

PARENT ADVOCATE VISUAL PRESENTATION NOTES

www.VoicesForVaccines.org

These notes will help guide you through the slides. Each note contains a quote from a source backing the claims made in the presentation. We recommend reviewing the sources linked before giving your presentation.

Safe and Effective: Vaccines work! The story of Dave, a fully vaccinated child

- Dave and his parents are hypothetical, but their decision about vaccination mirrors the one real parents make every day.

Dave is fully vaccinated. This is his story.

- By seven years old, a child should be vaccinated against 14 potentially deadly diseases.
- Talking to your doctor is the best source of information about the vaccines your child needs.

Vaccines work with the immune system.

- Vaccines trigger the same immune response that a germ might trigger, but do not cause illness.
- Upon detecting the vaccine and its inactivated or weakened antigen, the body creates memory cells that will be able to defeat an invasion of a more potent wild disease.

- *“The human immune system is a complex network of cells and organs that evolved to fight off infectious microbes. Much of the immune system’s work is carried out by an army of various specialized cells, each type designed to fight disease in a particular way. The invading microbes first run into the vanguard of this army, which includes white blood cells called macrophages (literally, “big eaters”). The macrophages engulf as many of the microbes as they can.”*

- <http://www.niaid.nih.gov/topics/vaccines/understanding/pages/howwork.aspx>

- In this way, vaccines are quite natural.
 - *“I’m imagining the sound of spluttering “but, but, there are other additives in the vaccines that aren’t natural”. Yes, there are other things in the vaccines. They’re called preservatives. Some preservatives are natural - like salt, for example.*

Others might be manufactured. Without them in our foods and medicines, nothing would last very long and, in fact, would become quite dangerous if ingested. When ways of preserving foods were discovered, it was a great leap forward for humanity- it made lives easier and safer. Fewer people went hungry and far fewer people died from foodborne illness. Similarly, riding horses and harnessing them to carriages and domesticating dogs might not be that natural, but these acts have been of similar help to humans. Preservatives in medicine, in particular, increase safety. They don't increase risk."

<http://www.voicesforvaccines.org/718/>

Vaccines are a healthy choice.

- Vaccines do not cause chronic illness or neurological problems.
 - *"Several mechanisms have been proposed to explain how vaccines might cause allergic or autoimmune diseases. However, flaws in proposed mechanisms are consistent with large well-controlled epidemiologic studies that do not support the hypothesis that vaccines cause chronic diseases."*
<http://pediatrics.aappublications.org/content/111/3/653.full>
 - *"We looked at children who received vaccines and those who didn't, or who received them on a different, slower schedule. There was no difference in their neurological outcomes. Multiple studies have been completed which investigated the measles, mumps and rubella vaccination in relation to autism. Researchers have also studied thimerosal, a mercury-based preservative, to see if it had any relation to autism. The results of studies are very clear; the data show no relationship between vaccines and autism."*
<http://www.autismsciencefoundation.org/autismandvaccines.html>
- Vaccines do not compromise or weaken the immune system.
 - *"Current studies do not support the hypothesis that multiple vaccines overwhelm, weaken, or 'use up' the immune system. On the contrary, young infants have an enormous capacity to respond to multiple vaccines, as well as to the many other challenges present in the environment."*
<http://pediatrics.aappublications.org/content/109/1/124.full.pdf+html>
- They do protect against dangerous diseases and can prevent or reduce hospitalization, suffering, and death.
 - Disease incidence before and after vaccines:
http://science.education.nih.gov/supplements/nih9/bioethics/guide/teacher/Mod2_diseaseoccurrence.pdf
 - *"Before pneumococcal conjugate vaccine became available for children, pneumococcus caused 63,000 cases of invasive pneumococcal disease and 6,100 deaths in the U.S. each year....Since the vaccine was introduced, the incidence rate of invasive pneumococcal disease in*

children has been reduced by about 85%. Pneumococcal conjugate vaccine also reduces spread of pneumococcus from children to adults. In 2011 alone, there were 35,000 fewer cases of invasive pneumococcal disease caused by strains included in the vaccine, including 21,000 fewer cases in children and adults too old to receive the vaccine.”

