Vaccine scene, 2004 update: still MMR vaccination, mercury, and aluminum

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Abstract

Four or five years ago there was little solid evidence on which parents could validate their suspicions that a spectrum of childhood ills, including autism, were causally related to routine childhood immunizations. This is now changing. It is the purpose of this report to review and summarize important new surveys and studies of quality which are now beginning to appear in the literature. All of these have been privately funded, as far as I am aware. None have come from the major government health agencies. Three major areas will be reviewed here: (1) documentation that there has been a real (not just the result of better diagnosis) and rapid increase in the incidence of childhood autism and other forms of neurobehavioral problems among American children, (2) evidence that the vaccine additives, mercury and aluminum, have played major roles in causing these problems, and (3) evidence showing synergistic adverse interactions between mercury/aluminum and the MMR vaccine.

Keywords: MMR vaccination, mercury, aluminum, thimerosal

1. Introduction

Since the year 2000 there have been ongoing hearings of Committee on government Reform of the House of Representatives on issues of vaccine safety. Although these hearings have covered many aspects of vaccine procedures, the focus has largely been the suspected causal relationship between vaccines and the current epidemic of childhood autism spectrum disorders, also referred to as pervasive developmental delay. Congressman Dan Burton, the Committee Chairman until January 2004, initiated the hearings after he witnessed the serious damage that two of his grandchildren suffered after vaccination. One of them, a boy, developed autism.

One of the major findings to emerge from these hearings has been the revelation of gross deficiencies in safety testing and scientific infrastructure of vaccines. Quoting from Congressman Burton's opening statement of June 19, 2002 [1]:

> "Today the National Institutes of Health (NIH) estimates that autism affects 1 in 250 children…(Since boys are affected by autism four times more often than girls, the true incidence among boys is relatively higher)."
>
> "We have learned that a majority of parents whose children have late-onset or acquired autism believe it is vaccine-related. They deserve answers. We have also learned that the parents have been our best investigators in looking for both causes and for treatments. It has been parents who have formed non-profit organizations to raise research dollars to conduct the research that the CDC, FDA, and NIH have neglected to do."

Four or five years ago there was little solid evidence on which parents could validate their suspicions that a spectrum of childhood ills, including autism, were causally related to routine childhood immunizations. This is now changing. It is the purpose of this report to review and summarize important new surveys and studies of quality which are now beginning to appear in the literature. All of these have been privately funded, as far as I am aware. None have come from the major government health agencies. Three major areas will be reviewed here: (1) documentation that there has been a real (not just the result of better diagnosis) and rapid increase in the incidence of childhood autism and other forms of neurobehavioral problems among American children, (2) evidence that the vaccine additives, mercury and aluminum, have played major roles in causing these problems, and (3) evidence showing synergistic adverse interactions between mercury/aluminum and the MMR vaccine.

2. Confirmations of an Increasing Incidence of Childhood Autism and Neurobehavioral Problems in the USA

One of the most comprehensive studies to date on the increasing incidence of autism was undertaken by the California Department of Developmental Services, in which it was found that the incidence of childhood autism in California had increased 634 percent between 1987 and 2002. It was observed that population migrations, shifts in the interpretation of diagnostic criteria, or differences in diagnostic accuracy had limited affects on the increasing prevalence of autism.

As reviewed in a paper by David and Mark Geier, their analysis of U.S. Department of Education statistics showed that there was an increase of 714 percent in total number of autistic children in the U.S. Department of Education from 1992-1993 to 2001-2002.

As reported by the Geiers [2]:

> "We have also analyzed a single report of the U.S. Department of Education, so as to minimize potential year-to-year differences in diagnostic criteria, and found a considerably higher prevalence of autism in younger children in comparison to older children…"

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> "It is apparent that in recent years a very large and real increase in the number of children with autism has occurred, especially among younger children, and potential biases of confounders have had a minimal impact on the observed increase. It is clear the epidemic cannot be a genetic epidemic, because genetics in a given population does not change that rapidly. In order to account for the increase, it must be due to an environmental factor that underwent a rapid evolution during the 1990s. The cost of the epidemic has already been estimated to be between 2 and 20 trillion dollars by such individuals as Congressman Dan Burton." (Comment: These figures apparently are based on Congressman Burton's four years of experience in conducting the Congressional hearings on vaccine safety, on a realistic assumption that large portions of today's autistic children will require life-long custodial care, and on the estimate of what this care would cost per child.)

