

# AS DISNEYLAND MEASLES OUTBREAK RAGES IN CALIFORNIA, PAKISTANI FATHER ARRESTED AFTER UNVACCINATED SON CONTRACTS POLIO

There is very interesting news out of Pakistan today that the father of a child who has developed polio has been arrested because he refused to allow his son to be vaccinated:

After a polio case was detected here on Thursday, the Kohat administration arrested the father of the affected child because he had refused to get his child vaccinated against polio when vaccinators visited his home. Two health supervisors and a patwari have also been taken into custody for showing negligence in performing their duty.

Three-year-old Mohammad is the second victim of polio in Dhodha area of Kohat district this year.

Deputy Commissioner of Kohat Riaz Khan Mehsud told Dawn on telephone that he issued orders for arrest after an inquiry revealed that the father of the affected child, Mullah Mohammad Yousuf, had not allowed vaccinators to give polio drops to his son.

But Yousuf is not the only parent who has been arrested:

He said 56 people had so far been arrested this year for refusing to get their children vaccinated against polio.

Also on Thursday, two men were arrested in Kohat for not allowing vaccinators to give polio drops to their children. They were identified as Amir Khan and Hassan Khan.

Islamic extremist groups in Pakistan agitate against polio vaccines, spreading conspiracy theories that the vaccines are Western attempts to kill or dominate Muslims. They even attack health workers and in 2014, those attacks killed more people administering vaccines than the disease itself killed.

But of course, in a civilized country like the United States, there couldn't be misguided attempts to prevent vaccination despite the solid scientific basis of the public health benefits of vaccines, could there? Sadly, the mass delusion that has led far too many parents to leave their children unvaccinated due to unfounded fears of autism is having the very predictable result of outbreaks of viral diseases previously under control. Here's the latest on the current outbreak of measles that epidemiologists have traced to Disneyland. Unfortunately, we are learning that because of the reckless behavior of not vaccinating children, even those who have been vaccinated are now developing the disease because of the increased exposure from the outbreak:

As the measles outbreak that started at Disneyland grew to at least 70 cases Wednesday, much of the attention has focused on how the vast majority of patients were not vaccinated for the highly contagious disease.

But some medical experts also have expressed concern about the five patients who contracted measles despite being fully vaccinated.

Their cases point to a lesser-known aspect of the measles vaccine: That even those who get the shots have a small

risk of getting sick, especially older people who were immunized in the 1960s, '70s and '80s.

In 1989, the vaccination program for measles was changed from one dose to two, and that had an effect on how frequently vaccinated patients got the disease:

There's a 5% chance of vaccine failure in people who have had only one dose of measles vaccine, and a less than 1% chance in people with both doses, experts said.

But the expanding pool of unvaccinated people means much more exposure for those who have been vaccinated. Here are the numbers from the current outbreak:

The measles cases spread at Disneyland a week before Christmas. Experts have said the theme park was a perfect incubator because it attracts visitors from all over the world, such as places in Europe and Asia where measles is still a large problem.

Since then, the disease has continued to spread, mostly through people who were not vaccinated. Health officials have immunization records of 43 measles patients; 37 were unimmunized, one had only one shot, and five were fully immunized.

In the US, those who choose to leave their children unvaccinated are acting out of a misinformed belief that vaccines lead to autism. Sadly, science has clearly debunked that idea, so the parents making that choice are just as illogical as the ones in Pakistan giving in to Islamic extremists.

A good layperson discussion of the science of autism and vaccines can be found here. Perhaps

the most authoritative study on vaccines and autism was this one by the Institute of Medicine, published in 2004, which stated clearly:

This eighth and final report of the Immunization Safety Review Committee examines the hypothesis that vaccines, specifically the measles-mumps-rubella (MMR) vaccine and thimerosal-containing vaccines, are causally associated with autism. The committee reviewed the extant published and unpublished epidemiological studies regarding causality and studies of potential biologic mechanisms by which these immunizations might cause autism. The committee concludes that the body of epidemiological evidence favors rejection of a causal relationship between the MMR vaccine and autism. The committee also concludes that the body of epidemiological evidence favors rejection of a causal relationship between thimerosal-containing vaccines and autism. The committee further finds that potential biological mechanisms for vaccine-induced autism that have been generated to date are theoretical only.

A strong reason that the data don't support a causal relationship between vaccines and autism is that there is instead a strong genetic component related to developing autism:

Scientists have discovered that one of the most common genetic alterations in autism – deletion of a 27-gene cluster on chromosome 16 – causes autism-like features. By generating mouse models of autism using a technique known as chromosome engineering, researchers provide the first functional evidence that inheriting fewer copies of these genes leads to features resembling those used to diagnose children with autism.

In that study, scientists found that by reproducing the chromosomal change that is found most commonly in autism patients (autism spectrum should be considered a group of related diseases which can have differing causes) in mice, behavior very similar to autism was seen:

“Mice with the deletion acted completely different from normal mice,” explains Guy Horev, a Postdoctoral Fellow in the Mills laboratory and first author of the study. These mice had a number of behaviors characteristic of autism: hyperactivity, difficulty adapting to a new environment, sleeping deficits, and restricted, repetitive behaviors.

As if that’s not enough, consider this study from Japan, where it was found that in an area where the MMR vaccine was discontinued, autism rates did not go down:

The MMR vaccination rate in the city of Yokohama declined significantly in the birth cohorts of years 1988 through 1992, and not a single vaccination was administered in 1993 or thereafter. In contrast, cumulative incidence of ASD up to age seven increased significantly in the birth cohorts of years 1988 through 1996 and most notably rose dramatically beginning with the birth cohort of 1993.

The significance of this finding is that MMR vaccination is most unlikely to be a main cause of ASD, that it cannot explain the rise over time in the incidence of ASD, and that withdrawal of MMR in countries where it is still being used cannot be expected to lead to a reduction in the incidence of ASD.

So, as global autism (ASD = autism spectrum disease) rates were increasing in the late 1980’s through mid 1990’s, that increase was not affected in Yokohama by the termination of the

measles vaccine.

Finally, a more detailed study published in August 2013 (pdf) found that there was no correlation between autism and the number of vaccines administered or the total number of antigens in vaccines that a child received.

Perhaps the Pakistani practice of arresting parents who refuse to vaccinate their children is something to be considered here in the US. The decision to leave a child unvaccinated creates an unacceptable risk for that child. And as we are seeing in the current outbreak, the growing pool of unvaccinated people means that individual cases of the disease are capable of growing into an outbreak large enough to infect even properly vaccinated patients. The LA Times article linked above notes that about one fourth of the infected California patients required hospitalization, so their disease was relatively severe. Irresponsible parents who choose not to vaccinate endanger their children and all of those with whom they interact. If reason won't work with them, it's time to determine what will bring them to their senses.