<http://www.cdc.gov/vaccines/vacgen/whatifstop.htm#pneumo>

○ *“Prior to the licensing of the chickenpox vaccine in 1995, almost all persons in the United States had suffered from chickenpox by adulthood. Each year, the virus caused an estimated 4 million cases of chickenpox, 11,000 hospitalizations, and 100-150 deaths.”*

<http://www.cdc.gov/vaccines/vacgen/whatifstop.htm#varicella>

- The current vaccination schedule was developed to protect children at the times they are most vulnerable to certain diseases.

Vaccines are safe for babies.

- The entire childhood schedule contains 150 antigens.

- This is significantly less than what we received as children.

<http://www2.aap.org/immunization/families/overwhelm.pdf>

- A child’s immune system faces up to 6,000 pathogens every day.

○ *“Some parents worry that too many vaccines given at one time will overwhelm their baby’s immune system. But babies’ bodies fight off germs every day- their immune systems are ready and waiting to keep them healthy! Vaccinations are a drop in the bucket compared to the amount of germs they fight off every day.*

Infants and children are exposed to many germs every day just by playing, eating, and breathing. Their immune systems fight those germs, also called antigens, to keep the body healthy. The number of antigens that children fight every day (2,0006,000) is much more than the number of antigens in any combination of vaccines on the current schedule (150 for the whole schedule).”

<http://www2.aap.org/immunization/families/safety.html>

- Delaying a vaccine offers no benefits and simply leaves a child susceptible to preventable illness for a longer period of time.

○ *“At the heart of the problem with Sears’ [delayed vaccine] schedules is the fact that, at the very least, they will increase the time during which children are susceptible to vaccine-preventable diseases. If more parents insist on Sears’ vaccine schedules, then fewer children will be protected, with the inevitable consequence of continued or worsening outbreaks of vaccine-preventable diseases. In an effort to protect*

children from harm, Sears' book will likely put more in harm's way."
<http://pediatrics.aappublications.org/content/123/1/e164.full>

Ingredients in vaccines are safe

- Vaccines are rigorously tested and are proven safe and effective.
 - *"The safety and effectiveness of vaccines are under constant study. Because vaccines are designed to be given routinely during well-child care visits, they must be extraordinarily safe. Safety testing begins as soon as a new vaccine is contemplated, continues until it is approved by the FDA, and is monitored indefinitely after licensure. The American Academy of Pediatrics (AAP) works closely with the Centers for Disease Control and Prevention (CDC) to make recommendations for vaccine use."*
<http://www2.aap.org/immunization/families/faq/vaccinestudies.pdf>

- Vaccines are rigorously tested before and after they are put on the market. Millions upon millions of doses show that they are safe.
 - *"Healthcare information is available through the Vaccine Safety Datalink for a population of over 9 million people. Scientists use VSD to conduct studies to evaluate the safety of vaccines and determine if possible side effects are actually associated with vaccination. Vaccine recommendations may change if safety monitoring shows that the vaccine risks outweigh the benefits (like if scientists detect a new serious side effect)."*
<http://www.cdc.gov/vaccines/parents/infographics/journeyofchildvaccine.html>

- Vaccines contain just enough to do the job they are meant to do.
 - *"Vaccines are made up of small amounts of the bacteria, virus or other antigen and administered to stimulate the immune system to create antibodies to prevent future infections with the disease. Like many of the foods we eat, small amounts of chemicals may be added to the vaccine's formula to preserve or improve its effectiveness and keep it sterile."*
<http://www.vaccinateyourbaby.org/about/ingredients.cfm>
 - *"Of course, this list does contain a number of chemicals that do sound really scary. However, if you remember the pharmacological principle that "the dose makes the poison," they are much less so. These chemicals are all present at extremely low concentrations in vaccines, certainly not at any dangerous levels."*
<http://www.sciencebasedmedicine.org/toxicmythsaboutvaccines/>

- It is unsafe to leave children vulnerable to disease.
 - *"Each vaccine dose is scheduled using 2 factors. First, it is scheduled for the age when the body's immune system will work the best. Second,*

it is balanced with the need to provide protection to infants and children at the earliest possible age.”

<http://www.aap.org/enus/advocacyandpolicy/Documents/Vaccineschedule.pdf>

Vaccine Ingredients: Thimerosal

- Thimerosal was removed from routine childhood immunizations (except for some influenza vaccines) as a precaution before further research was done.