In a report in the *Journal of American Physicians and Surgeons,* (2003) F. Edward Yazbak reviewed the trends of autism in recent years [3]. In the abstract to the article, Dr. Yazbak wrote: "Once rare, autism has reached epidemic proportions in the United States. The increase cannot be attributed to changes in diagnostic criteria, which have actually become more restrictive. Already a heavy burden on educational facilities, the increasing number of patients afflicted with this serious disability will have an enormous effect on the economy as the affected children reach adulthood. Studies of a potential relationship to childhood vaccines have been limited and flawed."

In the discussion portion of his article, Yazbak quoted from Bernard Rimland, Ph.D., founder of the Autism Society of America and founding president of the Autism Research Institute, who had thoroughly analyzed the American Research Institute (ARI) database of more than 30,000 entries and reported on two clear trends: First, the incidence of autism has increased remarkably becoming "an explosion" in recent years [4] and second, a distinct shift in the time of onset of autistic symptoms has become evident. "Late-onset autism (starting in the second year) was almost unheard of in the 1950s, 1960s, and 1970s; today such cases outnumber early onset cases five to one [5]."

(Comment: In our experiences in our office in seeing autistic children in recent years, we have found that a majority of parents have reported that their children were developing normally, meeting all of their developmental markers including eye contact, person-to-person responsiveness, and towards the end of the first year the beginnings of speech. Subsequently, in a time-related fashion following the MMR vaccine, deterioration took place with loss of speech, loss of eye contact, and withdrawal into isolation. Sometimes this deterioration was rapid and dramatic, in other cases gradual. The important think is that, according to pediatric records and family observations, these children were developing normally by objective as well as subjective observations prior to the MMR vaccine. The experiences of Dr. Bernard Rimland and his group were similar and on a much larger scale [5].)

In describing an increasingly prevalent pattern, Yazbak continued: "Parents in increasing numbers are reporting similar stories. A child, most often a boy who is developmentally, socially, and verbally on par for his age, suddenly stops acquiring new words and skills in the second year of life and then regresses, losing speech, cognitive abilities, and social dexterity. Children in this group are said to have regressive autism. Further, overwhelmed parents may drift apart, and siblings' stress may be manifested as behavior problems [6]."

In a graph showing numbers of children ages 6 to 21 years with a diagnosis of autism attending US Schools from the 1991-1992 to the 2002-2003 school years, as provided by the U.S. Department of Education Annual Reports to Congress, there was an increase from 5,415 in the 1991-2 school year to 118,602 in 2001-2002 school year, the last school year available at time of publication. In conclusion to his article, Yazbak wrote:

> "There has been a true and significant increase in autism in the U.S. To date, the CDC and other governmental health authorities have not given enough attention to this serious epidemic and its present and future impact. They must face their responsibility now."
>
> "Emerging evidence suggests some relationship between MMR and thimerosal-containing vaccines and regressive autism. (Thimerosal contains approximately 50% ethyl mercury). Additional independent and unbiased clinical studies must be conducted in order to determine all causes involved."
>
> "Information about the autism epidemic and its potential causes should be widely disseminated."

3. MMR (Measles-Mumps-Rubella) Vaccine Given to the Mother in the Postpartum Period and Subsequent Autism of the Child

In a highly significant survey of women administered the MMR or monovalent rubella vaccine postpartum, Yazbak and Lang-Radosh identified 60 rubella-susceptible mothers who were revaccinated postpartum with either the MMR or monovalent rubella vaccine and whose children later, on receiving MMR vaccines, became autistic [7]. As reported in *Medical Sentinel* (2001), it was found that forty-five of these women have children diagnosed with autistic spectrum disorder (ASD); another ten women have children with autistic symptoms, ADD/ADHD, or other developmental delays; and four women have children with other health problems, mostly immunologic.

