Answering your questions about vaccines.

WHAT ARE VACCINES AND HOW DO THEY WORK?

Vaccines play an important role in keeping us healthy.

They protect us from serious and sometimes deadly diseases like measles, mumps, influenza, polio and more. A vaccine is made from very small amounts of weakened or dead germs; your immune cells see these dead germs and prepare your body to fight diseases. Vaccination is the act of getting a vaccine, usually as a shot. Immunization is the process of becoming immune to (protected against) a disease.

WHY DO CHILDREN TODAY NEED SO MANY VACCINATIONS?

To save lives.

Advances in medical science have developed vaccines to protect us against more than 26 dangerous diseases. Babies are especially vulnerable, and children under age one are at high risk of hospitalization or serious complications from vaccine-preventable diseases, such as seizures, brain damage, blindness and even death.

IF WE DIDN'T HAVE VACCINES, WOULD CLEAN WATER AND MODERN HYGIENE PREVENT THESE DISEASES ANYWAY?

No.

Clean water and good personal, home and public hygiene help slow down or stop some germs from spreading, but they don't get rid of diseases. Some diseases — especially respiratory diseases that spread through the air, like measles —are more difficult to prevent. The bottom line is that as long as diseases are around, people will continue to get sick. And that's why it's so important to get vaccinated.

ARE CURRENT VACCINATIONS SAFE AND EFFECTIVE FOR THE GENERAL PUBLIC?

Any licensed vaccine is vigorously tested before it is approved for use, regularly reassessed and constantly monitored for side effects.

Decades of research and study by experts that include government doctors from the Centers for Disease Control and Prevention, the Food and Drug Administration and the National Institutes of Health as well as independent academic scientists from universities, the American Academy of Pediatrics and medical centers that are not affiliated with either the federal government or pharmaceutical companies have shown that vaccines are among the safest medical interventions known. The World Health Organization (WHO) states that there is no single preventive health intervention more cost-effective than immunization and reports that immunization currently prevents 2 to 3 million deaths every year. While no drug or treatment is 100 percent safe, vaccines are far, far safer than the diseases they prevent.

WHAT IS THE TESTING PROCESS FOR VACCINES AND HOW DO WE KNOW THEY WORK?

Before a vaccine is recommended for use in the United States, the Food and Drug Administration (FDA) makes sure that it works and that it's safe.

Thousands of people participate in clinical trials to test vaccines before they can be approved by the FDA. After licensing, the Vaccine Safety Datalink, Post-licensure Rapid Immunization Safety Monitoring System (PRISM), and the Clinical Immunization Safety Association (CISA) track adverse reactions that could be associated with a vaccine. Continued monitoring helps ensure that vaccines have a safe track record over time. Since vaccines were developed, the number of babies and adults who get sick or die from vaccine-preventable diseases has greatly decreased, and some diseases have been wiped out altogether in the U.S.

WHAT IS WEST VIRGINIA'S CURRENT VACCINATION LAW?

To enroll in public school in West Virginia, state law requires diphtheria, pertussis, tetanus, polio, measles, mumps, rubella, varicella and hepatitis B, unless properly medically exempted.

West Virginia currently allows only medical exemptions from childhood vaccine requirements that are mandatory for kids to attend daycare or childcare, public and private schools.

WHAT IS WEST VIRGINIA'S VACCINATION RATE?

With some of the strictest immunization policies in the nation for children entering the public-school system, **West Virginia leads the nation for school-age vaccination rates, with near 97 percent of school-aged children vaccinated.** However, West Virginia ranks as one of the lowest for getting young children between the ages of one and three their vaccinations.

HOW MANY EXEMPTIONS DID WEST VIRGINIA PROVIDE IN 2017?

There were 60 medical exemption requests received in 2017 and only two were denied.

WHAT IS HERD IMMUNITY?

Herd immunity occurs when a high percentage of the population is protected through vaccination against a virus or bacteria, making it difficult for a disease to spread because there are so few susceptible people left to infect. This can effectively stop the spread of disease in the community. It is particularly important for protecting people who cannot be vaccinated. These include children who are too young to be vaccinated, people with immune system problems, and those who are too ill to receive vaccines (such as some cancer patients). Once enough people are protected, they help to protect vulnerable members of their communities by reducing the spread of the disease. However, when immunization rates fall, herd immunity can break down leading to an increase in the number of new cases. While the vaccination rate required to achieve herd immunity varies by vaccine, it typically ranges from 80 percent to 95 percent of a given population.

DO VACCINATIONS CAUSE AUTISM?

Although fears grew several years ago that vaccines might cause autism, research backing up these worries has been discredited, and **study after study since then has shown no link.** The Institute of Medicine, an independent group that advises the U.S. government on health matters, has strongly advised that researchers stop wasting time looking at vaccines and look elsewhere for the causes of autism.

WHAT ARE THE CONSEQUENCES IF WEST VIRGINIA ALLOWS NONMEDICAL EXEMPTIONS FOR VACCINATIONS?

Although all states have vaccination mandates for schoolchildren, in recent years many have granted a growing number of nonmedical exemptions. **As a result, the risk of infectious disease outbreaks, especially among children, is increasing.** Clusters of exemptions have cropped up in certain communities, eliminating those communities' herd immunity and leading to outbreaks of vaccine-preventable diseases.

HOW ARE OTHER STATES DEALING WITH THE ISSUE OF VACCINE EXEMPTIONS?

All but three states — California, Mississippi and West Virginia — accept religious or philosophical exemptions. **The American Academy of Pediatrics recommends that all states eliminate nonmedical exemptions because they are inappropriate for individual, public health and ethical reasons.** Pediatric officials conclude that although parents should be informed and involved with their children's health care, childhood immunization exemption policies should be designed to best serve the interests of individual children and communities for public health safety. All 50 states and the District of Columbia do allow medical exemptions.

WHAT IS WEST VIRGINIA UNIVERSITY'S STANCE ON VACCINATIONS?

On the question of the safety and efficacy of vaccines, WVU relies upon the experts in the fields of infectious diseases, pediatrics and other medical specialties, on our campus and elsewhere, who have studied vaccinations and their effect on people. Their recommendations have shaped our teaching and policies and will continue to do so. **WVU strongly endorses the latest recommendations from the CDC on adult and pediatric immunizations.** We believe these evidence-based recommendations provide the best practices for maintaining and improving the health of our population.

Sources: Centers for Disease Control, World Health Organization, vaccines.gov, West Virginia Department of Health and Human Resources

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