- Timeline: Thimerosal in Vaccines (1999-2010)

- http://www.cdc.gov/vaccinesafety/concerns/thimerosal/thimerosal_timeline.html

- Thimerosal is an organic mercury compound which has been used in vaccines as a preservative.

- *“Although the names may sound the same, methylmercury and ethylmercury are very different. An analogy is the difference between methyl alcohol and ethyl alcohol. Methyl alcohol is antifreeze, and ethyl alcohol is Bud Light.” Dr. Ari Brown*

- <http://www.immunize.org/thimerosal/>

- *“Thimerosal is added to vials of vaccine that contain more than one dose to prevent the growth of bacteria and fungi in the event that they get into the vaccine. This may occur when a syringe needle enters a vial as a vaccine is being prepared for administration. “*

- http://www.cdc.gov/vaccinesafety/concerns/thimerosal/thimerosal_faqs.html

- Studies have since shown that the amounts found in vaccines was safe.

- *“The mercury contained in some vaccines is handled very differently by the body than mercury found in foods such as fish or the mercury from industrial accidents. Mercury in vaccines is eliminated from the body much faster than methylmercury (8.6 versus 21.5 days).”*

- <http://www.immunizationinfo.org/science/eliminationmethylmercuryandethylmercurybody>

Vaccine Ingredients: Formaldehyde

- Formaldehyde is an organic compound used during the manufacturing of some vaccines to kill the live organism so that your body can create an immune response without getting sick.

- *“The first thing to make clear is that not every vaccine contains formaldehyde. In vaccine production, it is used to kill or inactivate the*

antigens being used. Because of its antimicrobial properties, it cannot be used in any of the "live" vaccines (e.g., MMR, rotavirus, varicella, and some flu vaccines), or else they would be rendered useless. Only inactivated vaccines use formaldehyde during the production process. Once the bacteria or viruses are inactivated, the formaldehyde is diluted out, leaving only minute amounts."

<http://www.harpcratesspeaks.com/2012/04/demystifyingvaccineingredients.html>

- Our bodies can handle the low doses found in vaccines.
 - A pear may contain 600 times more formaldehyde than a vaccine.
 - http://www.cfs.gov.hk/english/whatsnew/whatsnew_fa/files/formaldehyde.pdf
 - Our bodies produce formaldehyde as a natural byproduct of metabolism.
 - *"Formaldehyde is essential in human metabolism and is required for the synthesis of DNA and amino acids (the building blocks of protein). Therefore, all humans have detectable quantities of natural formaldehyde in their circulation (about 2.5 ug of formaldehyde per ml of blood). Assuming an average weight of a 2monthold of 5 kg and an average blood volume of 85 ml per kg, the total quantity of formaldehyde found in an infant's circulation would be about 1.1 mg, a value at least fivefold greater than that to which an infant would be exposed in vaccines."*
- <http://www.chop.edu/service/vaccineeducationcenter/vaccinesafety/vaccineingredients/formaldehyde.html>

Vaccine Ingredients: Aluminum

- The third most common mineral in the earth's crust, aluminum salts (not elemental aluminum) are used as an adjuvant in vaccines.
 - Adjuvants help the body's immune system respond to the antigens in the vaccines so that lower amounts of antigens need to be used in our vaccines.
 - *"Aluminum is used in vaccines as an adjuvant. An adjuvant is a vaccine component that boosts the immune response to the vaccine. The adjuvant effects of aluminum were discovered in 1926.... Vaccines containing adjuvants are tested extensively in clinical trials before being licensed. Aluminum salts are the only materials that can be used as adjuvants in the United States. The quantities of aluminum present in vaccines are low and are regulated by the Center for Biologics Evaluation and Research (CBER)."*
- <http://www.chop.edu/service/vaccineeducationcenter/vaccinesafety/vaccineingredients/aluminum.html>
- Aluminum is everywhere in our lives in the air we breathe, the food we eat, and the breastmilk or formula we feed our babies. The amount of aluminum salts in vaccines is quite small and easily handled by even an infant's body.
 - *"The aluminum contained in vaccines is similar to that found in a liter (about 1 quart or 32 fluid ounces) of infant formula. While infants*

receive about 4.4 milligrams of aluminum in the first six months of life from vaccines, they receive more than that in their diet. Breastfed infants ingest about 7 milligrams, formula-fed infants ingest about 38 milligrams, and infants who are fed soy formula ingest almost 117 milligrams of aluminum during the same period.”