In the discussion portions of the article the authors pointed out the present policy of the U.S. Center for Disease Control and Prevention (CDC) recommending the testing of all pregnant women for rubella immunity at their first obstetrical visit, and that those lacking in rubella immunity be vaccinated in the postpartum period. The rubella vaccine was used exclusively in the past, but lately, on recommendation of the CDC, the MMR vaccine has largely replaced it.

Perhaps more than any study to date, this survey highlights the discrepancies between perceptions of parents who report that their previously typical children begin to display symptoms of autism and lose previously acquired skills after receiving routine childhood immunizations (particularly the MMR vaccine) and the medical community, which has tended to discount

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the possibility of a link between autism and vaccination. Most medical researchers, in fact, completely dismiss such "anecdotal evidence" as scientifically invalid. The authors of the survey commented further: "To ignore the information provided by parents of autistic children as desperate conclusions drawn by grieving individuals is pretentious and overlooks potentially valuable data."

In pointing out that autism is not any less devastating a disease than Congenital Rubella Syndrome (CRS), the authors cited that the greatest annual incidence of CRS (since it became reportable in 1996) was 67 cases in 1970, in comparison with childhood autism, with new cases annually now in the tens of thousands.

As to the mechanism by which vaccines accounted for the induction of autism in the children of these mothers, the authors suggested that it was immune in nature, in that autism tends to be more prevalent in families with immune disorders, and that a mother who has an immune disease has a nine-fold increased chance to have a child with autism [8]. Preservatives (such as mercury in some vaccines) were mentioned as contributing to the toxic load and immune injury [9]. The work of Vijendra Singh was also cited, who has made compelling argument for autism being considered an autoimmune disorder, based on his findings of marked increases in myelin basic protein and neuron-axon filament antibodies (brain antibodies) in autistic children as well as higher measles virus antibodies in autistic children. (The authors found the elevated measles virus antibodies "troubling" in that the parents also reported a deterioration of their children following the MMR vaccine) [10]. Finally it was pointed out that more recent studies have found live vaccine strain measles virus in the intestines of autistic children [11-13] and that the measles virus (or vaccine) can cause immune suppression [14]. (Comment: It is primarily from the work of Dr. Vijendra Singh, now with Utah State University, that the immune basis for autistic spectrum disorder has been established. His work in this area has taken place over many years and has resulted in numerous scientific publications, a few of which are cited here [10,31-34].)

In their conclusions, the authors made the following recommendations:

> "1. The routine administration of a live virus vaccine booster, during the postpartum period, to previously vaccinated women who have remained rubella susceptible, should be reconsidered….
> 2. When obtaining an 'informed consent,' medical practitioners should clearly explain to mothers that it is known that the rubella virus from vaccine may be excreted in their nose, throat, and breast milk.
> 3. Further research into the possibility of viral transmission through close contact between a mother and infant child should be done.
> 4. The excretion of the measles virus from vaccine in breast milk should be investigated.
> 5. Whether 'routine' hepatitis B vaccination in the newborn period is an antigenic insult which increases the risk of developing autism should be examined.
> 6. Early and combined frequent vaccination of children should be reviewed."

4. Children Receiving Mercury-Containing Vaccines are 27.6 Times More Likely to Become Autistic Than Those Receiving Mercury-Free Vaccines

This was the conclusion of D. Geier and M. Geier following a survey of 1,085,320 children derived from the *Vaccine Safety Data Link (VSD)* and presented to the Institute of Medicine January, 2004 [2]. In giving the background and methods of their work, and the basis for this conclusion, the authors described the VSD as a large-linked database that includes vaccination, clinic, hospital discharge, and demographic data. The VSD, they explained, was formed as a partnership between CDC and seven large health maintenance organizations (HMOs). It was initiated in 1991 and covers approximately 2.5% of the US population. In the CDC study, the cumulative vaccine-related mercury exposure was calculated at the end of the first, second, third, and six months of life from automated vaccination records, to evaluate whether being exposed to higher levels of mercury from thimerosal-containing childhood vaccines was a risk factor for childhood neurodevelopmental disorders. The results of this crude analysis (conducted by the CDC) showed that there were statistically significantly increasing adjusted relative risk dose-responses for the effects of additional mercury doses from thimerosal for any neurodevelopmental disorder, stammering, emotional disturbances, language delay, and speech delay.

