vaccinated. This bill will remove the "personal belief" exemption, which would significantly help raise the numbers of those being vaccinated (27). This is definitely a step in the right direction, especially for a state whose rates of vaccinations have hit all time-lows in some regions (28).

Dispelling the link of Vaccines to Autism

The dearth of comprehensive surveys searching for alternate causes of autism is a disappointing anomaly in our age of technology and innovation. As popular belief of a scientifically unsupported link between autism and vaccines continues to spread amongst the population, anti-vaccination movements continue to advocate for their right to abstain from these important preventative measures against disease. In an effort to alleviate parent's concerns of a causal relationship between vaccines and Autism Spectrum Disorders organizations such as Autism Speaks, the Center for Autism Related Disorders (CARD), and numerous other organizations could lead the way towards other potential risk causing agents. Current research is limited but has found multiple factors that correlate to a higher risk of ASD symptoms in children. Even a simple comprehensive survey studying various exposure to chemicals in utero and in the early stages of the child's life (pre ASD diagnosis) could help parents take more efficient preventative measures instead of preventing the vaccination of their children, leading to a higher risk of disease in the long run not only for themselves but for surrounding communities who are pro-vaccination. It is imperative that this propagation of information without a scientific base is halted and in exchange scientific evidence of harmful substance and/or conditions could take its place.

is linked to the development of autism The letter below was sent to Autism Speaks in the hopes that they would push for a comprehensive study to be done to determine whether pre- and postnatal and preschool exposure to a variety of chemicals/or pollutants.

March 24, 2015

To Whom It May Concern:
Autism Speaks
6330 San Vicente Blvd., Suite 401
Los Angeles, CA 90048

To Whom It May Concern:

While participating in a research opportunity at Rutgers University regarding the anti-vaccination movements, I was shocked to find minimal experimentation and literature on potential causes for Autism Spectrum Disorders (ASD). While the never-ending debate on vaccines and their effect on the disorders ensue, anti-vaccination philosophies continue to increase bringing with it an increase in previously eradicated diseases.

While literature proves that the apparent “herd immunity” these parents count on for safety is no longer being effective, there seems to be minimal movement in discovering the cause of this rising disability. As unvaccinated children begin to aggregate in communities like Alameda, San Francisco, Sonoma County, Roseville, and Sacramento where the mean percent of refusal for vaccinations was approximately ten percent, rising levels of pertussis and measles has followed.

In an effort to provide parents with an alternative to potential ASD causative agents we propose a comprehensive survey study testing exposure to chemicals in women’s gestation periods that correlate to ASD present in their children. Ranging from chemicals used to treat other medical ailments such as Thalidomide, Misoprostol, and Valproic Acid to general pesticides present in homes such as Raid, Preen, and Roundup.

Comprehensive research on these and any other common household chemicals may give parents a better opportunity to manage their exposure and risk to ASD for their children. Anti-vaccination is not the answer, but an aggravator to an already established problem. More research could allow further narrowing and prevention of Autism in children as well as education for parents. Thank you for your attention.

Sincerely,
Karen N. Torres Soto

The fact that the word autism is written on the vaccine insert despite many credible sources such as the CDC website, and many research studies stating there is no link between autism and vaccines, can lead to the public being misinformed. The letter below was sent to the Sanofi Pasteur Company in hopes that the company will remove the word “autism” from the DTaP (diphtheria, tetanus, pertussis) vaccine insert.

Dear Sanofi Pasteur Company,

My name is Riddhy Panchal and I am a student at Rutgers University in New Brunswick, New Jersey. In the midst of my research on vaccinations I came upon a vaccine insert for Tripedia, DTaP that listed autism as one of the adverse events reported after the use of the vaccine. According to the Public Health Report of 1997 “The Complicated Task of Monitoring

Vaccine Safety” due to the lack of controls, studies investigating any possible association between vaccinations and events with delayed onset such as autism and learning disabilities for example are very limited. On the vaccine insert it is written:

“Adverse effects reported during post approval use of Tripedia vaccine include idiopathic thrombocytopenic purpura, SIDS, anaphylactic reaction, cellulitis, autism, convulsion/ grand mal convulsion, encephalopathy, hypotonia, neuropathy, somnolence and apnea. Events were included in this list because of the seriousness or frequency of reporting. Because these events are voluntarily reported from a population of uncertain size, it is not always possible to reliably estimate their frequencies or to establish a causal relationship to components of Tripedia vaccine. “

Although this does say that it is not always possible to establish a causal relationship, many anti-vaccinator groups see that autism is written as one of the adverse effects reported and hence choose not to vaccinate. In many regions where anti-vaccinator communities clump up, the fear of vaccinations causing autism is one of the major reasons for not vaccinating. The numbers of those opting out from vaccinating is increasing greatly, which also decreases the effectiveness of the concept of “community” or herd immunity.

Further looking into this the CDC website specifically addresses the topic of whether there is a link between vaccines and autism:

“One vaccine ingredient that has been studied specifically is thimerosal, a mercury-based preservative used to prevent contamination of multidose vials of vaccines. Research shows that thimerosal does not cause ASD. In fact, a 2004 scientific review by the IOM concluded that "the evidence favors rejection of a causal relationship between thimerosal-containing vaccines and autism." Since 2003, there have been nine CDC-funded or conducted studies that have found no link between thimerosal-containing vaccines and ASD, as well as no link between the measles, mumps, and rubella (MMR) vaccine and ASD in children.”

With such strong evidence rejecting a possible connection between autism and thimerosal-containing vaccines such as the Tripedia, DTaP vaccine, there is no reason to continue the mention of autism in vaccine inserts. Even with the reasoning for the listing explained, those already with the belief that vaccinations lead to autism see the mention of autism as corroboration for their theories.

I am writing to you with the request of removing the word “autism” from this specific vaccine insert as well as any other as the evidence rejects any possible link between autism and vaccinations. Mention of autism in a vaccine insert gives many doubtful people more of a reason to not get their children vaccinated.

Thank you for taking your time to consider this. Please feel free to contact me with any questions/concerns.

Sincerely,
Riddhy Panchal

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