<http://www.chop.edu/service/vaccineeducationcenter/vaccinesafety/vaccineingredients/aluminum.html>

Vaccines Work.

- Before vaccines, most diseases we can now prevent were dreaded, dangerous illnesses.
 - *“Before measles vaccine, nearly all children got measles by the time they were 15 years of age. Each year in the United States about 450,500 people died because of measles, 48,000 were hospitalized, 7,000 had seizures, and about 1,000 suffered permanent brain damage or deafness. Today there are only about 60 cases a year reported in the United States, and most of these originate outside the country.”*
- <http://www.cdc.gov/measles/about/overview.html>
- These disease caused illness, suffering, disability, and death at unacceptably high rates.
 - Complications of vaccine preventable diseases:
http://www.euro.who.int/_data/assets/pdf_file/0005/160754/VPDs_Signsymptomscomplications.pdf
- Vaccines have prevented more than 100 million illnesses in the last hundred years.
 - *“Assuming that the difference between incidence rates before and after vaccine licensure for these diseases was attributable solely to vaccination programs, we estimated that a total of 103.1 million cases of these contagious diseases have been prevented since 1924 on the basis of median weekly pre-vaccine incidence rates.”*

<http://www.febrilnotropeni.net/newsfiles/3777NEJMms1215400.pdf>

Vaccines are important

- Vaccines are some of the most rigorously tested medicines and have some of the largest data sets available.
 - *“Following approval, FDA also carefully monitors the quality of vaccines—all manufactured lots must pass tests before they can be used. And as with all manufacturers of medical products, vaccine manufacturers must follow strict manufacturing standards. In addition, FDA conducts routine inspections of manufacturing sites. FDA also works closely with the Centers for Disease Control and Prevention (CDC) to monitor reports of side effects (adverse events) of vaccines. FDA and*

CDC take all reports seriously, and work together to evaluate and address any potential problems.”

<http://www.fda.gov/AboutFDA/Transparency/Basics/ucm194586.htm>

- Like any medication, vaccines can cause side effects. Most vaccine side effects are mild.
 - *“The side effects associated with getting vaccines are almost always mild (such as redness and swelling where the shot was given) and go away within a few days. If your child experiences a reaction at the injection site, you can use a cool, wet cloth to reduce redness, soreness, and swelling.”*
- <http://www.cdc.gov/vaccines/parents/vaccinedecision/sideeffects.html>
- Risks from disease are far, far greater.
 - *“Comparing the risk from disease with the risk from the vaccines can give us an idea of the benefits we get from vaccinating our children.*
 - DISEASE
 - Measles
 - *Pneumonia: 6 in 100*
 - *Encephalitis: 1 in 1,000*
 - *Death: 2 in 1,000*
 - MMR
 - *Encephalitis or severe allergic reaction: 1 in 1,000,000”*

<http://www.cdc.gov/vaccines/vacgen/6mishome.htm#risk>

Community immunity is crucial

- Vaccines do not come with a 100% guarantee.
- Choosing not to vaccinate affects all of our children.
 - *“When a critical portion of a community is immunized against a contagious disease, most members of the community are protected against that disease because there is little opportunity for an outbreak. Even those who are not eligible for certain vaccines—such as infants, pregnant women, or immunocompromised individuals—get some protection because the spread of contagious disease is contained. This is known as ‘community immunity.’”*
- <http://www.niaid.nih.gov/topics/pages/communityimmunity.aspx>
- *“Counties with higher exemption rates had higher rates of reported pertussis among exempted and vaccinated children when compared with the low-exemption counties.”*
- <http://www.ncbi.nlm.nih.gov/pubmed/23733795>
- When a family chooses to not vaccinate they also jeopardize the safety of others.
 - *“And in terms of immunity—protecting Jude’s health, and the rest of my family’s—I prepared by creating a wall of protection for Jude by vaccinating the whole family. People with Down syndrome often have a compromised immune system, which means that they are more susceptible to things like rotavirus, the flu, and other vaccine-*

preventable diseases. Because their systems don't always work in typical ways, they also more likely to experience complications due to the illnesses vaccines prevent."