As independent investigators the Geiers were allowed access to the CDC-sponsored VSD. Children were placed in two groups or "cohorts:" 1) those who had had at least three thimerosal-containing DTaP vaccines (Diphtheria-Tetanus-acellular Pertussis) and 2) children who had had at least three thimerosal-free vaccines. With these criteria the authors were able to access a total of 69,885 children receiving only thimerosal-free DTaP vaccines, and 85,978 children receiving only thimerosal-containing DTaP vaccines. Based on the neurodevelopmental disorder code of autism (299.0), they calculated the incidence rate of neurodevelopmental in each of the two cohorts.

In their conclusion, given in statistical terms, they reported a statistically significant increased risk for autism (relative risk=27.6, attributable risk=3.81 per 10,000 children, $p<0.0001$) in the group receiving a minimum of three doses of thimerosal-containing DTaP vaccine only in comparison to the group receiving a minimum of three doses of thimerosal-free DTaP vaccine only.

As an interesting sidelight of their report, they also did differential calculations in children receiving 25-50 micrograms of mercury (from thimerosal-containing vaccines) and those receiving 75 to 100 micrograms. When one considers that, according to U.S. Environmental Protection Agency (EPA) standards, the maximum safe dose of mercury in any given day is 0.1 microgram per kilogram of body weight, some of these children would have received over 100 times the safe dose of mercury, and many over 50 times the safe dose, depending on the combinations of vaccines used.

Some have argued that if these doses were calculated on a basis of the 60-day intervals between vaccines, the average per day falls within an acceptable safety range. In answer to this, I believe it was Lyn Redwood, RN, who said that this would be

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comparable to saying that, if it is relatively harmless for a healthy adult to take 4 Tylenol tablets a day for 60 days, it follows that it would also be relatively harmless for a healthy adult to take 240 Tylenol tablets in one day.

In a portion of their paper, the Geiers summarized a 77 page report by Bernard et al, which put forth a medical hypothesis that autism was a novel form of mercury poisoning with immune, sensory, neurological, motor, and behavior dysfunctions similar to traits defining or associated with autism, and with similarities extended to neuroanatomy, neurotransmitters, and biochemistry [15]. In a different publication, the Geiers continued, Bernard et al reported that the discovery and increase in the reported prevalence of autism parallels the introduction and spread of thimerosal-containing vaccines. Autism was first described among children born in the 1930s. Thimerosal was first added to childhood vaccines in the 1930s. Prior to 1970, autism was estimated to occur in approximately 1 in 2000 children, while the average prevalence of autism was increased to about 1 in 1,000 children from 1970 to 1990. This was followed by a period of rapid increase in immunization coverage in the US. By 1995, the National Institute of Health (NIH) reported autism to be 1 in 500 children, and in 2000, 1 in 250 children.

The authors concluded: "It is also clear that if somehow, despite overwhelming evidence, the IOM (Institute of Medicine) determines that either thimerosal did not cause or that they are not sure that it caused the current epidemic of autism and other neurological disorders, that the IOM must demand the immediate expenditure of billions of dollars as part of an all out effort to immediately determine what is causing this epidemic before it totally destroys our society."

In a talk given by Mark and David Geier on September 25, 2003 in St Paul, Minnesota, the following additional information emerged [18]:

- "One out of every eight U.S. school children today is in "special education" for learning disabilities. The next release of data is expected to show one in five (20%) being in special education."
- "The hair study of Holmes, Haley, and Blaxill showed that the autistic children are those who are genetically unable to cleanse their neurons of mercury [16]. But do we know that the autistic children are really mercury poisoned? Yes! Chelation challenge tests using DMSA showed that the mercury level in the autistic children is three times that of controls, while the levels of lead, cadmium and other heavy metals in the autistics were similar to those found in the controls [17]."
- "Why do all vaccines contain traces of thimerosal?" (Even though thimerosal is being removed from some but not all vaccines, traces remain in all vaccines – the Geiers explain why): "The answer is that thimerosal isn't really being used as a preservative! It is needed in high doses as a sterilizing agent for an unsterile product! The explanation for this is that the manufacturers do not make the vaccines in clean, sterile laboratory environments… So, towards the end of the manufacturing process, the product is typically infected with bacteria, fungi, and other microbes. Thimerosal is a poor sterilizing agent, so lots of it is used to kill off most of the microbes. Most of the mercury is chelated out… but they never get it all… But what chelation does not remove are the endotoxins (waste products) that have been produced by the bacteria and fungi that were there. These endotoxins remain behind in the product in unpredictable concentrations and with unpredictable effects."

5. Combinations of Toxic Elements May Increase their Toxicities 10 to 100-Fold

As will be found in current *Physician's Desk References,* potentially toxic chemical additives that are introduced into vaccines include thimerosal (still present in traces in all vaccines), aluminum phosphate, formaldehyde, alcohols, phenols, antibiotics, and mineral oil. In addition, all commercial Hepatitis B vaccines are cloned from yeast, and although the quantity of yeast is being reduced by new techniques, traces still remain, which do not make allowances for those with extreme yeast sensitivities.

It is well known and published in the scientific literature that combinations of two chemicals may be 10 times as toxic as either separately, or 3 chemicals 100 times as toxic [19-21]. In cases of the heavy metals, it is known that mercury and lead are extremely neurotoxic and cytotoxic, but their combined synergistic effect is much worse. A dose of mercury sufficient to kill 1% of tested rats, when combined with a dose of lead sufficient to kill less than 1% of rats, resulted in killing 100% of rats tested [22]. Boyd E. Haley, Professor and Chair, Department of Chemistry at the University of Kentucky, has demonstrated in his laboratory that adding various metals such as lead, zinc, or cadmium to brain homogenates synergistically increase the brain toxicity of mercury. The effect was found to be much larger with aluminum, which is also in most vaccines [23].

The levels of mercury thimerosal in vaccines has been shown to be highly neurotoxic, but the effect was found to be much larger due to the synergistic effect with aluminum, which is also in most vaccines [24]. Studies using U.S. CDC data have found thimerosal from vaccines to be a major factor in autism and ADHD, along with prenatal RhoGAM injections which contain mercury and are administered to many Rh negative women during pregnancy [25].

As an incidental intriguing report, in a study from Northeastern University, insights have been gained on the mechanism by which mercury damages the brain and nervous system. It does so by interfering with the body's biosynthesis of the active form of vitamin B-12, "*methyl*cobalamin" [26]. In explanation, folic acid and vitamin B-12 work synergistically as methyl donors in maintaining the integrity of myelin sheaths of the nervous system as well as genetics of the body. The system breaks down if the body cannot manufacture the methylated vitamin B-12. This may be the reason that treating autistic children with *methyl*cobalamin is being found successful in helping many of these children.

Also relevant is a report from Louisiana regarding use of RhoGAM (an injectable gamma globulin product given to pregnant women with Rh negative blood types to prevent potentially fatal kernicterus in the newborn baby). At least until

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recently RhoGAM contained significant quantities of thimerosal. The report from Louisana found a significant increase in childhood autism in mothers that had been given RhoGAM as compared with those who had not been given RhoGAM [27].

6. Aluminum as a Vaccine Additive: Its Affect on Blood Coagulation

In an unpublished paper by Frank Hartman entitled, "Vaccination, Toxicity, Infection and Science," Hartman proposed a plausible theory implicating aluminum toxicity as one of the prime agents in vaccines leading to intravascular coagulation. There are over 7000 references to the toxicity of aluminum, he noted. In regard to its procoagulant effects, he quoted a simple experiment of making a mixture of flour and water (in which the flour readily goes into solution). When one drop of an antiperspirant (contains aluminum) is added, the flour immediately clumps and settles to the bottom. Touching on areas of physics, Hartman went on to explain:

> "All trace minerals, metals, inorganic materials, proteins and amino acids are held in suspension in liquids as microscopic and submicroscopic particles like dust particles in the air. The very small particles are called colloids… Colloids are held in suspension via a very slight electro-negative charge on the surface of each particle. This charge is called a Zeta Potential. The ability of a liquid to carry material in suspension is a function of these minute electrical charges. As the electro-negative charge increases, more material can be carried in suspension. As the charge decreases, the particles move closer to each other and the liquid is unable to carry the same amount of materials. Calcium and heavy metals drop out first, adhering to the vessel wall or organ surface."