<http://www.voicesforvaccines.org/protectingjude/>

- This includes:

- Infants too young to be vaccinated

- *"I am the mother of a beautiful four month old baby girl. When our daughter was 5 weeks old she began having a mild cough. Within a few days her coughing spells became much more frequent and intense, she developed a fever, and started having apnea episodes where she would stop breathing for several moments. It became clear that we were dealing with something very serious. We brought her to the doctor where our fears were confirmed: she was diagnosed with pertussis (whooping cough)."*

- <http://momswhovax.blogspot.com/2012/02/everleesstory.html>

- Pregnant women and their unborn babies

- *"Brenda was born in 1959, a victim of congenital rubella syndrome. I contracted German measles about 2 weeks into my pregnancy. I did not know I was pregnant at the time. I was working as an office nurse for a physician who also happened to be my personal doctor. He gave me a huge dose of immunoglobulin when I suspected that I could be pregnant. I attribute that intervention to the fact that my daughter was born with such minor problems. She had congenital cataracts, a mild hearing loss, very mild cerebral palsy and an atral-septal defect in her heart that closed on its own about age 4."*

- http://www.hknc.org/Rubella_One_Mothers_Story.htm

- The immunocompromised

- *"In 2010 our then twoyearold son, Ben, was diagnosed with Acute Lymphoblastic Leukemia (ALL). His diagnosis meant he would spend more than three years being treated with chemotherapies and steroids. During this time, and for many months afterwards, his immune system was compromised. Every minor illness had the potential to balloon into a more complicated condition requiring additional treatments. In March 2011, Ben received a routine spinal tap during which spinal fluid was removed and chemotherapy was injected in his spine. Days after his treatment we were informed that a child in the same unit had been diagnosed with measles. Ben could have breathed air containing the measles virus."*

- <http://www.voicesforvaccines.org/whenitsnotachoice measlesandleukemia/>

- Those that cannot be vaccinated

- The small percentage of healthy vaccinated children whose vaccine was not 100% effective.

Benjamin's story

- *“Benjamin received the gift of life! A week after that, he finally came off of the vent that had been helping him breathe the whole time he was in the PICU. Two weeks after his transplant we were on the step-down cardiac unit, and a month after that, we were finally home! The reason I am sharing Benjamin’s story is that on top of everything else he’s had to go through during his short life, he is also now immunosuppressed. He will be for life. This means that his immune system does not work the same as everyone else’s.”* <http://www.voicesforvaccines.org/advocatingforbenjamin/>

Protecting our communities

- *“Still, despite this medicine, my sons are still vulnerable to disease. Harrison, Holden, and Davis’ bodies don’t have the amazing immune system memory function that the rest of us take for granted: their bodies don’t make cells that fight off disease....Langford gets all of his vaccinations, but his brothers simply cannot, since their bodies would not mount the immune response to the small dose of the vaccine. So, even with their medications, they are more at risk than he is of catching an unexpected viral or bacterial infection, and of that infection becoming very serious very fast....Most of you have never met my kids, but you might know other kids - and adults - with primary immune disease. They are your neighbors, your friends, and your coworkers. Many patients of PID don’t visibly look sick, so you might not even know that they have this underlying condition, but they are in every community and they need protection. If you do not vaccinate, you are putting them at risk.”*
<http://www.voicesforvaccines.org/pleasehelpmekeepmychildrenhealthy/>

Take action

- Speak up about why you immunize to make vaccination normal.
 - *“Based on these findings the Report recommends that government agencies, public health professionals, and other constituents of the public health establishment . . . publicize the persistently high rates of childhood vaccination and high levels of public support for universal immunization in the U.S.”*
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2386034
 - *At least 95% of parents in both groups [vaccinating parents and non-vaccinating parents] indicated that they had consulted their “people network” for insight into making vaccination decisions. Parents reported they paid the most attention to their spouse or partner’s opinion. Pediatricians were next in line, followed by friends and relatives. . . . Here’s why that’s important: 72% of non-conformers’[non-vaccinating parents] friends and relatives advised them to disregard CDC*

recommendations compared with just 13% of conformers' [vaccinating parents] friends and family members."

<http://healthland.time.com/2013/04/15/how-social-networks-influence-parents-decision-to-vaccinate/#ixzz2rifDSRGF>