> "The quantity of positive and negative charges from chemical elements in suspension as colloids has a major effect on carrying capacity. Electropositive ions decrease carrying capacity while electronegative ions increase it. Elements with only one excess positive or one excess negative ion have little effect on suspensions. Elements with two positive or two negative ions (divalent) such as magnesium and beryllium (+2) have 3,000 times more effect on coagulation or dispersion than elements with single ions. Elements with a valence of 3, such as aluminum (+3) and nitrogen and phosphorus (-3) have 6000 times more effect on carrying capability due to the three extra positive charges. Vaccines contain aluminum salts which greatly exacerbate coagulation."

The importance of Hartman's observations about the adverse effects of aluminum additives in vaccines is underscored by other reports. In the journal, *Brain* (2001), in an article entitled "Macrophagic Myofasciitis Lesions Assess Long-Term Persistence of Vaccine-Derived Aluminium Hydroxide in Muscle," R. K. Gherardi et al reported studies showing both long-term persistence of aluminum hydroxide and an ongoing local immune reaction in patients with systemic symptoms which appeared subsequent to vaccination [28]. In an earlier article in the journal, *Vaccine* (1991) by R. K. Gupta and E. H. Relyveld, the authors pointed out that reactions from the DPT vaccine ordinarily attributed to bacterial endotoxins in the vaccine may also be due to other factors, such as sensitization induced by aluminum adjuvants and other impurities [29].

In regard to aluminum as a vaccine additive, it takes on special significance in a condition known as "shaken baby syndrome (SBS)," in which the findings of brain and retinal hemorrhages in an infant in the absence of known major accidental trauma are considered diagnostic of SBS or "non-accidental trauma." A common scenario is that an infant suddenly and unexpectedly goes into respiratory collapse and stops breathing. The parent or caretaker who happens to be attending the infant at that time, usually untrained in CPR (resuscitation techniques), in sheer panic shakes or slaps the infant in attempt to arouse it. An ambulance is called and the baby taken to a hospital emergency room, where brain CT scan shows brain hemorrhages, and examination reveals retinal hemorrhages. Almost automatically, the person last in attendance of the infant is accused of child abuse, or in instances of infant death, of murder.

Entirely overlooked and neglected in many of these cases is the fact that the respiratory collapse occurred in a time-related (temporal) fashion following vaccines, and yet, based on years of personal experience and observation, the possibility that many could be the result of vaccine reactions has met with near total medical denial. And yet, it is both possible and plausible that aluminum and other adjuvants in vaccines may contribute to coagulopathies that may in turn provoke the brain and retinal hemorrhages in these cases. Other plausible mechanisms by which vaccines may result in brain and retinal hemorrhages are reviewed elsewhere [30].

7. Summary and Conclusions

In the foregoing review it has been shown there are compelling reasons for believing that our society is in danger of being overwhelmed socially and financially by the increasing number of incapacitated children in the form of childhood autism. There is ample evidence that vaccines, especially those containing mercury in the form of thimerosal, are playing a major role in the process. The government agencies (NIH, CDC, FDA) are part of the problem, as eloquently stated by Congressman Dan Burton, in that they have consistently failed to recognize the scope of the problem or to take decisive actions to avert it.

It is becoming increasingly apparent that there is only one possible solution: parents should be allowed absolute freedom of choice in accepting or rejecting vaccines for their children based on informed consent. If this were to be done, vaccines would quickly find their proper level and role in our society. Anything short of this would merely bring substitutions of other and perhaps greater (health) mistakes than we now have.

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